

Kaikoura Earthquake Viewer

John Carter

GIS Specialist at Tonkin + Taylor

Seconded to the Earthquake Commission Resilience Team and Customer Care

22 August 2018



Exceptional thinking together

www.tonkintaylor.co.nz

Scene Setter - 3rd Largest EQ claims

Over 38k claims + \$550m (EQC payments as at end of July 2018)



EQC wanted to improve customer experience

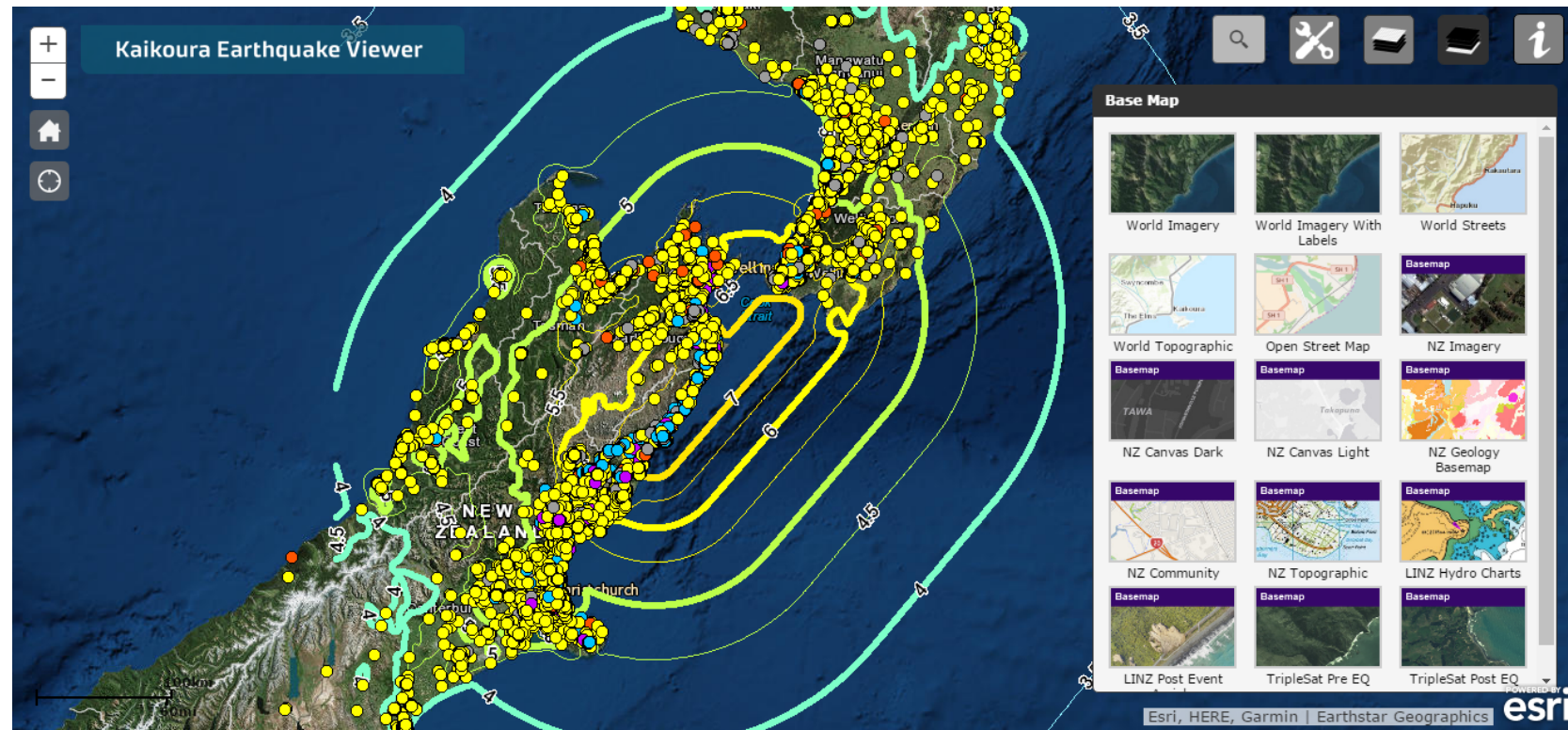
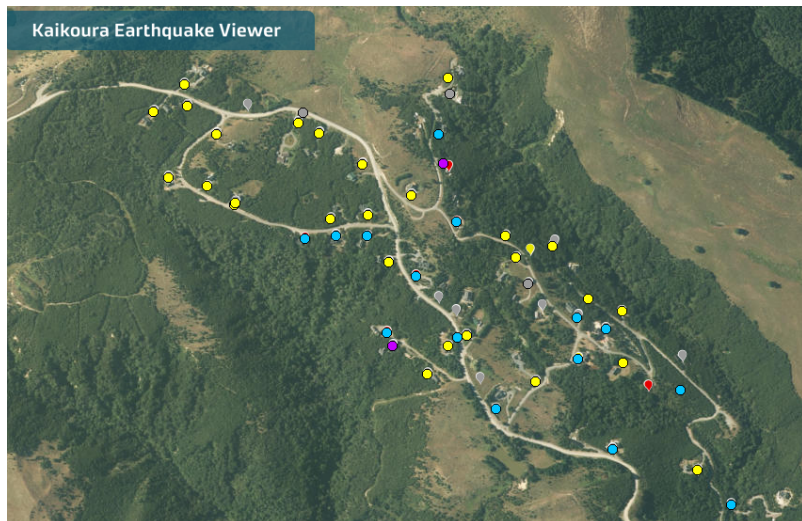
- Reduce delays for decisions
- Efficient planning
- Effective and timely communication

