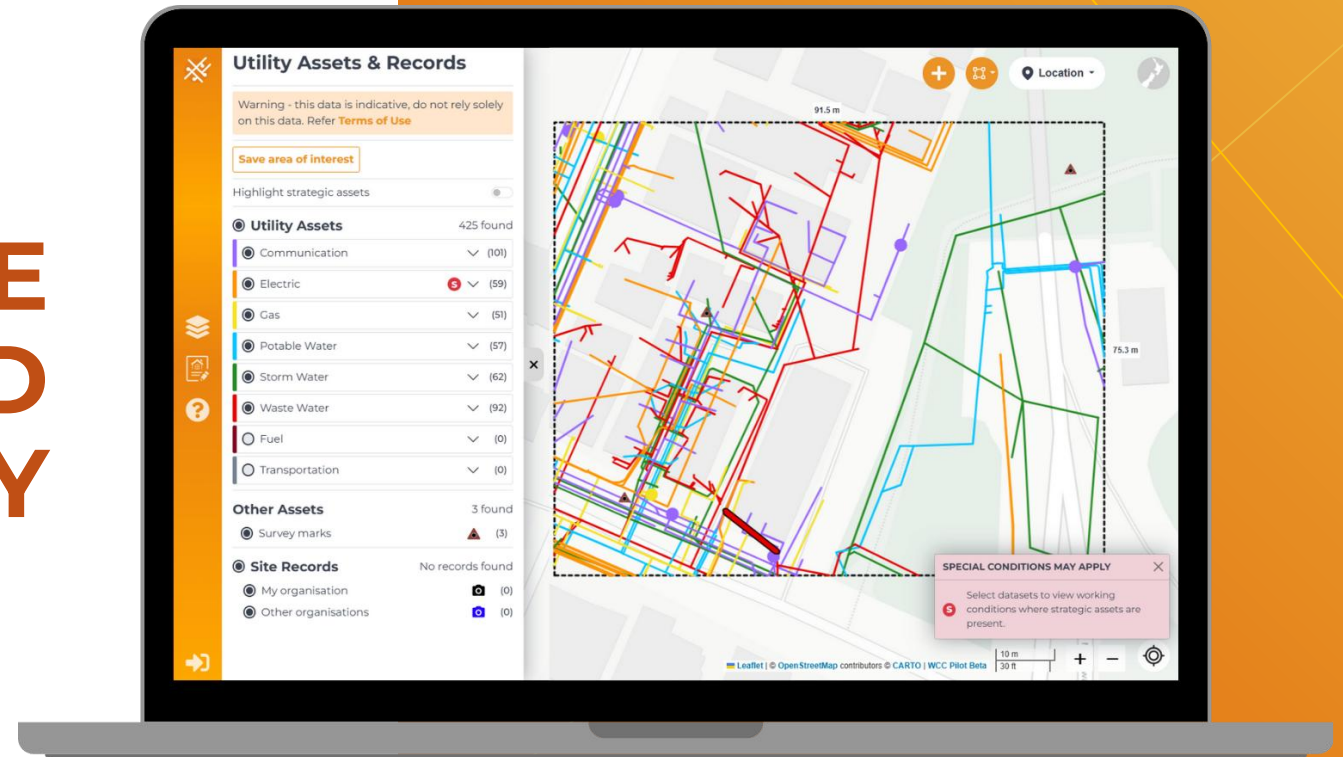


MAPPING THE UNDERGROUND CITY



WHY: THE BURNING PLATFORMS



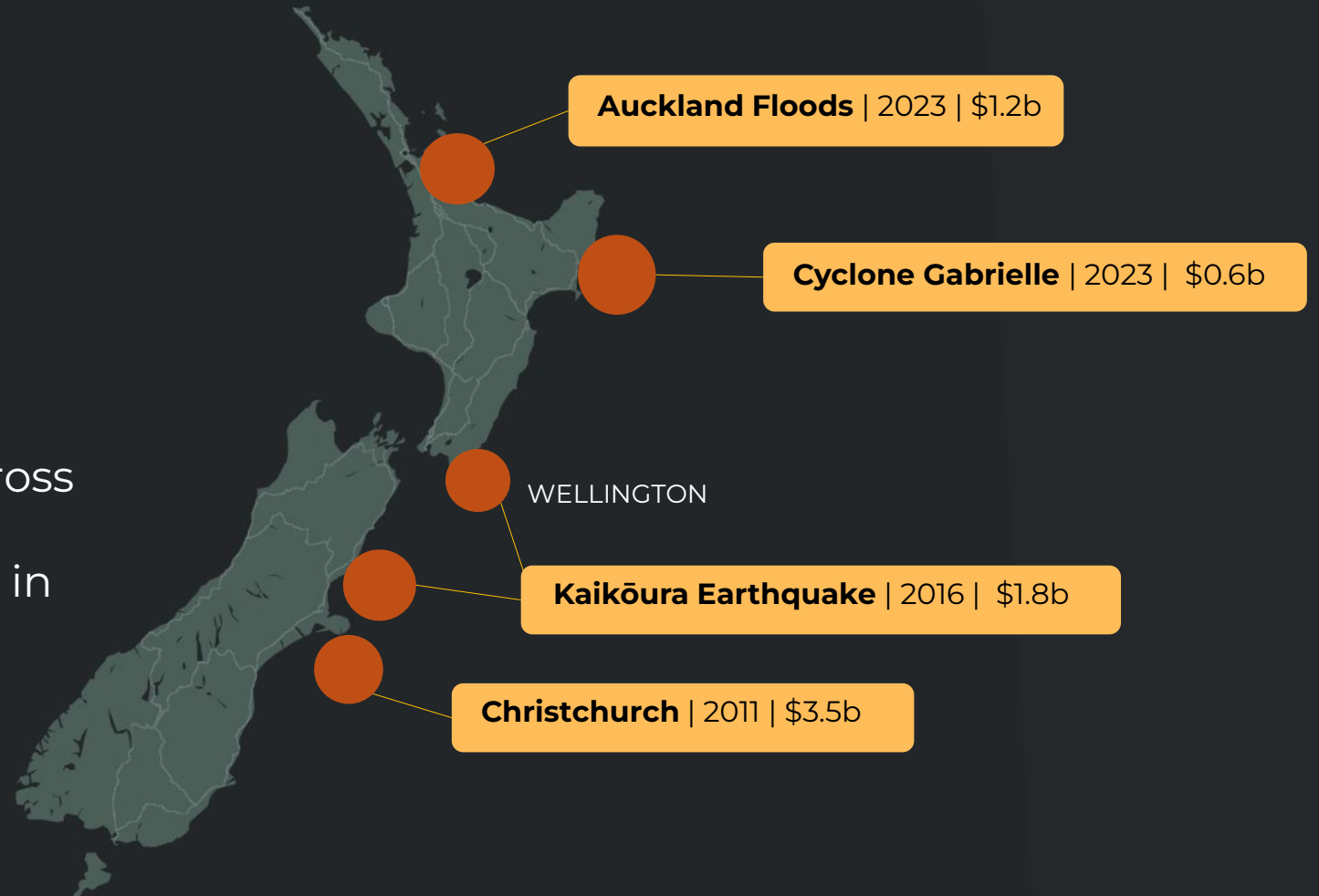
New Zealand is in an almost constant state of recovery



