Agenda

1. Smart Christchurch Strategy

2. Sentinel – Earthquake Monitoring Network

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The Council's Vision

Christchurch: a city of opportunity for all…open to new ideas, new people and new ways of doing things - a city where anything is possible.

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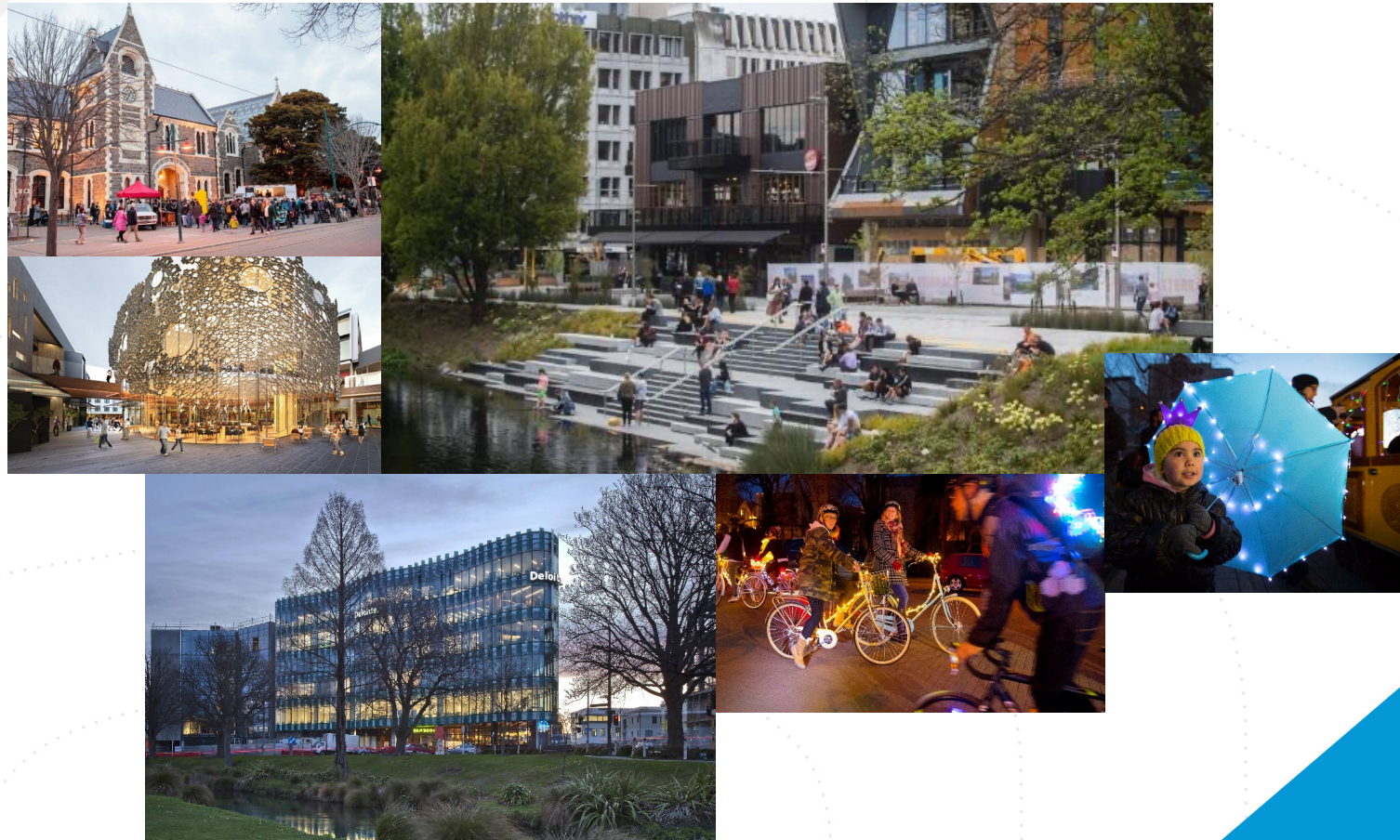
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Smart Christchurch Programme

Purpose:

- To trial technology and approaches that accelerate Christchurch becoming a city of opportunity for all – a city where anything is possible

Vision:

- To promote Christchurch as an exemplar open and connected city, showcasing solutions that make life better and are replicated by others

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Smart Christchurch Programme

- People-centered

- City-wide collaboration

- Co-design

- Replication

Smart Christchurch Programme

- How do we choose new initiatives?