Private Insurer's managing customers' claims

GIS Solution – ESRI JavaScript API

The Kaikoura Earthquake Viewer

An interactive web map enabling EQC, Private insurance, response and recovery agencies, engineers and researcher users a tailored, secure view of insurer claims for our customers, alongside geospatial event data.

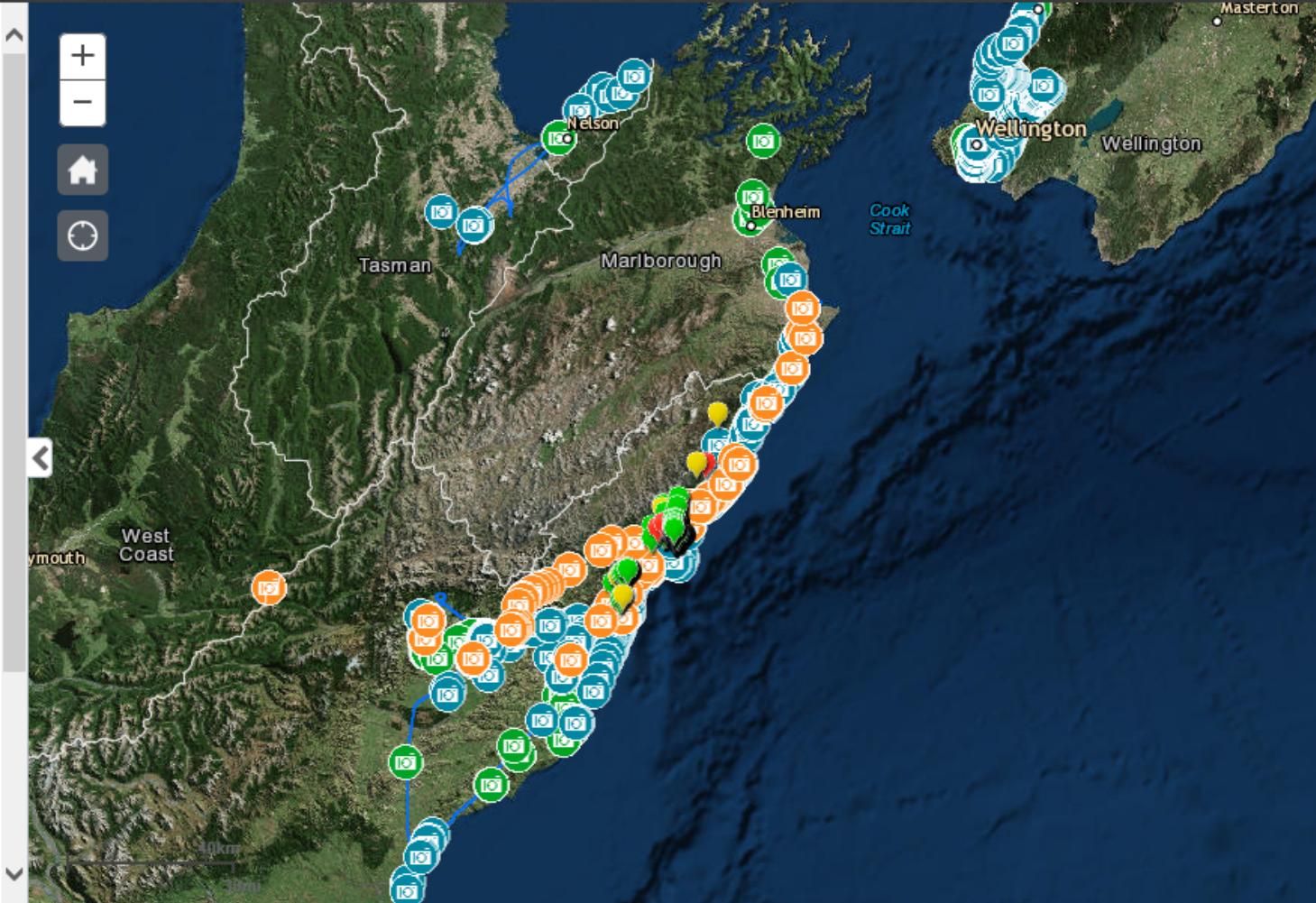


A Wealth of Data

projectorbit

Earthquake Response - Nov. 2016

- Legend
- Layers
 - Road Damage Locations
 - Additional Damage Locations
 - NZFS Rapid Disaster Assessment (RDA)
 - NZDF Aerial Oblique Photos
 - T+T Aerial Oblique Photos
 - T+T Ground Photos
 - T+T Helicopter Route
 - T+T Ground Route
 - GNS Landslide Dam Locations
 - GNS Observed Fault Ruptures
 - GNS Active Faults
 - Damage Areas
 - LINZ - Topographic
 - Durham University Models (v2)
