

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.

## Horizontal Infrastructure Rebuild Strategy Management Plan

**Story:** SCIRT Management Plans

**Theme:** The SCIRT Model

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A plan which defines the strategy underlying the SCIRT rebuild programme.

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](http://www.scirtlearninglegacy.org.nz)



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## Horizontal Infrastructure Rebuild Strategy Management Plan

Review:

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## **ACRONYMS, ABBREVIATIONS AND DEFINITIONS**

<b>Term</b>	<b>Definition</b>
AA	Alliance Agreement
AOC	Actual Outturn Cost
ALT	Alliance Leadership Team
ADN	Alliance Defect Notice
AM	Alliance Manager
AMT	Alliance Management Team
CCC	Christchurch City Council
CERA	Canterbury Earthquake Recovery Authority
CHIRP	Christchurch Horizontal Infrastructure Rebuild Programme (The Works)
DMP	Design Management Plan
DTL	Delivery Team Leader
EMP	Environmental Management Plan
EOC	Estimated Out-turn Cost
FAT	Factory Acceptance Test
FMP	Financial Management Plan
FOC	Forecast Out-turn Cost
FFTC	Forecast Final Target Cost
GST	Goods and Services Tax
HIRAC	Hazard Identification, Risk Analysis and Control
HIRS	Horizontal Infrastructure Recovery Strategy
HRMP	Human Resources Management Plan
IAT	Integrated Alliance Team
IDV	Independent Design Verifier
IE	Independent Estimator
IFA	Independent Financial Auditor
IRMO	Infrastructure Rebuild Management Office
ITP	Inspection and Test Plan
IWMS	Integrated Work Method Statements
JDE	JD Edwards Accounting System
KPI	Key Performance Indicator
KRA	Key Result Area
NZTA	New Zealand Transport Agency
NOP	Non Owner Participant
OPS	Overall Performance Score
PMP	Programme Management Plan
PMS	Programme Master Schedule
QMP	Quality Management Plan
RFQ	Request for Quote
SA	Supply Agreement
SAT	Site Acceptance Test
SCIRT	Stronger Christchurch Infrastructure Rebuild Team
SCHIRP	Stronger Christchurch Horizontal Infrastructure Rebuild Plan
SWG	Specialised Working Group
TLG	Tactical Leadership Group
TMTG	Tactical Management Traffic Group
TOC	Target Out-turn Cost
USC	Utility Service Coordinator

## 1.0 INTRODUCTION

### 1.1 Purpose

The purpose of this plan is to define what Strategy is to be applied to the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) and how those activities are to be undertaken to meet SCIRT objectives.

### 1.2 Objectives

The following items are extracted from the Alliance Agreement objectives as relevant to Strategy:

1.1.1 **The Alliance objectives include:**

- a) Establish for all residents, an interim level of service for water, wastewater, stormwater and roading within six months
- b) Quickly protect the environment and reduce future health hazards
- c) Do the right thing right, at the right time to the right standard every time. Complete the rebuild effort to prescribed standards with minimal rework
- d) Co-ordinate the work with others doing rebuild work.

### 1.3 Requirements

There are no specific strategic requirements imposed by the Alliance Agreement or by legislation. SCIRT is free to determine an appropriate management approach.

### 1.4 Relationship to other Management Plans

This plan relates closely with the Scope Definition Plan and the Value for Money Plan

## 2.0 DEFINITIONS

**Strategic Review**

A structured process of strategic planning evaluation and decision-making described in subsequent sections.

## 3.0 RESPONSIBILITIES

The Alliance Manager is responsible to the Alliance Leadership Team (ALT) for establishing and maintaining a strategic plan for the general sequencing of work in the program.

The Alliance Manager may assign the above responsibilities to a member of the Alliance Management Team (AMT).

## 4.0 STRATEGY DEVELOPEMENT

### 4.1 Underlying Delivery Sequence

The underlying sequence for the delivery of the work program can be summarised as follows:

- emergency response work (substantially complete civil defence and CCC processes)
- initial response (immediate) work, generally as a follow-on from emergencies. This is well under way and expected to be completed before year-end 2011
- several processes in parallel:
  - assessment of damage (this activity varies greatly with infrastructure type)
  - reviewing the city infrastructure planning and the resilience of the horizontal infrastructure systems
  - scoping the rebuild
  - preparing the delivery vehicle (Stronger Christchurch Infrastructure Rebuild Team)
  - merging of CCC activities under way (Infrastructure Rebuild Management Office (IRMO))
- prioritising the program of work
- integrating work with that of other agencies and utilities
- scheduling projects with drivers and in processes as described in the Schedule Management Plan
- carrying out the design, construction and handover of the rebuilding.