- How do we triage?

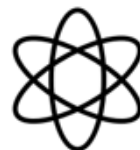- What is the initiative lifecycle?

Vision & principles

Open data, open platform, open city

Aggregating and visualising real-time data

Leveraging the collective genius around us

Removing barriers to access

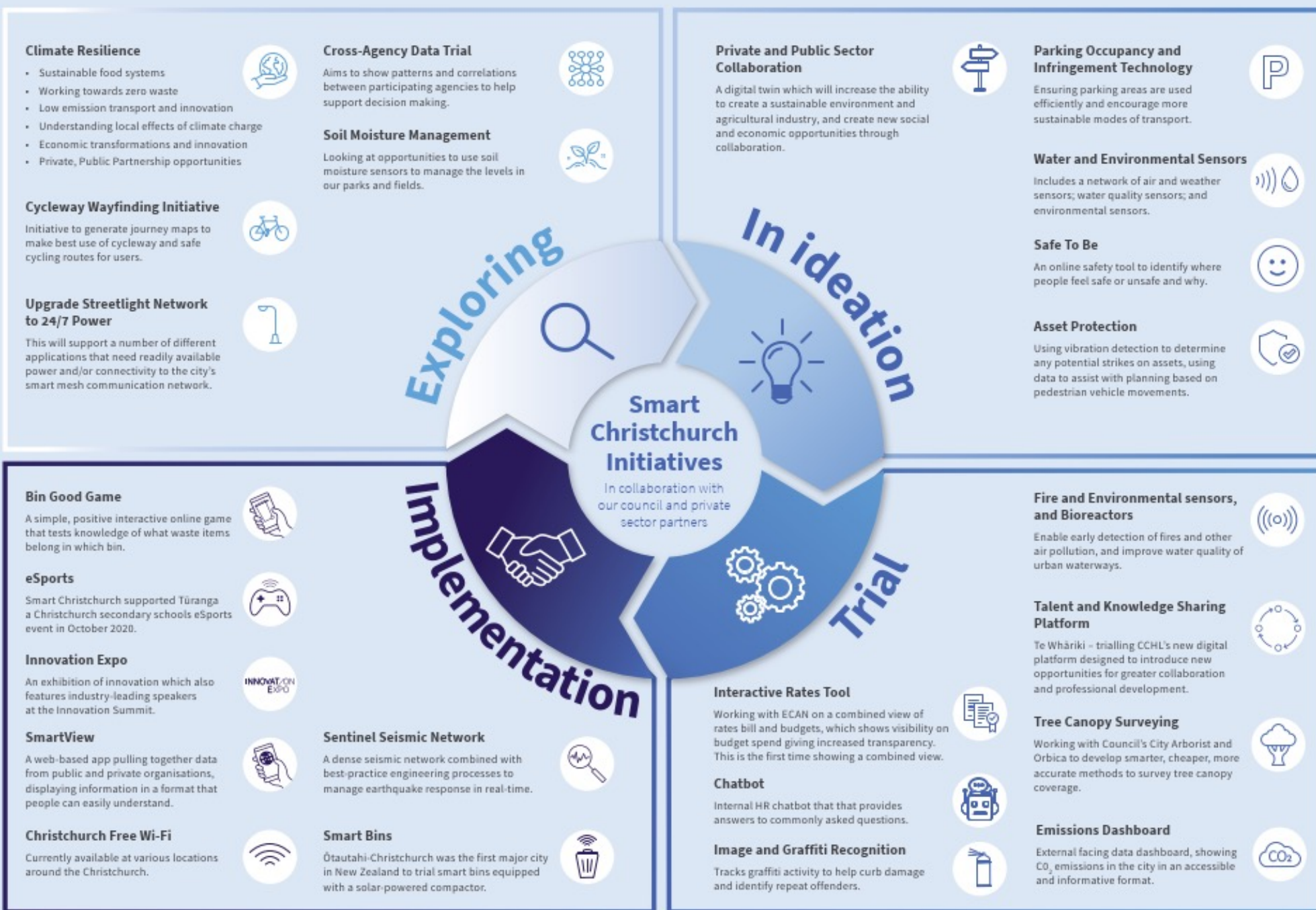Inspiring fresh thinking