Major earthquake damage in two of our main centres



Huge infrastructure deficit across the country – with a huge programme of works planned in our capital city



WHY: THE COST OF DOING NOTHING

Poor records were estimated to result in

10,000 &
LOST WORK DAYS

3,500
ASSET STRIKES
OR NEAR MISSES



Costing the
infrastructure
sector in New
Zealand an
estimated



\$1B

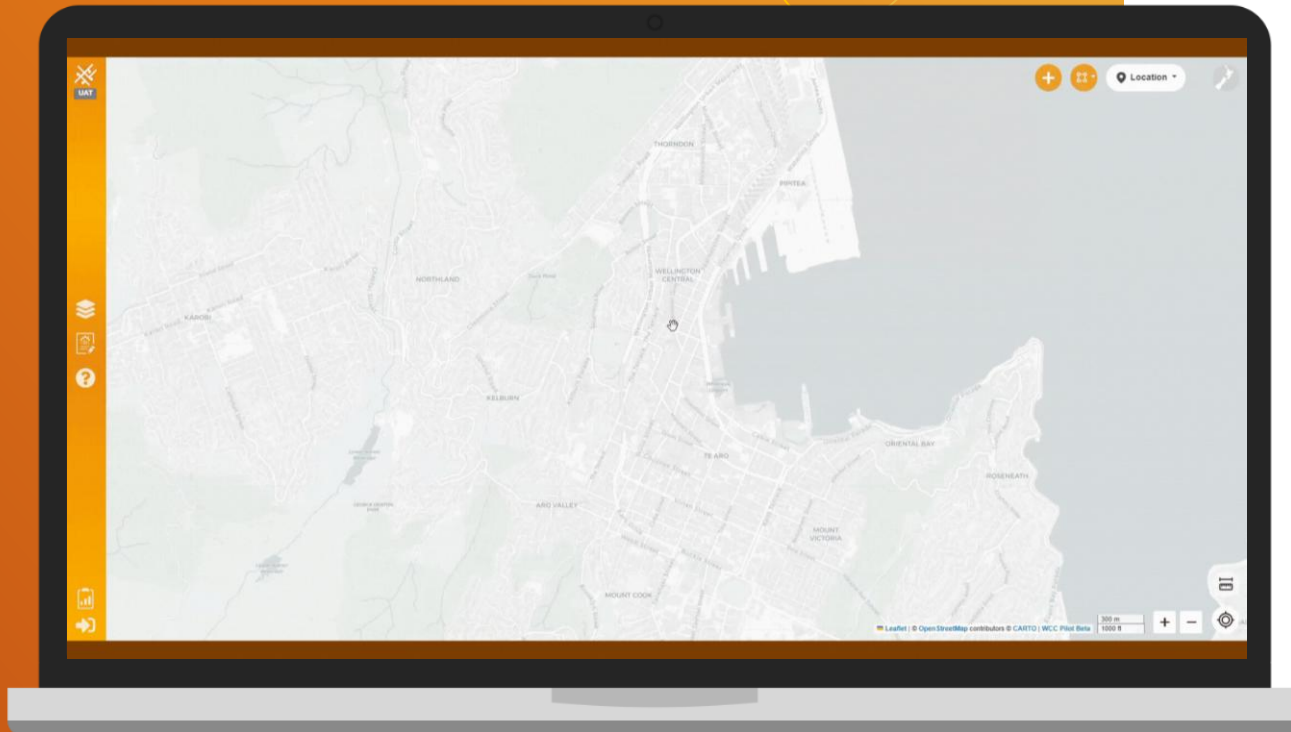
Annually (and over \$50M in
Wellington alone)



NZ UNDERGROUND ASSET REGISTER

An easily accessible map of New Zealand's underground **lifelines data** and taonga – available 24/7

- Provides a **single unified view** of underground **utility data** creating efficiencies and reducing rework
- Enables **continuous improvement** of underground asset records
- **Reduces risk of asset strike**, improving delays and disruption





Utility Assets & Records

Warning - this data is indicative, do not rely solely on this data. Refer **Terms of Use**