This explanation of sequence is simply an outline of activities that will occur as a natural by-product of other plans for the rebuild program. They are not described as a management tool in themselves.

### 4.2 Strategic Review

SCIRT will undertake a Strategic Review to assist in the definition of the nature, scope and sequence of the work to be undertaken in the Rebuild.

The review is a high-level challenge process for two key elements:

- the relationship of rebuild activities to town planning of the city
- the type of infrastructure systems that are built.

The reasons for the review of these elements are that:

- the nature of the city and the plans for its future has changed following the earthquakes
- the infrastructure systems must be made more resilient to the risk of damage from subsequent earthquakes
- the Canterbury Earthquake Recovery Act specifically requires 'restoration and enhancement' for infrastructure and other rebuild.

The outcome of the Strategy is intended to be:

- to cause robust strategic decision-making on infrastructure reinstatement
- to enable an economic well-targeted Christchurch Infrastructure Rebuild Plan.

The Strategic Review is described as follows:

**4.2.1 Introduction**

- The following sets out the project outcomes, project deliverables, key milestones and timelines for the development of a strategic plan for the infrastructure rebuild.

**4.2.2 Project Rationale**

- Cause robust strategic decision-making ahead of infrastructure reinstatement
- Enable an economic well-targeted Stronger Christchurch Infrastructure Rebuild

**4.2.3 Project Sponsors**

- Strategy Manager and Strategy Group Convener
- Alliance Manager

**4.2.4 Project Outcomes**

- Rebuild Team Horizontal Strategy adopted by CERA/CCC: short term; medium term; long term strategies
- Delivery Team Execution Plan adopted by ALT and implemented by the Rebuild Team

**4.2.5 Project Deliverables**

- Draft Strategy and Delivery Plan- staged
- Final Strategy
- Final Delivery Plan

**4.2.6 Project Stages**

Stage 1 – Partial Strategy

- After optioneering workshops geographic areas unaffected by land use options and potential resilience and technology decisions are confirmed available for rebuild activity. Date mid-September



Stage 2 – Draft Strategy

- Land use, resilience and technology decisions needing resolution to enable the strategy to be completed are evaluated and referred to the relevant decision making fora. Date 18 November 2011