Community outcomes

Resilient communities

Liveable city

Healthy environment

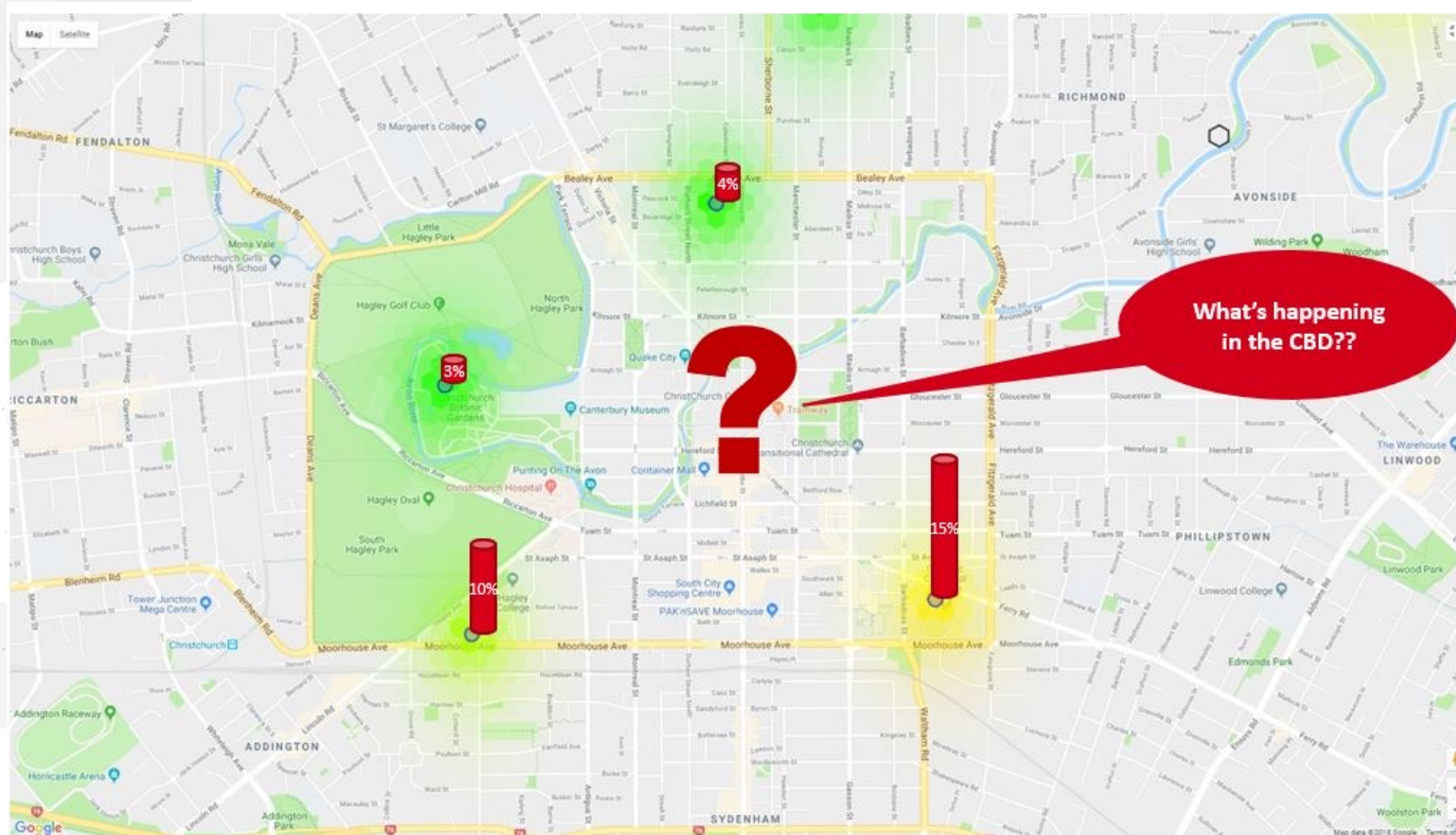Prosperous economy

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Smart Christchurch Initiatives
In collaboration with our council and private sector partners