Actions Highlight strategic assets ☐

Utility Assets 624 found

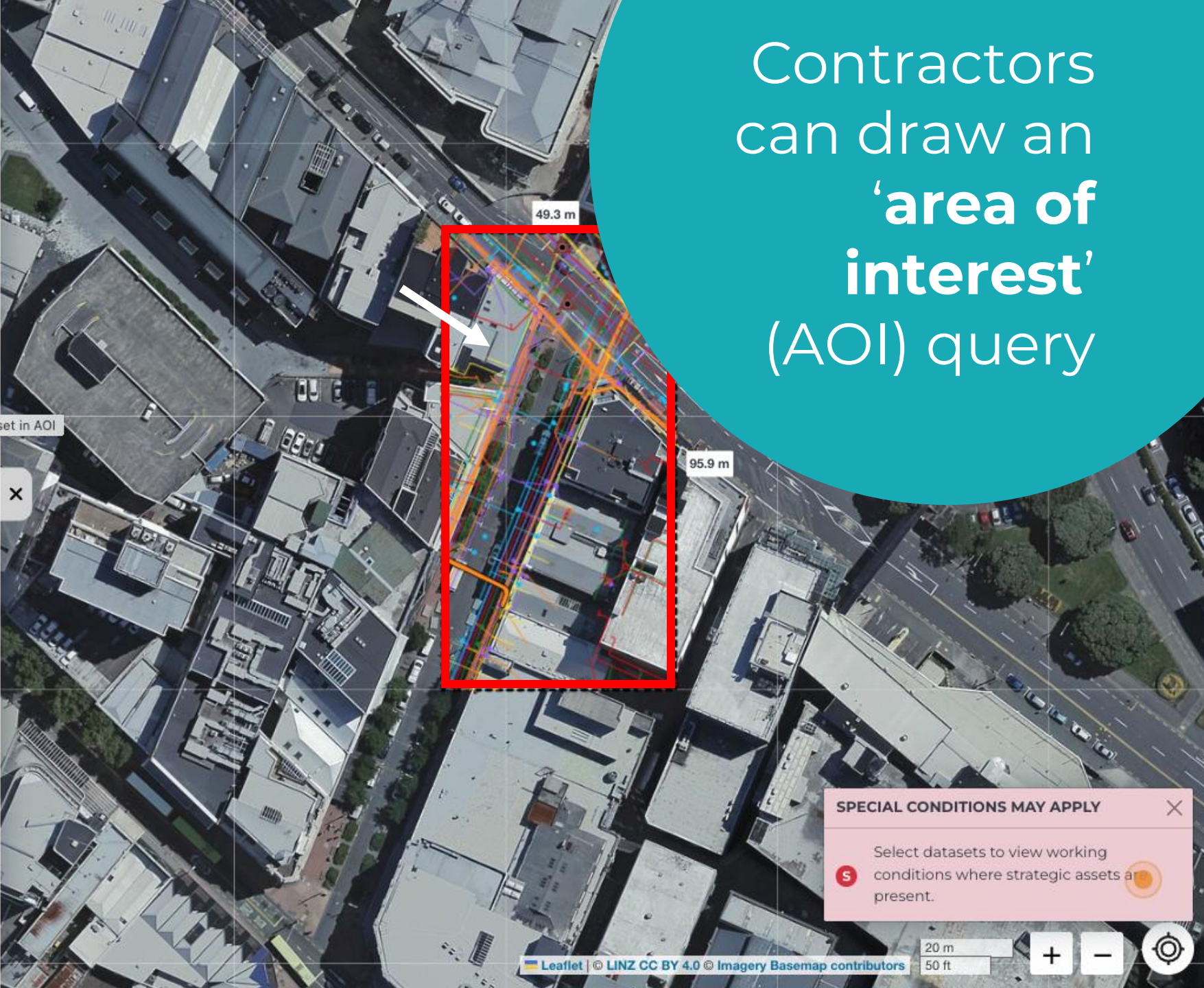
- ☒ Communication (114)
- ☒ Electric (222)
 - ☒ WE Cable Segment Low Voltage (206)
 - ☒ WE Supervisory Cable (16)
- ☒ Gas (71)
- ☒ Potable Water (77)
- ☒ Storm Water (75)
- ☒ Waste Water (63)
- ☐ Fuel (0)
- ☐ Transportation (0)

Other Assets 2 found

- ☒ Survey marks (2)

Site Records No records found

- ☐ My organisation (0)
- ☐ Other organisations (0)



Contractors can draw an 'area of interest' (AOI) query

SPECIAL CONDITIONS MAY APPLY

Select datasets to view working conditions where strategic assets are present.



>>
Layers

Records Selected (2)

Record 896

[View record](#)

Description

100mm gas service in this location is not a straight line as per the record. It has a 45 degree deviation in it.

Date

17/09/2025

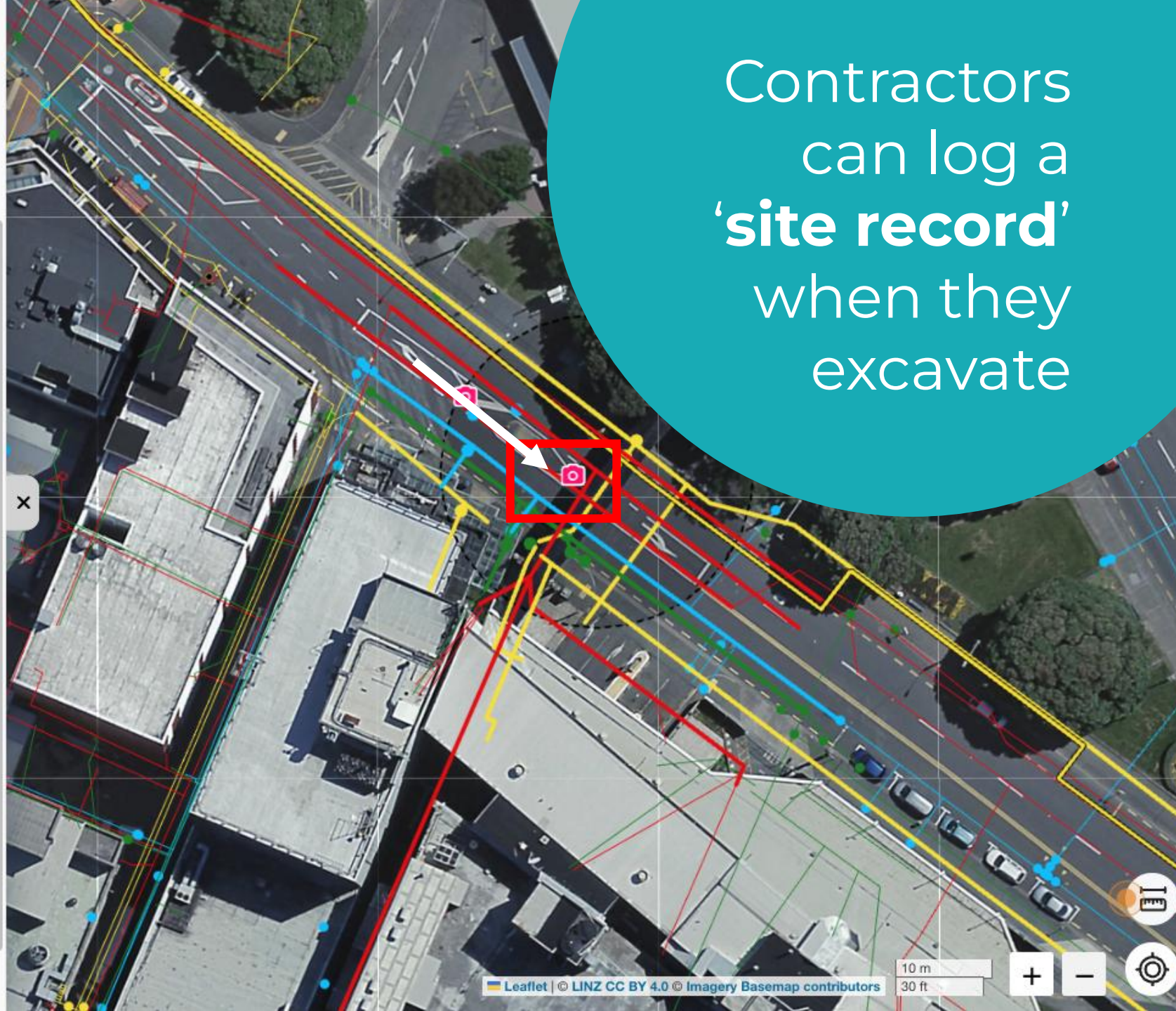
Contact details



Wrongly recorded details

100mm gas service in this location is not a straight line as per the record. It has a 45 degree deviation in it.