 - USGS Shakemap Data
 - Thessaloniki Landslide Data



4163

Kaikoura EQ event
damage observation
photos



926GB

of timely, accurate,
useable data



150+

data suppliers



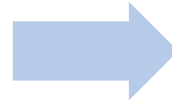
EQC's Event Data

1. EQC Claims Lodged by Customers
Kaikoura over 38K Canterbury over 450K
1. Land Damage Assessment – Rapid within 48hrs
2. Detailed Building and Land Assessments for Repair scoping
3. Loss Modelling results- number of residential claims, properties damage and financial losses Collaboration:
 - EQC and GNS – EQC funds Geonet and GNS landslide reconnaissance
 - Canterbury – LiDAR/NZDG
 - EQC Funded research data



Land Damage Observations

Near real-time
'raw' data
available via
ArcGIS Portal



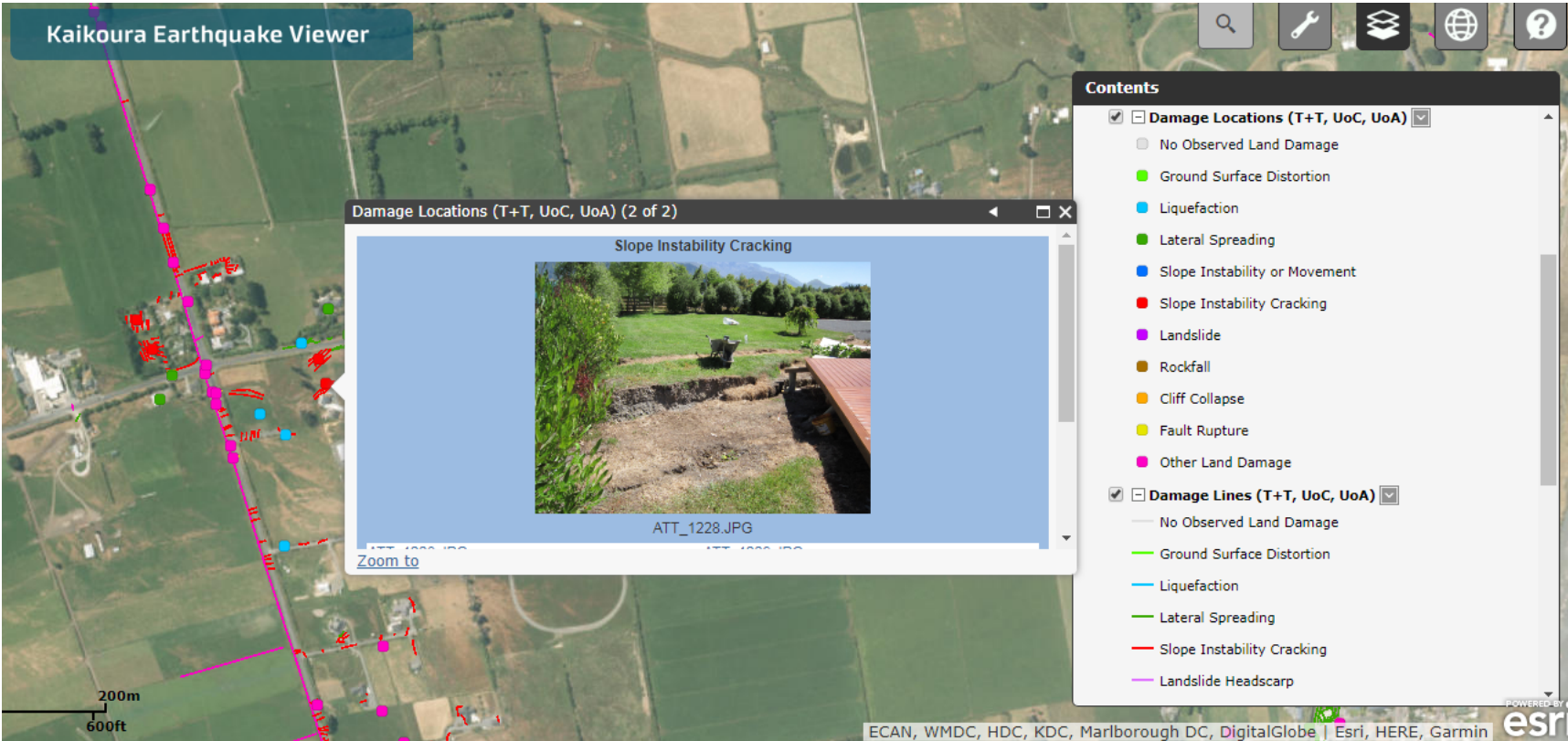
Data reviewed via ArcGIS Portal web
app by geotechnical specialists