Exploring

Climate Resilience
- Sustainable food systems
- Working towards zero waste
- Low emission transport and innovation
- Understanding local effects of climate change
- Economic transformations and innovation
- Private, Public Partnership opportunities

Cross-Agency Data Trial
Aims to show patterns and correlations between participating agencies to help support decision making.

Soil Moisture Management
Looking at opportunities to use soil moisture sensors to manage the levels in our parks and fields.

Cycleway Wayfinding Initiative
Initiative to generate journey maps to make best use of cycleway and safe cycling routes for users.

Upgrade Streetlight Network to 24/7 Power
This will support a number of different applications that need readily available power and/or connectivity to the city's smart mesh communication network.

In ideation

Private and Public Sector Collaboration
A digital twin which will increase the ability to create a sustainable environment and agricultural industry, and create new social and economic opportunities through collaboration.

Parking Occupancy and Infringement Technology
Ensuring parking areas are used efficiently and encourage more sustainable modes of transport.

Water and Environmental Sensors
Includes a network of air and weather sensors; water quality sensors; and environmental sensors.

Safe To Be
An online safety tool to identify where people feel safe or unsafe and why.

Asset Protection
Using vibration detection to determine any potential strikes on assets, using data to assist with planning based on pedestrian vehicle movements.

Implementation

Bin Good Game
A simple, positive interactive online game that tests knowledge of what waste items belong in which bin.

eSports
Smart Christchurch supported Tūranga a Christchurch secondary schools eSports event in October 2020.

Innovation Expo
An exhibition of innovation which also features industry-leading speakers at the Innovation Summit.

SmartView
A web-based app pulling together data from public and private organisations, displaying information in a format that people can easily understand.

Christchurch Free Wi-Fi
Currently available at various locations around the Christchurch.

Sentinel Seismic Network
A dense seismic network combined with best-practice engineering processes to manage earthquake response in real-time.

Smart Bins
Ōtautahi-Christchurch was the first major city in New Zealand to trial smart bins equipped with a solar-powered compactor.

Trial

Interactive Rates Tool
Working with ECAN on a combined view of rates bill and budgets, which shows visibility on budget spend giving increased transparency. This is the first time showing a combined view.

Chatbot
Internal HR chatbot that that provides answers to commonly asked questions.

Image and Graffiti Recognition
Tracks graffiti activity to help curb damage and identify repeat offenders.

Fire and Environmental sensors, and Bioreactors
Enable early detection of fires and other air pollution, and improve water quality of urban waterways.

Talent and Knowledge Sharing Platform
Te Whāriki – trialling CCHL's new digital platform designed to introduce new opportunities for greater collaboration and professional development.

Tree Canopy Surveying
Working with Council's City Arborist and Orbica to develop smarter, cheaper, more accurate methods to survey tree canopy coverage.