Image Gallery



Contractors
can log a
'**site record**'
when they
excavate



More countries have launched into space, than have a digital asset register of what's under their cities...

But we promise, it's not rocket science!



CHALLENGE 1: Delivering quickly where success wasn't guaranteed



It's a good idea – but market adoption isn't guaranteed

GEMINI PRINCIPLES APPLIED TO UAR

(Modelled on Digital Built Britain)



GETTING STARTED

A practical path forward for those wanting to build an ecosystem of shared knowledge, tools and data:

1

UNDERSTAND EXISTING OBLIGATIONS AND POWERS

Know what statutory or requiring powers you already hold to make something like this work. If you can compel data-sharing, we'd advise keeping that in your back pocket rather than leading with it.

2

ENGAGE & COLLABORATE ON A VOLUNTARY BASIS

Start with the collaborative route. In our experience, voluntary participation moves things along faster than a mandated one – people are more willing to get on board and share data and participate because the framework itself is collaborative.

3

DEFINE YOUR PRIORITIES – IT'S NOT ALL OR NOTHING

This is a multi-year journey, not a waterfall delivery. Rank your priorities and focus on just one at a time. Do you already have a system that could be used to share data? We usually start with whatever data is already available, focussing on what will bring the most value - and mop up the other utilities and datasets over the coming months.

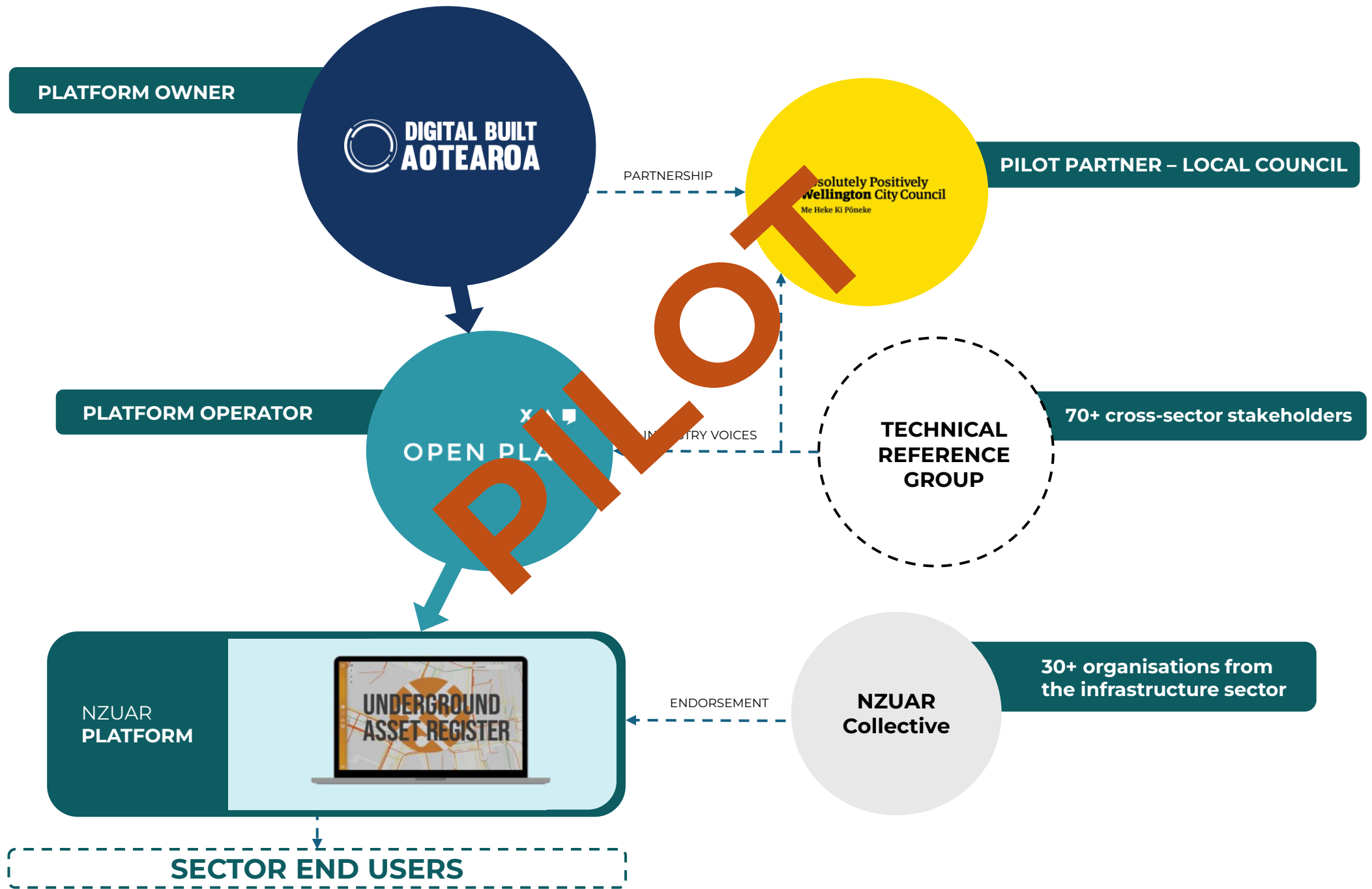


admin@digitalbuiltotea.org.nz

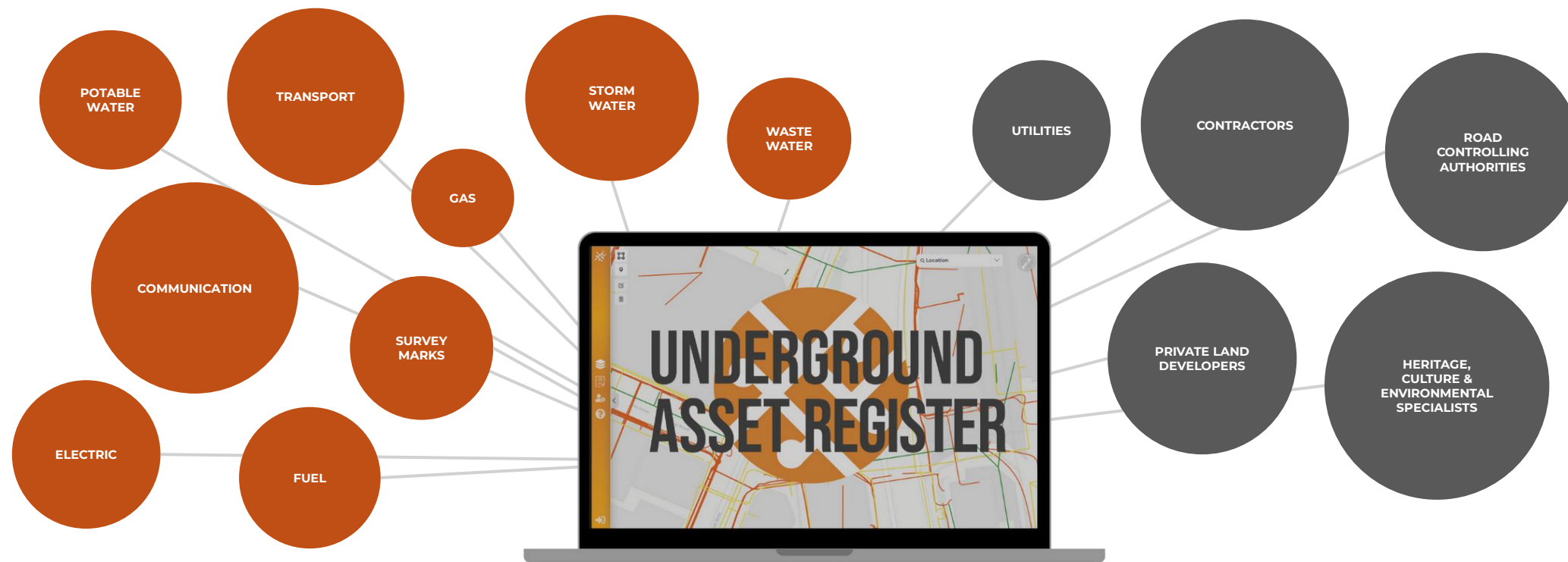
CHALLENGE 2: Identifying institutional hurdles early



