Future Ready Project Webinar Series

City of Newcastle, Smart City Intelligent Data Platform

Upcoming Webinars

Tell your friends

Designing Transport Facilities for all Ages and Abilities (AAA) in the Community

Wednesday 13 May, 12pm (AEST)

Peter Kortegast
Transport Engineer, New Zealand

Acknowledgement of Country

We would like to pay our respect and acknowledge all the traditional custodians of this land – where ever you are, including the **Awabakal People** in Newcastle for it is in their country that the project has taken place.

We would like to pay our respects to Elders past, present and future.

Future Ready Project Webinar Series

City of Newcastle, Smart City Intelligent Data Platform

Future Ready

See the future more clearly

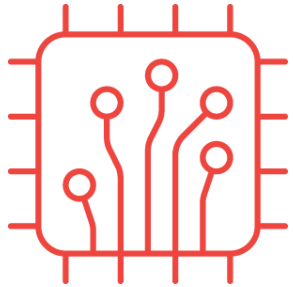
Design for it today

Better outcomes for people and places

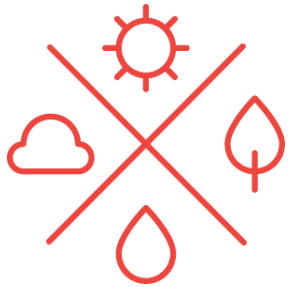
Taking a Holistic View

Climate

Society



Technology



Resources

Speaker

Ron Cruickshank

Sales Director - Digital

Project Location

Project area located Newcastle, in NSW

Fun Facts About the City of Newcastle

~ 160,000
Population

$16.5 B
Local GRP

5MW
solar farm

5,000
new LED streetlights

EV
charging stations deployed

186
sq kms

Port: **150m**
Tonnes, $19 Billion

Transition from **semi/heavy** industrial

Second
Oldest
city in Australia

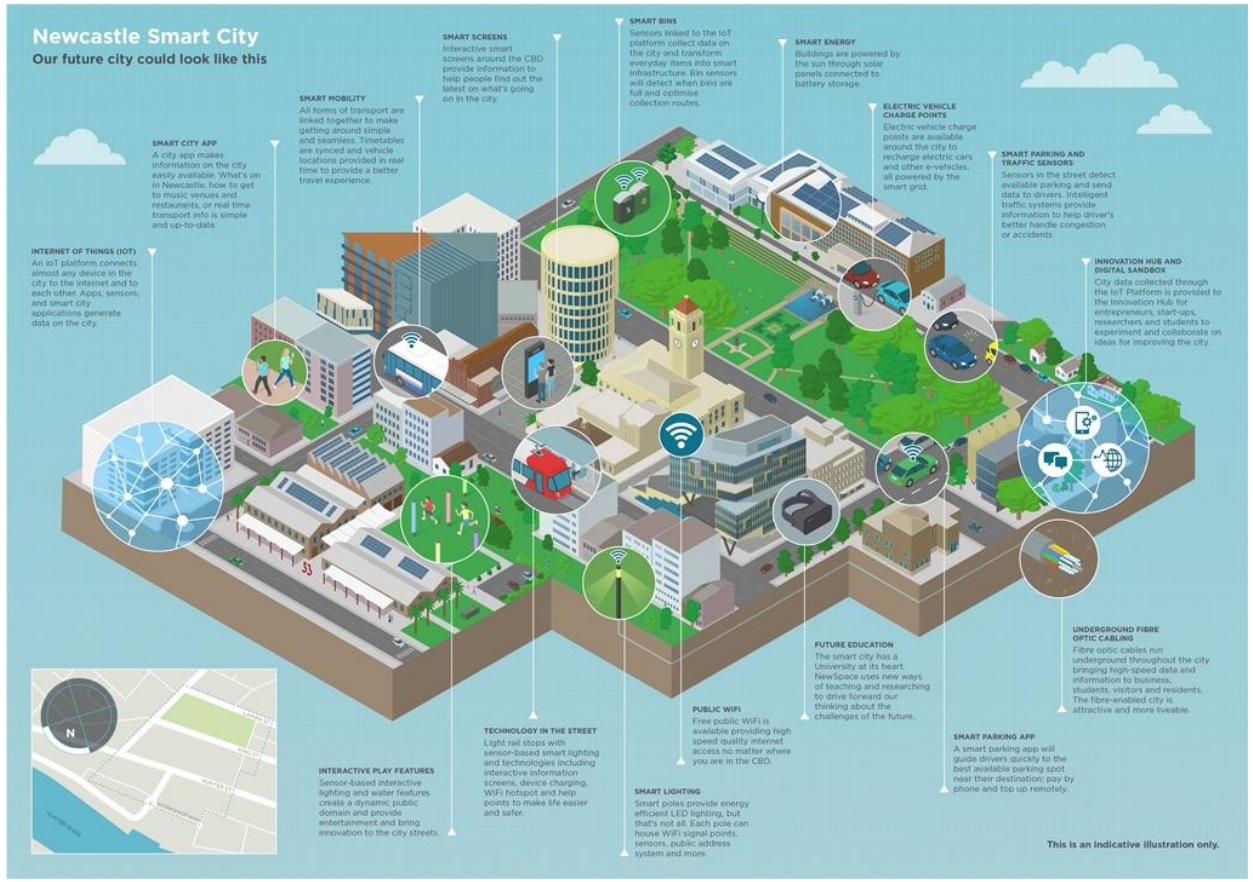
The City's vision "is to be a **smart, livable** and **sustainable** city"