Emissions Dashboard
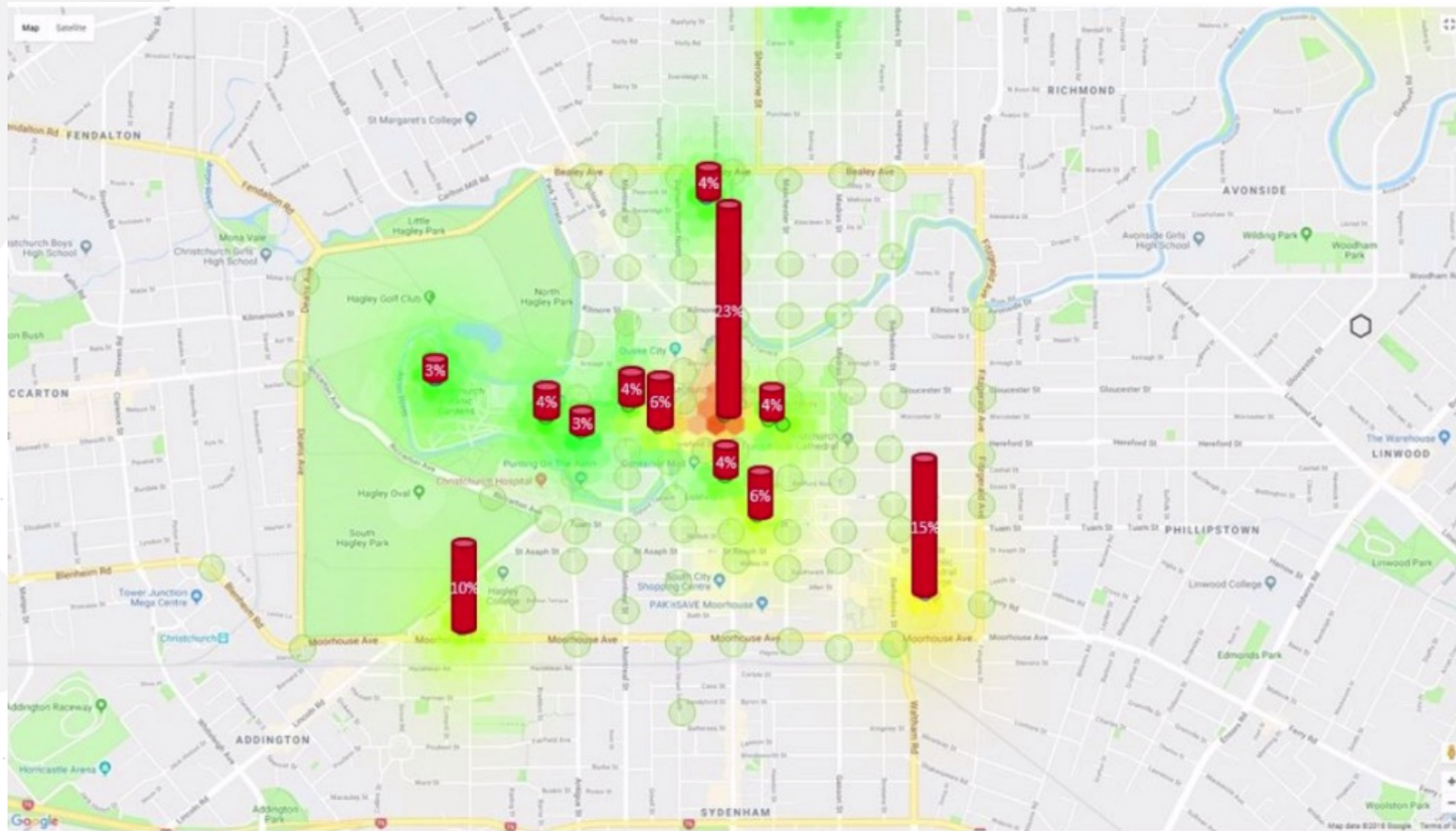External facing data dashboard, showing CO_2 emissions in the city in an accessible and informative format.

January 20 2018 M4.0 5 km SE of Christchurch, shaking relative to NZ Building Code Ultimate Limit State (ULS).