COLLABORATIVE STRUCTURE OF PILOT NZUAR



ORGANISATIONAL & DATA HURDLES



WHAT DATA IS REQUIRED



WHO USES IT?

HOW NZUAR HELPS YOU MEET YOUR OBLIGATIONS & DRIVES VALUE



I'M A...	Network Utility Operator	Corridor Manager (RCA)	Contractor
NZUAR SUPPOTS ME IN MEETING MY OBLIGATIONS UNDER THE CODE....	- Share my asset location data ✓ - Update as-built records within 3 months of completing works ✓ - Report strikes, wrongly recorded or unidentified assets ✓	- Coordinate works ✓ - Set and enforce reasonable conditions ✓ - Consider how technology can improve compliance ✓	- Report any discrepancies (such as wrongly recorded assets) and asset strikes and damage back to the utility owner and Corridor Manager ✓ - Take measures to ensure assets aren't damaged during the work ✓

UTILITIES' CONCERNS: And how we answered them

Data quality / indemnification - 'our data's not accurate enough to share' & 'we don't want to be held liable for strikes'

Data security - 'could this fall into the wrong hands?'

Commercial sensitivity – Utilities asked 'will this help our competitors?'

CHALLENGE 3: Building trust around data sharing



INSTITUTIONAL HURDLES



1. OWNERSHIP
MODEL



2. TECHNOLOGY:
FEDERATING DATA



3. POLICY SETTINGS
& REGULATION



4. BUSINESS
MODEL



5. SECURITY



OUR CHARITABLE PURPOSE

We're on a mission to encourage collaboration & knowledge-sharing to build infrastructure resilience throughout Aotearoa

OUR THESIS

Resilience isn't just about our ability to build tools quickly in an emergency – but to have them ready and embedded in advance.

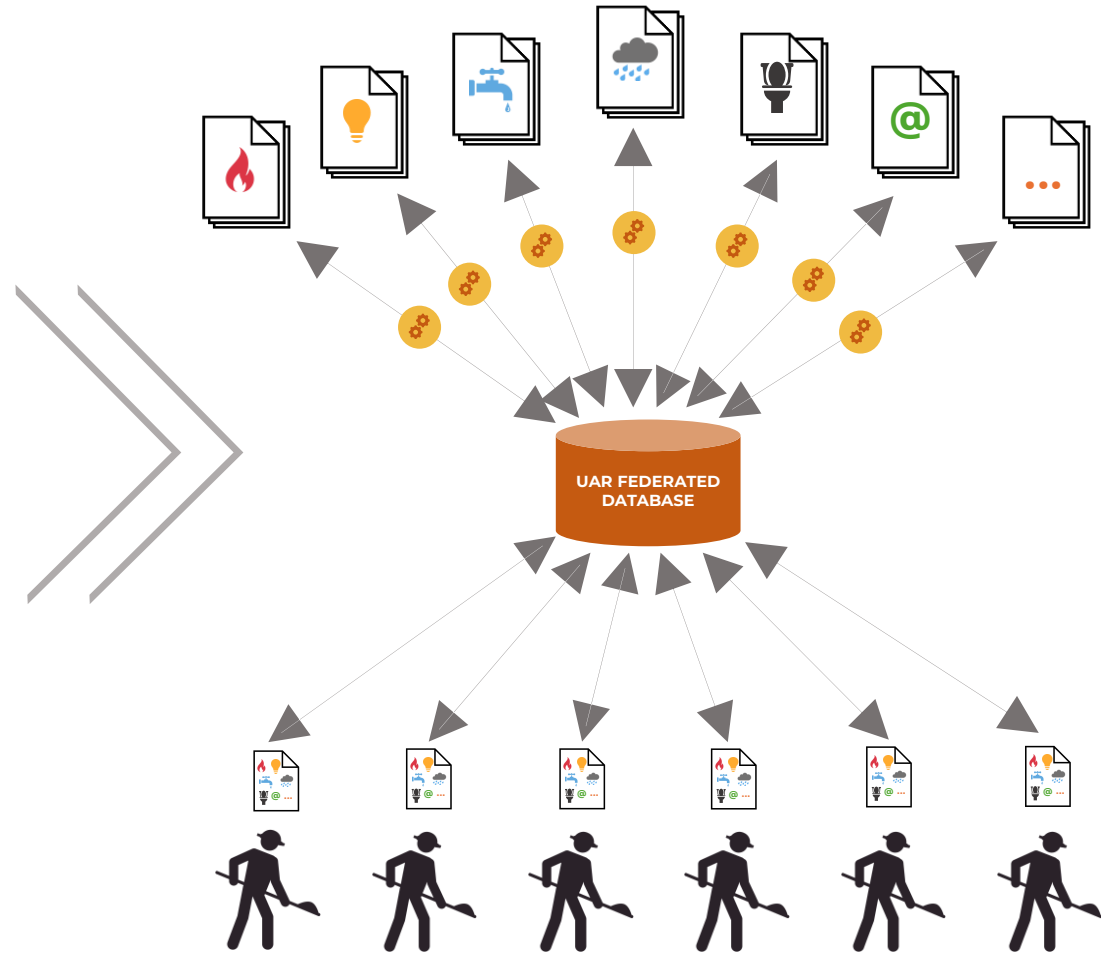
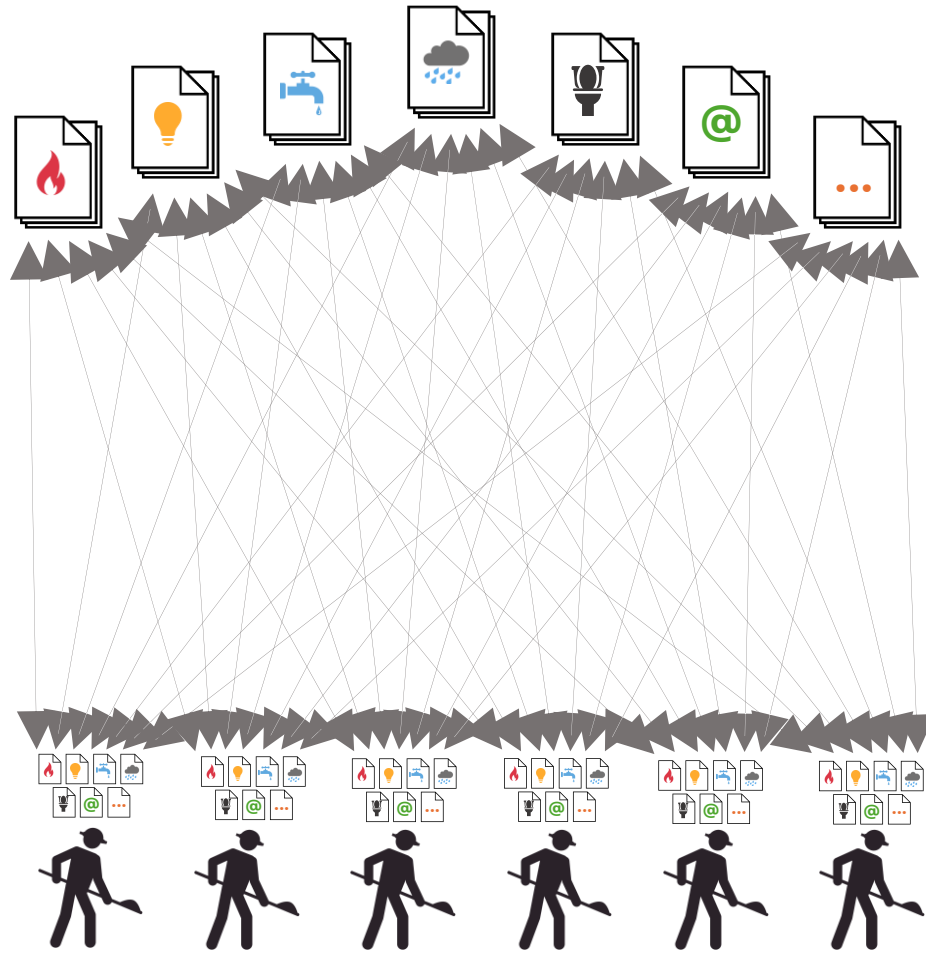