Smart City Intelligent Data Platform

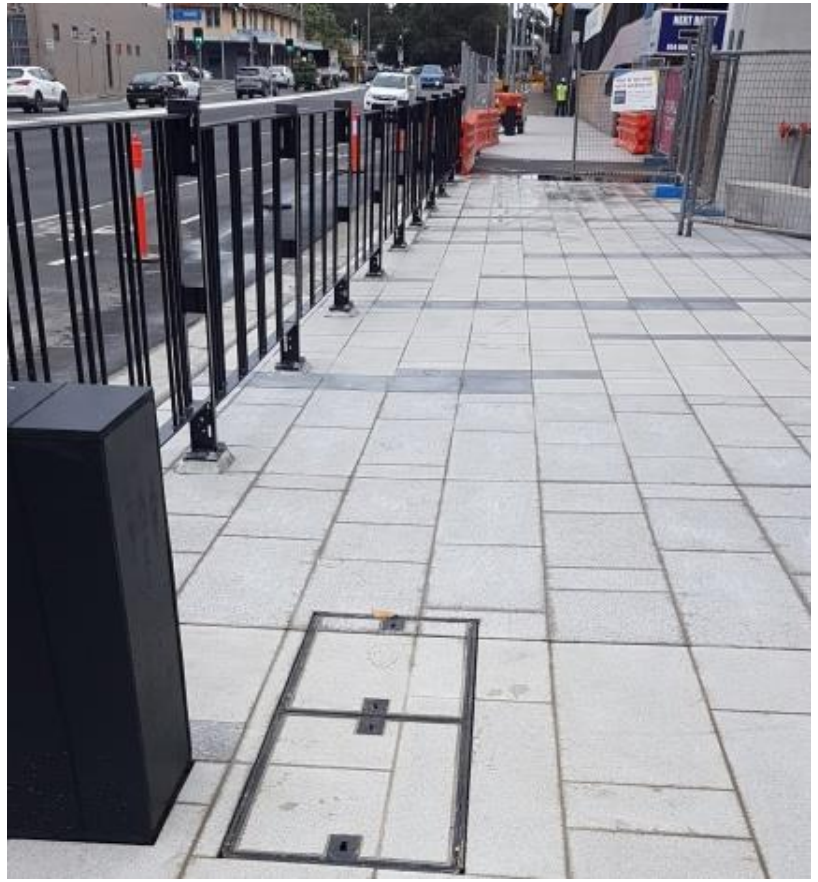
We have developed an innovative digital solution, the Smart City Intelligent Data Platform, in partnership with the City of Newcastle in NSW.