Proving the requirement

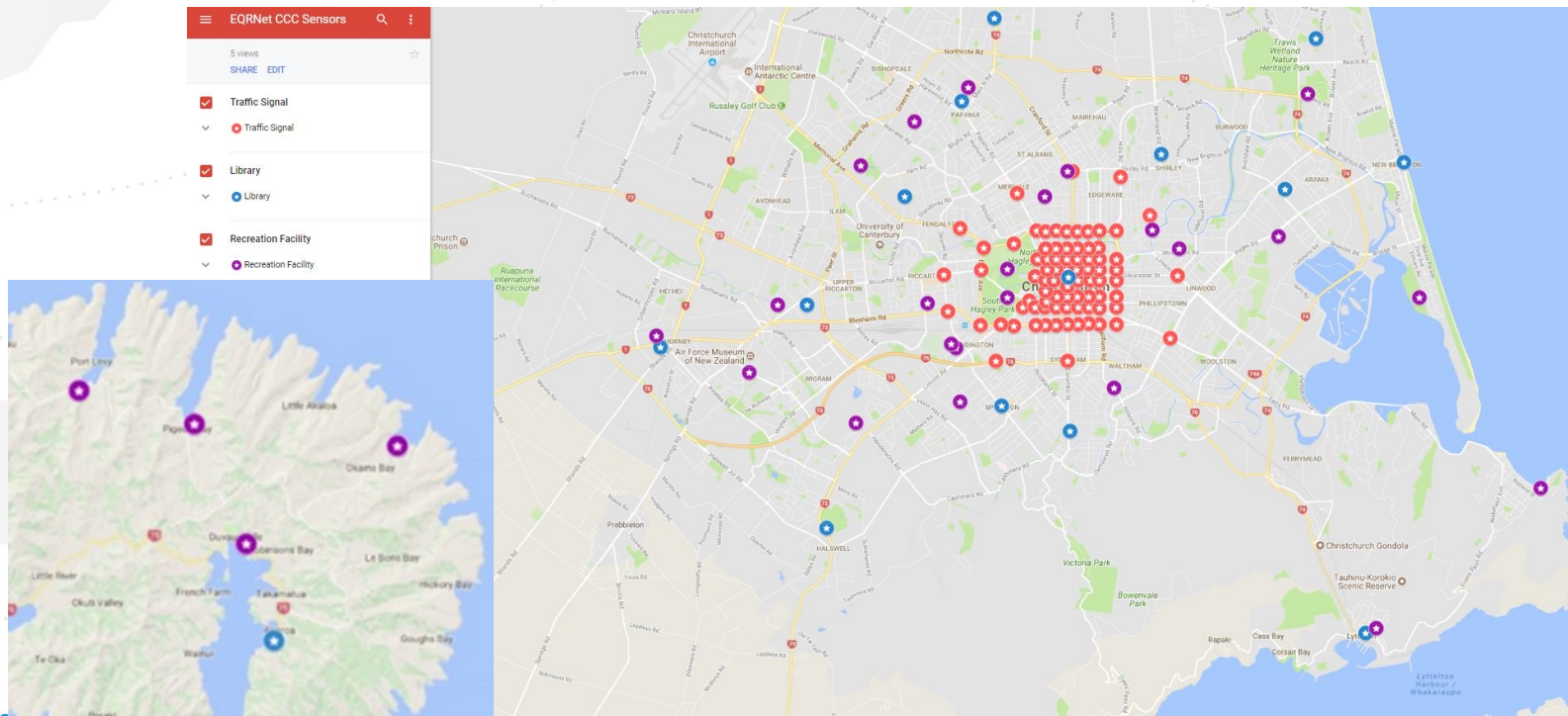January 20 2018 M4.0 5 km SE of Christchurch, shaking relative to NZ Building Code Ultimate Limit State (ULS).

The Solution
Sentinel: Seismic Resilience as a Service

- Smart Christchurch funded 150 earthquake monitoring sensors

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Libraries and pools and buildings