THE 'WHO' MATTERS

Operating Business	Solutions	IP ownership Data Stewardship
 OPEN PLAN 	 NZ FORWARD WORKS VIEWER  NZ UNDERGROUND ASSET REGISTER	

Change of mindset to one of open data stewardship in a neutral (charitable) entity

DATA, FEDERATION & TECHNOLOGY





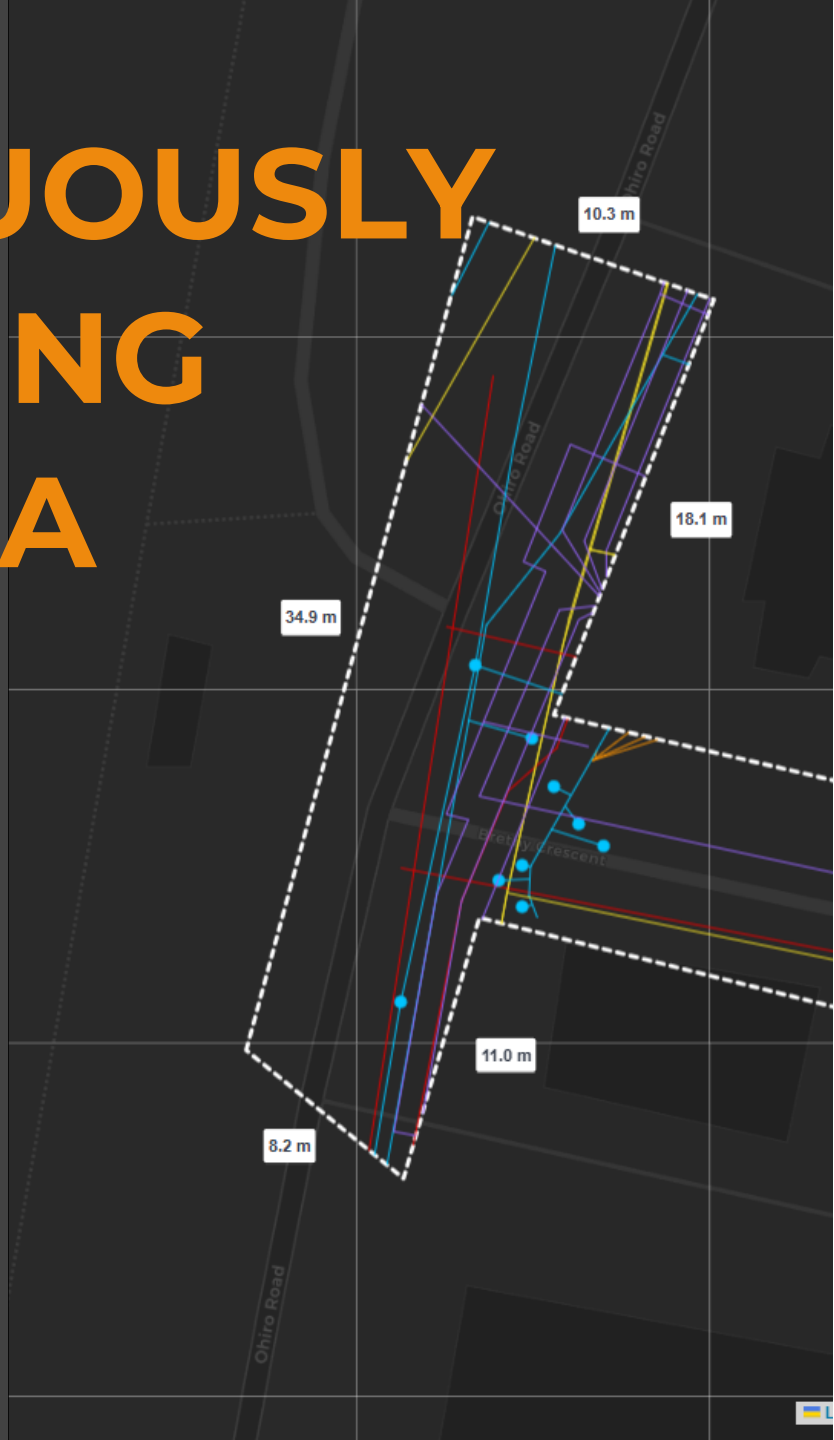
Utility Assets & Records

Warning - this data is indicative, do not rely solely on this data. Refer to Terms of Use.