Information
released to the
Kaikoura EQ
Viewer



ArcGIS Collector
used to capture
land damage
observations



Kaikoura Earthquake Viewer

Damage Locations (T+T, UoC, UoA) (2 of 2)

Slope Instability Cracking

ATT_1228.JPG

Zoom to

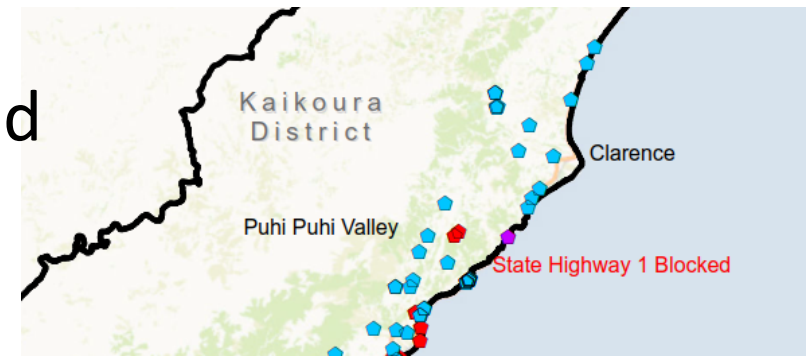
200m
600ft

ECAN, WMDC, HDC, KDC, Marlborough DC, DigitalGlobe | Esri, HERE, Garmin

Improved Customer Experience

Evolving land damage index map

- **Enabling efficient resource planning:** The right level of resourcing and expertise (i.e. structural engineers, geotechnical engineers and geologists) could be directed to the relevant areas, minimising the number of site visits required.
- **Prioritisation:** Geospatial intelligence updated nightly to give claims priority ranking from latest damage observations and indicator criteria. 339 were prioritised and urgently assessed in Hurunui, Kaikoura and Marlborough.
- **Proactive claim recognition and loss estimation:** Identification of areas where damage is likely to exist, and where claims had not yet been made.



Better understand customers' situations

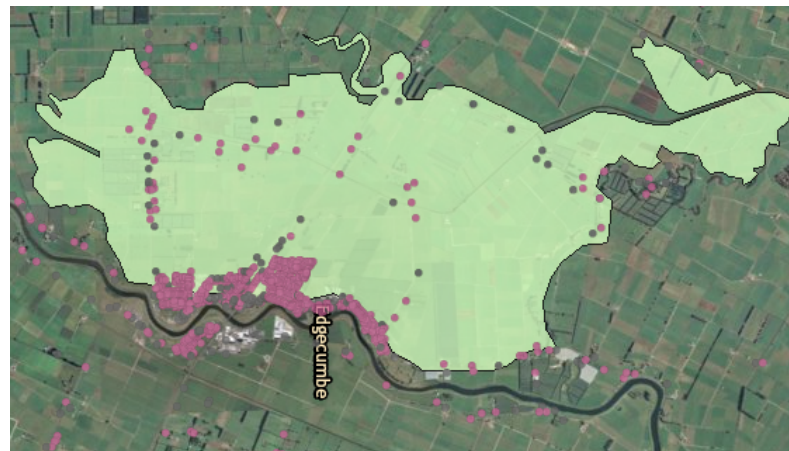


Improved communication with recovery agencies

Helping local govt predict increase in building consents.

