

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.

SCIRT Geographic Information System (GIS) Viewer services

Story: SCIRT Geographic Information System (GIS) Viewer

Theme: Finance and Business Systems

This document contains a list of the SCIRT GIS services, along with a brief description of what the groupings of layers were and why they were needed.

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



This work is licensed under a [Creative Commons Attribution 3.0 New Zealand License](https://creativecommons.org/licenses/by/3.0/nz/).

The authors, and Stronger Christchurch Infrastructure Rebuild Team (SCIRT) have taken all reasonable care to ensure the accuracy of the information supplied in this legacy document. However, neither the authors nor SCIRT, warrant that the information contained in this legacy document will be complete or free of errors or inaccuracies. By using this legacy document you accept all liability arising from your use of it. Neither the authors nor SCIRT, will be liable for any loss or damage suffered by any person arising from the use of this legacy document, however caused.

WebmapsName	What	Why
Flood Extents	Estimated Flood Extents in christchurch May 1 2014	Made available for the design teams when thinking about solutions
Geotech	Highly confidential geotech data from the Port Hills detailing damage including location of cracks and land movement	SCIRT Geotech engineers needed to have the full picture and access to this information, a separate access agreement with named individuals was signed
Port Hills Geotechnical Group	Porthills geotech data that was publically available	Some of the highly confidential data was made public, it meant that it could be added to all configuration files
Design Network	A single design layer for each network detailing what the proposed action for each pipe would be	Design decisions for assets can be sourced from either 12d or the asset assessment spreadsheet where the design decision is updated from several asset assessment sources, these layers provide a single source for that information.
Constructed Services	Layers showing what assets have been as-built and sent back to CCC for integration marked as 'Complete' and what the current assets being worked on marked as 'pending'	Create a view of all the assets installed, repaired and decommissioned as part of the SCIRT programme, useful for seeing progress and understanding what was done
Level of Service	Series of layers reusing existing data and symbolising it differently and new datasets identified and required for level of service design approach	Project scoping, assesment and design teams needed a separate view of data related to network Level of Service
SCIRT FWP	SCIRT Forward Works Programme layers showing road intersections and labels project timing and the stage of works happening on a particular road	Construction teams would use these layers to help with requirements that they needed for project traffic management
Traffic Impacts	Layers showing the impact of SCIRT project work on existing roads. This data is based on data updates from construction teams if a road is closed, one way, partially open	Work in the Central City was carried out in a strict timeframe with 40 crews working across 100 projects (not sure of the numbers) these layers would allow teams to visually see and identify as early as possible where there could be clashes, these layers were also used by CTOC and Forward Works Viewer
Wastewater Local Pressure Systems	Layers showing information relating to where wastewater pressure tanks have been installed	The communications team needed to see the wastewater pressure data in a particular way
Traffic Exclusion	Layer showing where areas could not have SCIRT works underway at particular times, this was an editable layer that could be updated by anyone who was allowed to provide and see this information	Highlight to construction teams areas that had to remain open during particular times and events e.g. around shopping areas at christmas, santa parade, le race cycle route
Ratings	Council rating unit data as points and polygons	The communications team regularly needed to contact residents, the Council ratings layers were provided under a strict agreement that they would only be used by the communications team for puposes of getting correct mailing/forwarding addresses for work notices.
Photos	Geotagged site photos and asset photos	Design teams used GPS cameras to take site photos which could be viewed and searched on SCIRT webmap
Condition Assessment	Collection of layers representing the condition assesment data from many different sources including CCTV assesments, PDAT, maintenance repairs, operational network issues, liquefaction, flood complaints, slips, road damage	Design team needed a lot of information showing the condition of assets in the project areas
Services	Existing underground services data for Wastewater, StormWater and watersupply. This data was downlaoded and updated weekly from Christchurch City Coucil	Everyone needed to be able to see where the existing underground networks were, these layers were updated weekly as they were continually being updated with newly installed, repaired and decommissioned assets
Chorus and Utilities	Underground telecommunications networks	Made available for design purposes only to get understanding of all underground utlilities. Data suppliers do not see other data suppliers networks.

WebmapsName	What	Why
Enable and Utilities	Underground telecommunications networks	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Liquigas and Utilities	LPG transport pipelines	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Mobil and Utilities	Above and below fuel transport pipelines	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Orion and Utilities	Above and below ground power networks	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Rockgas and Utilities	Underground pipelines	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Transpower and Utilities	Underground pipelines	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Vodafone and Utilities	Underground telecommunications networks	Made available for design purposes only to get understanding of all underground utilities. Data suppliers do not see other data suppliers networks.
Traffic Signal Network	Traffic signal network data based on a one off supply of data from a CAD file	More underground utilities that you might hit especially at intersections
CBD Proposals from CAD	Water supply design proposals from CAD	Water supply was designed using AutoCAD, this layer was provided for the team in the central city to figure out what needed to be done
LLUR (Listed Land Use Register)	Layers utilised by Environment Canterbury's Listed Land Use Register (LLUR) which records known information about land where activities potentially involving the use of hazardous materials may have taken place in at some point in the past. Not for public use, access or distribution.	Designers and estimators were interested in these layers to be able to see the extent of possible contamination and decide if a better location and how much the mitigation measure might cost
Planning	Collection of layers relating to environment and planning, green field sites, fish spawning sites, de watering contamination risk areas, buildings pre 1900	Environment and quality team requested these layers to be provided for the design and construction teams to take into account
SCIRT Projects	Series of layers showing the extent of SCIRT project areas and show in different ways, by current phase, by construction team	Available for everyone to see where SCIRT projects were being carried out