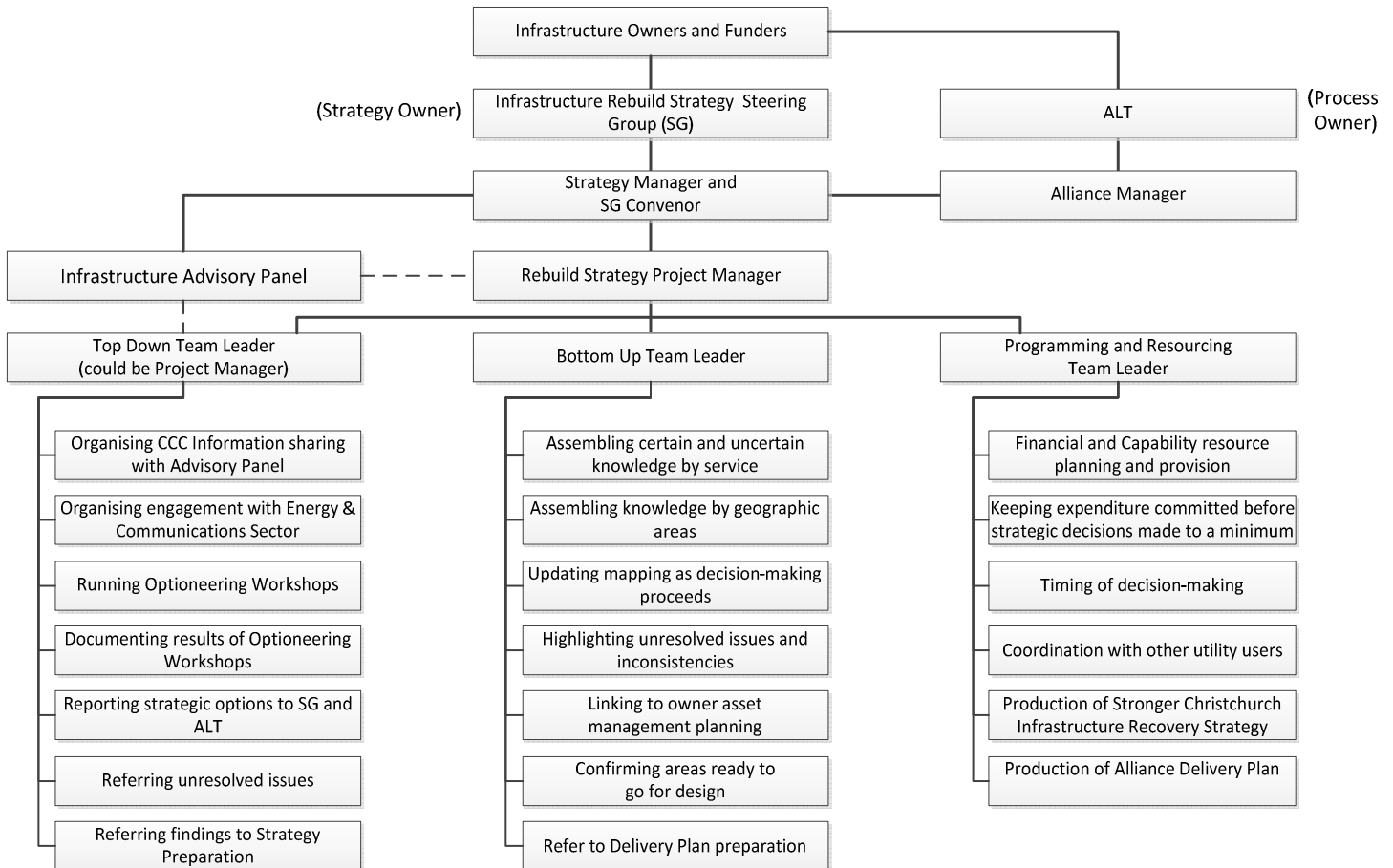
Stage 3 – Adopted Strategy

- Some decisions affecting the Infrastructure Rebuild Strategy may be referred to a consultation process e.g. as part of a new Christchurch Development Strategy – likely to be February 2012. These decisions form the basis of the Adopted Strategy. Date 24 February 2012

**4.2.7 Project Governance**

**Christchurch Horizontal Infrastructure Rebuild Strategy**

22 July 2011



**Strategy Owner: Infrastructure Rebuild Strategy Steering Group (SG)**

Members: CERA - Bruce Mclean or nominee  
CCC - Jane Parfitt or Mike Theelen  
NZTA- Jim Harland or nominee  
SCIRT - Wayne Donnelly (chair)

**Role:**

- Linkage to other planning processes at ownership level
- Selection of preferred options for strategic treatment of each service
- Facilitate provision of resources from constituent groups
- Adoption of strategic plans
- Identifying geographic areas available for construction to proceed.

**Strategic Manager and Convener: Wayne Donnelly**

**Role:**

- Chair of SG
- Manager of Strategy Process
- Selection and appointment of Independent Advisory Panel ("IAP")
- Facilitating IAP input into recommendations
- Securing resources for Project from Alliance Manager
- Resolution of competing options/differing objectives
- Effective Delivery of Strategic Plan

**Rebuild Strategy Project Manager: Peter Doolin**

**Role:**

- Project management of development of Strategic Plan
- Management of delivery process of Strategic Plan
- Appointment and resourcing of team leaders
- Managing delivery by team leaders of their objectives
- Liaising with owners/ funders and other stakeholders
- Reports to Strategy Manager and Alliance Manager

**4.2.8 Project Methodology**

**Top Down Process:**

This process will account for the future by presenting strategic questions for infrastructure services to be resolved at optioneering workshops with the owners and government. The top down process tests current assumptions/positions.

An independent Advisory Panel ("IAP") will be formed and consider strategic issues for:

- Water
- Stormwater
- Rooding
- Wastewater
- Other Utilities
- Information-sharing workshops held between Council Managers and IAP
- High level options prepared for services, especially for wastewater treatment and networks
- Optioneering workshops with IAP, Council and CERA
- Joint conclusions reached on direction or on further work to be done
- Conclusions and/or differences referred to Strategy Steering Group.

**Bottom Up Process:**

The objective of this process is to establish the infrastructure rebuild programme by progressively linking urban form decisions, resilience and technology decisions and infrastructure reinstatement requirements.

- Resolving questions/issues, service by service, integrating urban form, resilience and technology considerations
- Achieving increasing numbers of geographic areas where all services treatments are decided and design and construction packages can proceed.

The process underway within the Alliance is achieving the following:

- Identifying current work programme of IRMO which will transition to the Alliance.
- Identifying the next schedule of projects to be undertaken by the Alliance.