Helping the National Recovery office quantifying with home heating and level of underinsurance.

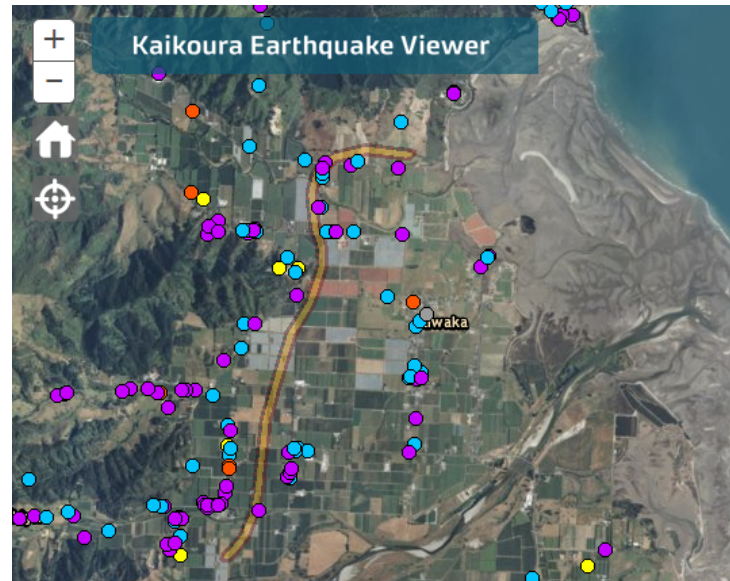
Tracking Edgcumbe flood clean up for Whakatane DC.



The Key, who uses it ?

**261 users
from over 20
organisations**

including local councils,
engineering firms,
private insurers and
EQC staff



Filter: Claim Location

Filter: Claim Location

View Edit

+ Add another expression

Display features in the layer that match

All

of the following expressions

TLA equal to HURUNUI DISTRICT Get Unique Values ✕

Chimney Damage equal to Y Get Unique Values ✕

APPLY FILTER CLOSE

1. EQC users view all claims
2. Private Insurers view their own claims
3. Restricted users view claim location and EQC layers
4. General users only view scientific and contextual data

This gave Private Insurers and EQC the same view, but only for relevant information.

Private Insurers and EQC reduced enquiries to EQC Subject Matter Experts and one view for planning




75,000
EQC claim locations

150+
data suppliers



982,000
visits to the KEV site

926GB
of timely, accurate,
useable data



THE KEV

(KAIKOURA EARTHQUAKE VIEWER)

261 users
from over 20
organisations

including local councils,
engineering firms,
private insurers and
EQC staff

4163
Kaikoura EQ event
damage observation
photos



5031
EQC non-Kaikoura
claims in the KEV
since the viewer was
deployed


3317
landslip, storm or flood
claims since the viewer
was deployed



Fast Facts



1000
claims identified by KEV as
unlikely to have damage -
reducing overall event cost
and time to settle



100%
of Edgecumbe
data shared with
local council

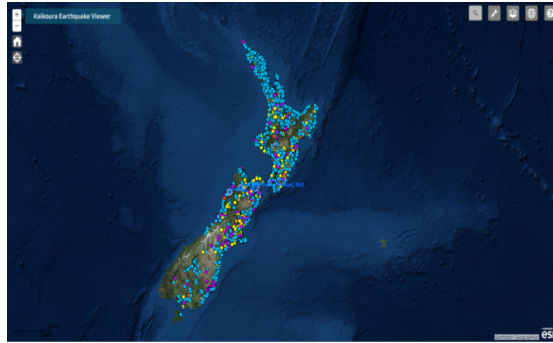
1209
geo technical land
assessments assisted
by KEV data



339
fast-tracked land
assessments based on
KEV data, reducing time
to settle which supports
a better customer
experience



EXPANDING EQC'S GEOSPATIAL CAPABILITY



Kaikoura Earthquake Viewer

Is an example of a prototype GIS system, which evolved to help the recovery of the people impacted by the Earthquake and storm events since.

EQC's Future Geospatial Capability

EQC's trusted geospatial information is available, accessible, and able to be shared and used support decisions to reduce the impact of natural hazards on people and property.

**Plug –The rise and collaboration of
the 4 Rs GIS Community**



Any Questions?

*Thank you to those who contributed to the recovery
T+T team who made the Viewer possible;
Sjoerd, Simon, Jovanna, Daniel, James, Ella, Callan, Mike,
Jack et al.
EQC Partners*

*Special mention
All those affected by the Kaikoura Earthquake*