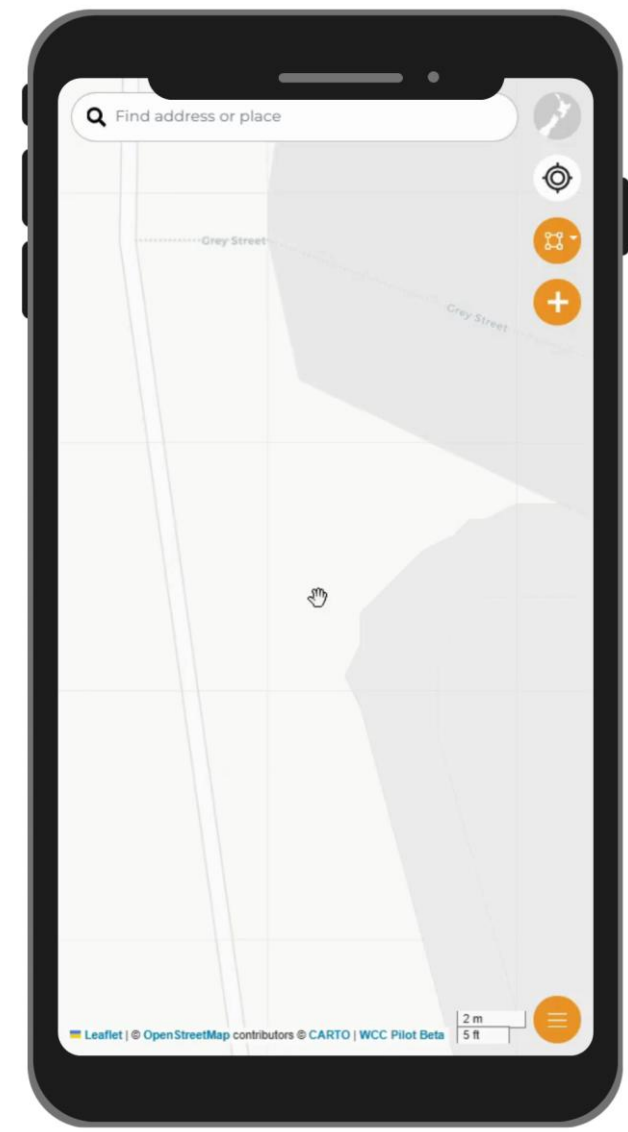
CONTINUOUSLY IMPROVING THE DATA

- View operators
- 60 found
- Download
- Print
- Share
- ☒ Storm Water
- (2)
- ☒ Waste Water
- (6)
- ☐ Fuel
- (0)
- ☐ Transportation
- (0)

- Other Assets**
- No assets found
- ☐ Survey marks
- (0)
- Site Records**
- No records found
- ☐ My organisation
- (0)
- ☐ Other organisations
- (0)