Traffic signals cabinets

Pumping stations

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Every quake is different – even similar sizes and locations
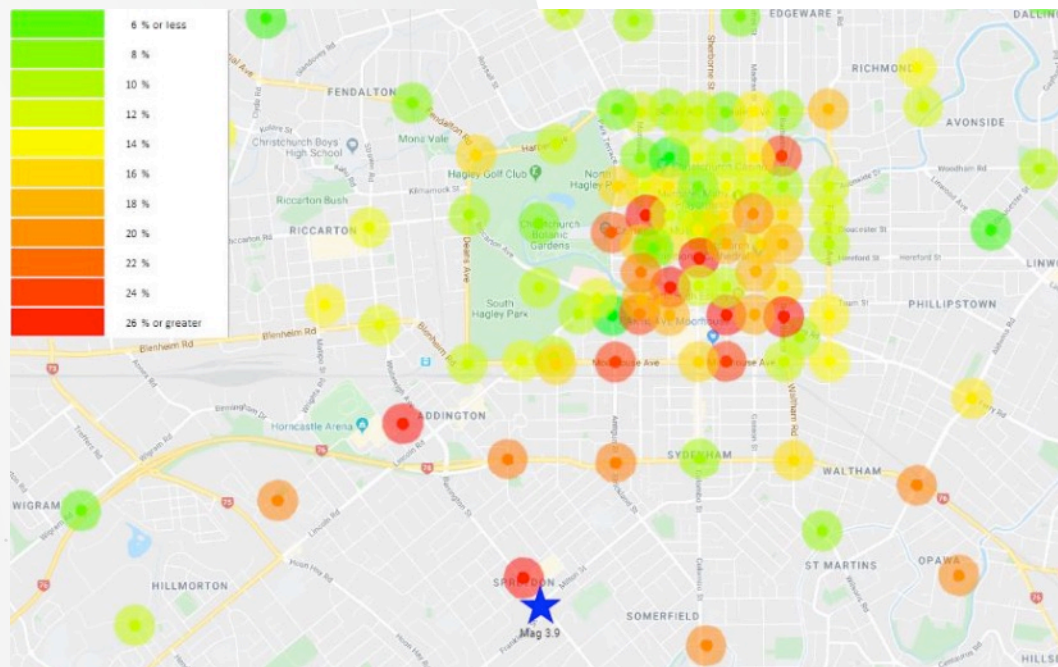
M3.9, 22 July 2019 – peak shaking relative to building capacity

M3.5, 20 July 2019 – peak shaking relative to building capacity
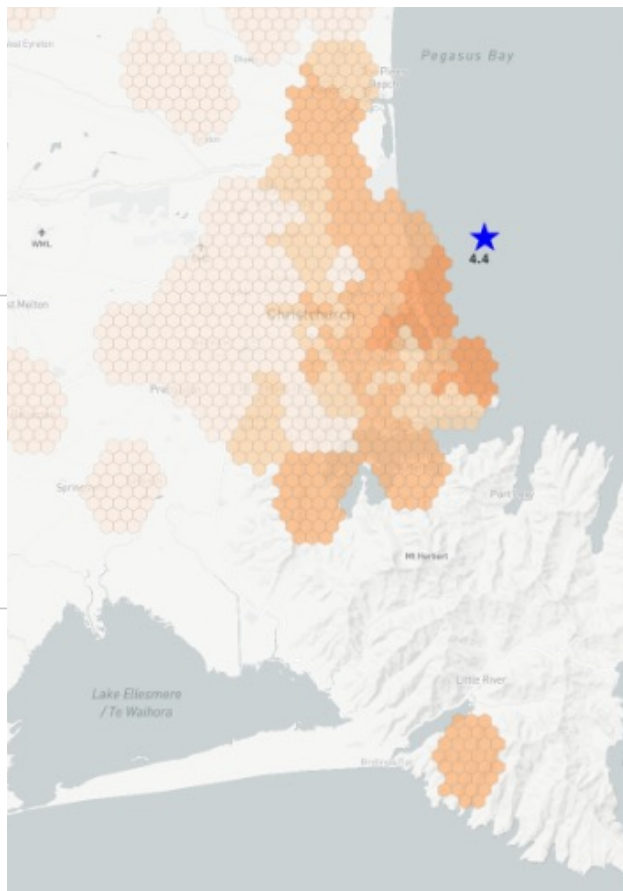
Outcome

- Business continuity.

- Civil defence can deploy targeted response.

- Residents and building owners can respond based on the information at hand.

- The solution is scalable to the whole of NZ.

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Lessons Learnt

- Using existing infrastructure to implement a dense network of sensors for earthquake monitoring.

- Funding the technology trial to enable adoption.

- Work with vendors with your requirements for the benefit of the community.

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SMART CHRISTCHURCH

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