The strategic input into that process will be to provide input to the development of an assessment and decision making framework that assesses potential projects to determine if there are any projects that should be deferred or redesigned until the outcome of the strategic planning process is known. This should militate against the risk of undertaking significant projects that would be altered by the adoption of a different strategy.

**4.3 Advisory Panel**

A central part of the process of review is the role of the advisory panel, described as follows:

<b>Infrastructure Advisory Panel: Draft Deliverables; Timeframes</b>		
<b>Stages and Task</b>	<b>Estimated Completion Date</b>	<b>Deliverables</b>
Stage One : <ul style="list-style-type: none"> <li>Workshop One Information and Planning</li> </ul>	12 August 2011	Introductions, Background Information; Project Planning
Stage Two: Issues and Opportunities <ul style="list-style-type: none"> <li>Development of high level thinking on Issues &amp; Opportunities Paper per work stream</li> <li><b>Issues and Opportunities workshop in Christchurch</b></li> <li>Issues and Opportunities Paper drafted</li> </ul>	26 August 2011  <b>9 September 2011</b>	Workshop scoping and high level 'thinking' papers released to stakeholders Issues and Opportunities Workshop held (agenda, background materials developed in draft etc and issued) Progress report to SG (PJD to action) Progress report to ALT with Sept meeting papers complete by 9 September for meeting <b>14 September</b> (PJD to action)
IAP progress meeting – Thursday 1 <sup>st</sup> September – Auckland/VC		
Stage Three: Optioneering <ul style="list-style-type: none"> <li>Issues &amp; Opportunities Paper issued (incl Exec Summary)</li> <li>Preparation for Optioneering Workshop</li> <li>Presentation to SG</li> <li><b>Optioneering Workshop (#1) in Christchurch</b></li> </ul>	By 16 September 2011  <b>20 September 2011</b> <b>22 September 2011</b>	<b>Issues and Opportunities Paper</b> Options Workshops planned and held (agendas, background materials, option evaluation criteria developed in draft etc and issued) PJD to action
IAP progress meeting – Wednesday 21 <sup>st</sup> September – Auckland/VC		
Stage Four: Preferred Options Selection	By 23 September 2011	Workshop issues /opportunities / options identified going forward Option evaluation methodology agreed
Stage Five: <ul style="list-style-type: none"> <li>Post Workshop(s) review and identification of options</li> <li>referral to Strategy Steering Group</li> </ul>	By 30 September 2011	<b>Options Report</b> Report to SG as to outcomes of Stages Two to Four with issues identified and options for review Progress report to ALT with Oct meeting papers complete by 7 October for meeting <b>12 October</b> (PJD to action)
IAP progress meeting – Wednesday 11 <sup>th</sup> October – Auckland/VC		

Stage Six: <ul style="list-style-type: none"> <li>• Referral of preferred options back to stakeholders for discussion</li> <li>• Feedback received</li> <li>• <b>Workshop recommendations for SG in Christchurch</b></li> </ul>	By 7 October 2011  <b>19 October 2011</b>	<b>Options Report updated</b> Report and workshop with stakeholders as to updated issues/options
IAP progress meeting – Wednesday 24 <sup>th</sup> October – Auckland/VC		
Stage Seven: Finalisation with Steering Group/ALT of issues papers and identification of options <b>Workshop in Christchurch</b>	<b>26 October 2011</b>	<b>IAP Final Report</b> Issues and opportunities papers with preferred options identified. Progress report to ALT with Nov meeting papers complete by 4 November for meeting <b>9 November</b> (PJD to action)
Stage Eight: Preparation of Draft Strategic Plan	By 14 November 2011	Ongoing support as required

## **5.0 PROGRESS REVIEW**

The Strategic Review will be one-off function of the consulting group, reporting to the Strategy Steering Group, representing the program sponsors. Progress review will therefore be limited to the regular reports to convened Strategy Steering Group meetings, with actions arising.

## **6.0 PERFORMANCE MONITORING AND EVALUATION**

Because of the nature of the consultancy and the limited time frame of the work, there will be no formal performance monitoring or evaluation.

## **7.0 MANAGEMENT PLAN CONTROL**

There is no management control plan.

## **8.0 RECORDS AND REPORTING**

Records and reporting of this Strategic Review will be by conventional consultancy engagement process of progress and final reporting to the governing Strategy Steering Group.

## **9.0 ROLES AND RESPONSIBILITIES**

Roles and responsibilities for the parties to the Strategic Review are as described above.