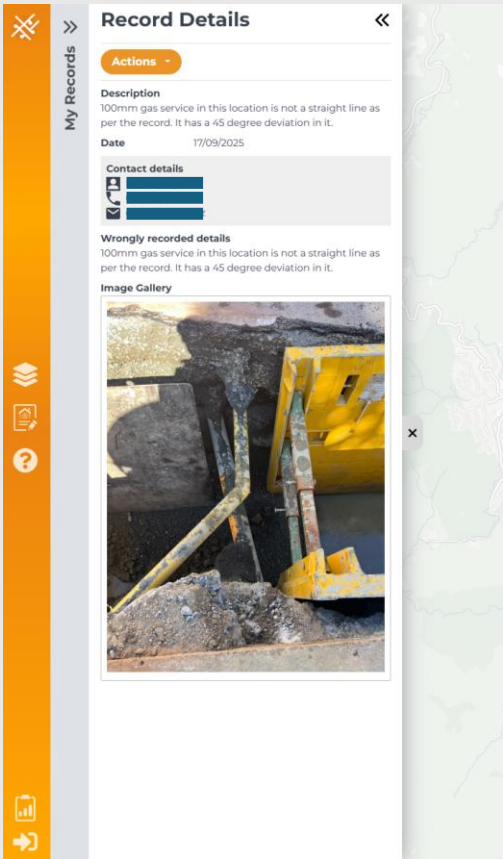
POLICY & REGULATION



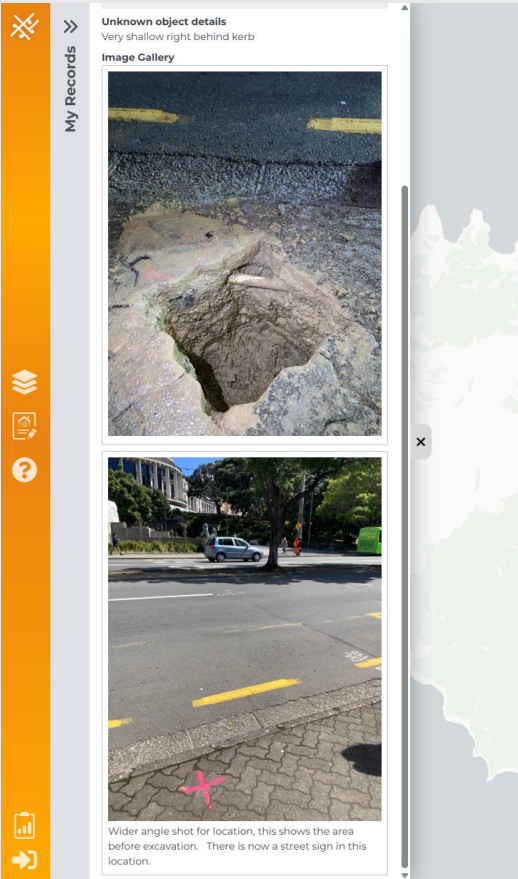
EXAMPLES OF SITE RECORDS



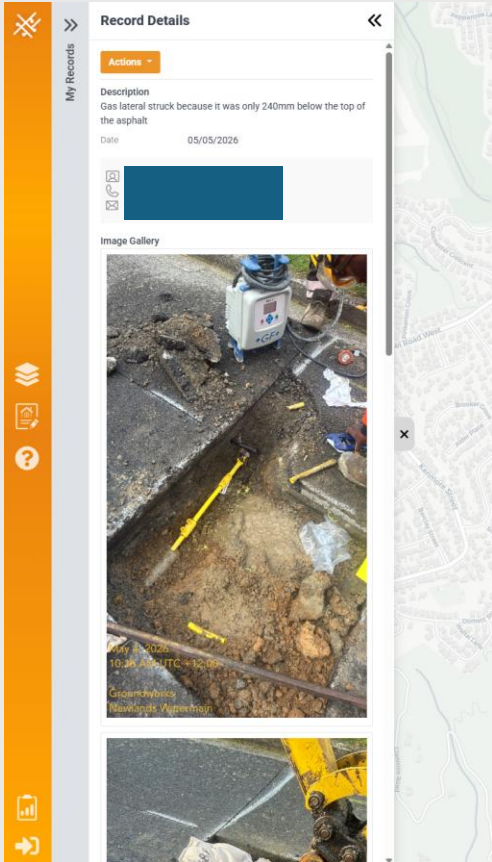
Gas pipe had a **wrongly recorded** deviation, this was investigated by asset owner and maps have now been updated



Shallow **unknown** cable discovered, no utility has claimed ownership. Will remain in UAR as a warning to others excavating in area.



Service strike on a shallow gas lateral - flagged with the asset owner, as well as creating a record for other excavators of a hazard.



OVER 20 SUBSCRIBING ROAD CONTROLLING AUTHORITIES, INCLUDING:

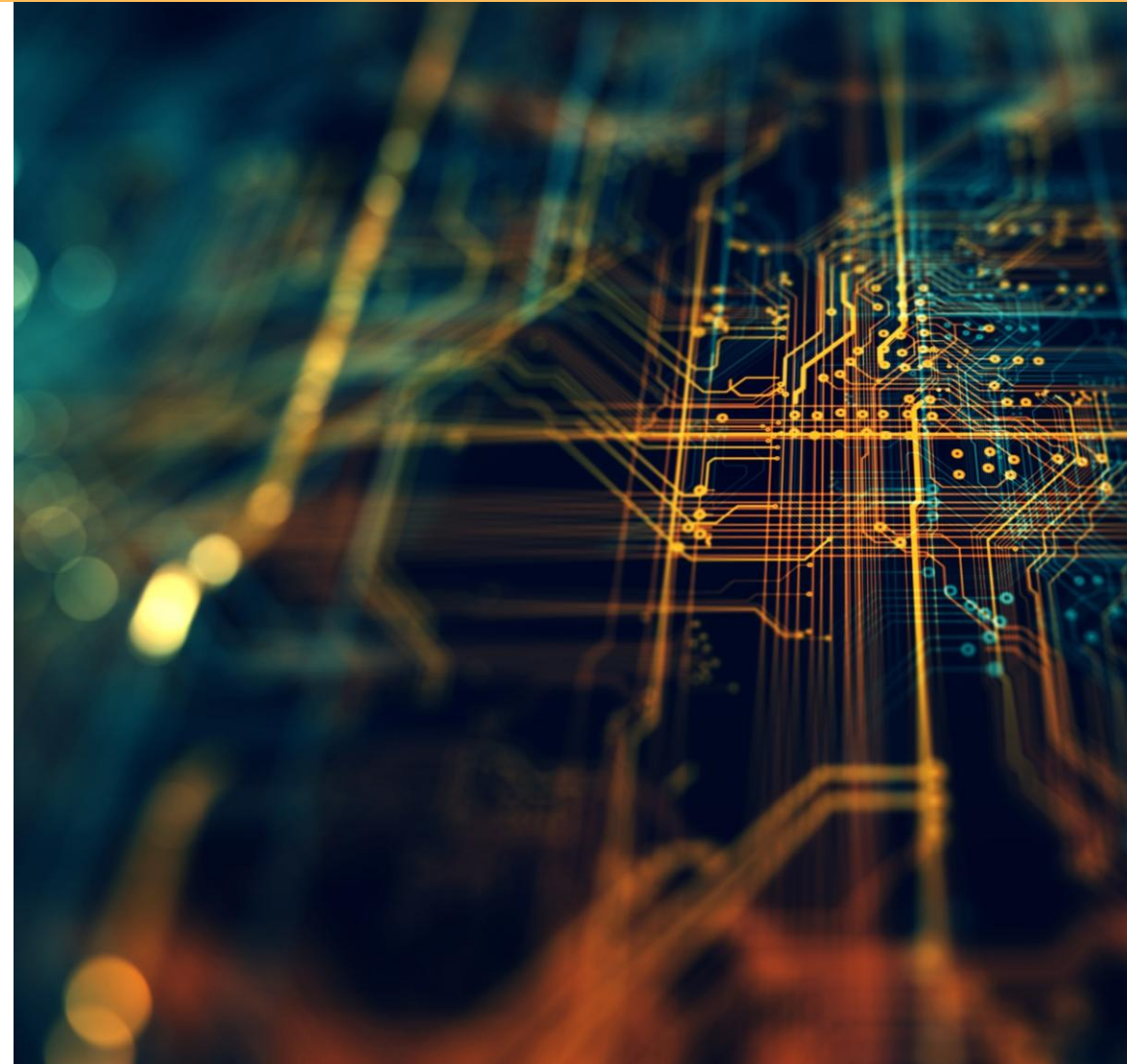


And users from more than **460** organisations around New Zealand
Drawing on **13+** years of technology



Security

- Emerging international consensus (visibility & access versus risk)
- Cloud Native Modern Technology
- User & Org validation
- Security Levels
- Rate Limiting & Session Tracking
- Notifications & Alerts





WHAT OUR COUNCILS ARE SAYING:

“Before the Forward Works Viewer and the Underground Asset Register, we [didn’t meet our] obligations. [Laws and Policy] tells us *what* we need to do - but the *how* is quite unclear. With the NZUAR, we’ve... moved away from reactive, and we’re firmly going towards the proactive and planned approach.”

Amanda Wolfaardt
Corridor Manager, Wellington City Council



QUICK RECAP: TRANSFERABLE TAKEAWAYS

This is a model that travels – and you don't need a mandate to begin.

- ▶ **Pilot it** - frame it as a trial and give yourself licence to test, fail and learn.
- ▶ **Iterate** - pick a priority, build credibility and then expand.
- ▶ **Build trust first** - start voluntary, be upfront about imperfect data, and let the results do the persuading.

Further reading: [What Lies Beneath](#) – Singapore Land Authority's best practice playbook, featuring NZUAR and 7 other jurisdictions (July 2026)



**DIGITAL BUILT
AOTEAROA**

COMMON GOOD TECHNOLOGY.

support@nzuar.org.nz