Benefits includes:

- Real-time information:
  - Parking sensors, to optimise parking spaces;
  - Park soil moisture sensors, to optimise watering; &
  - Smart Bin sensors, to monitor bins that are full or on fire.
- Data analysis & insights to drive projects
- Integrated data and services which will drive productivity and resource management

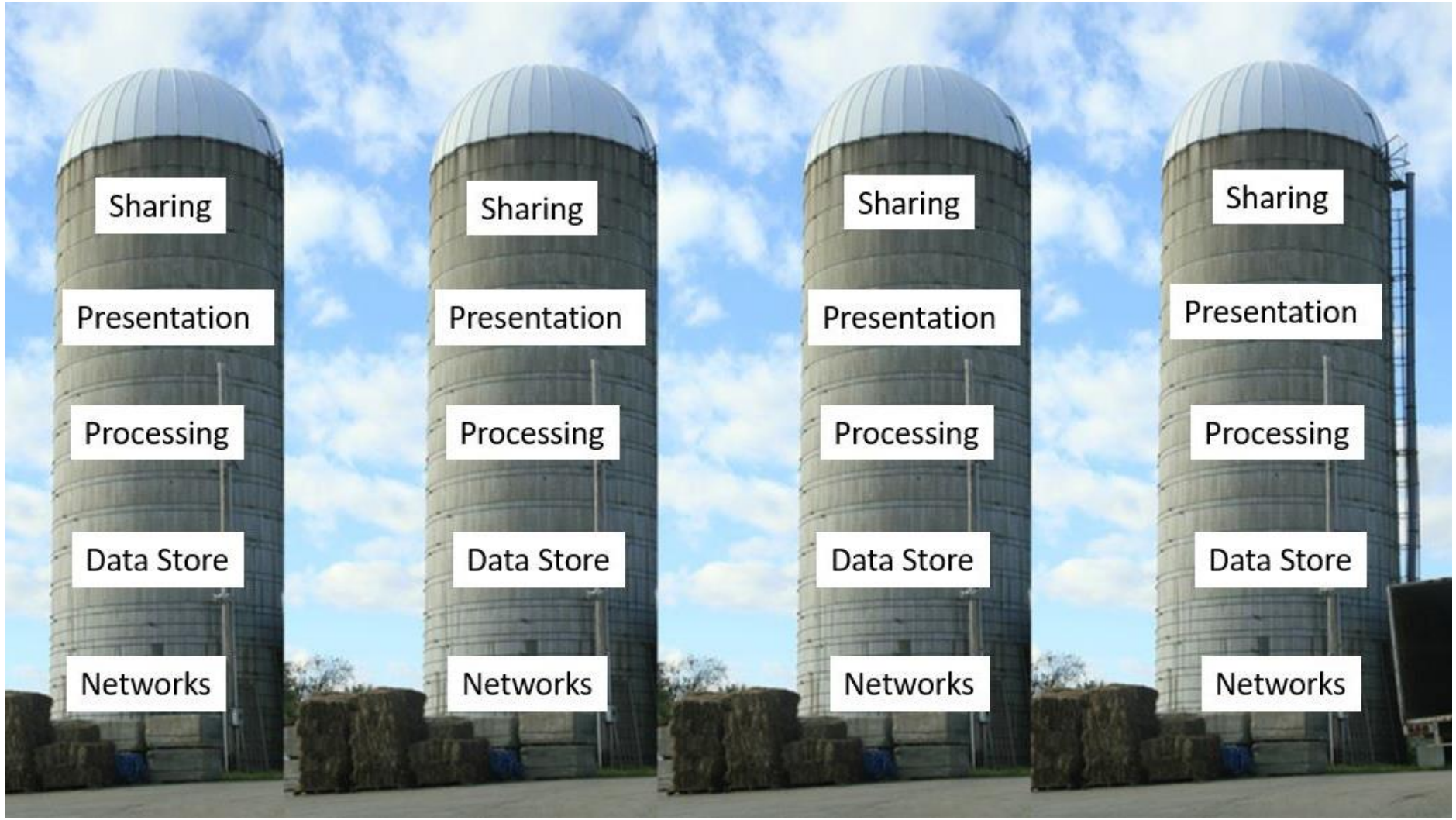


Infrastructure Investment



Smart Light Poles Support Inner City Network

Data Silos


Sharing
Presentation
Processing
Data Store
Networks
Sharing
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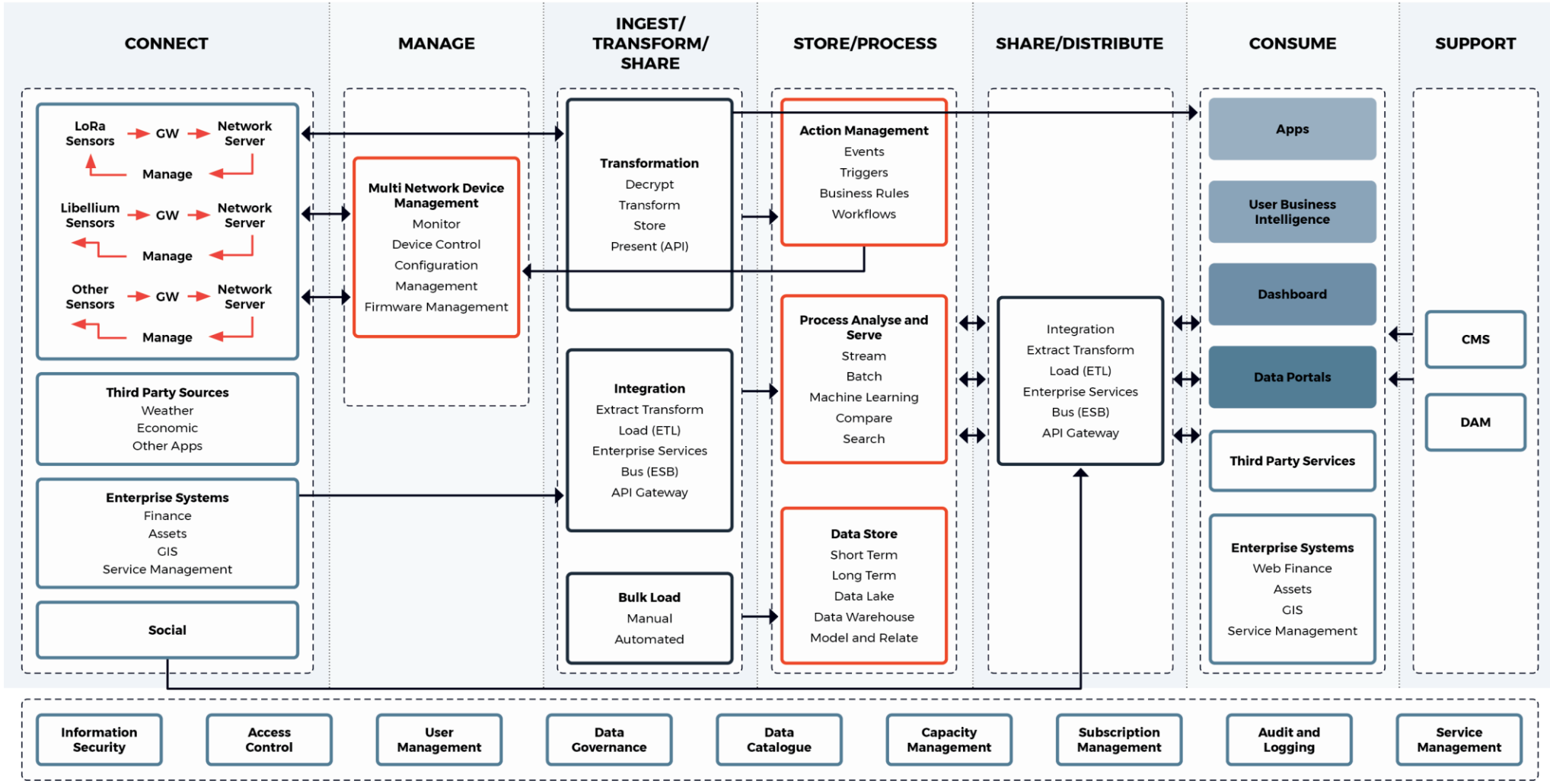
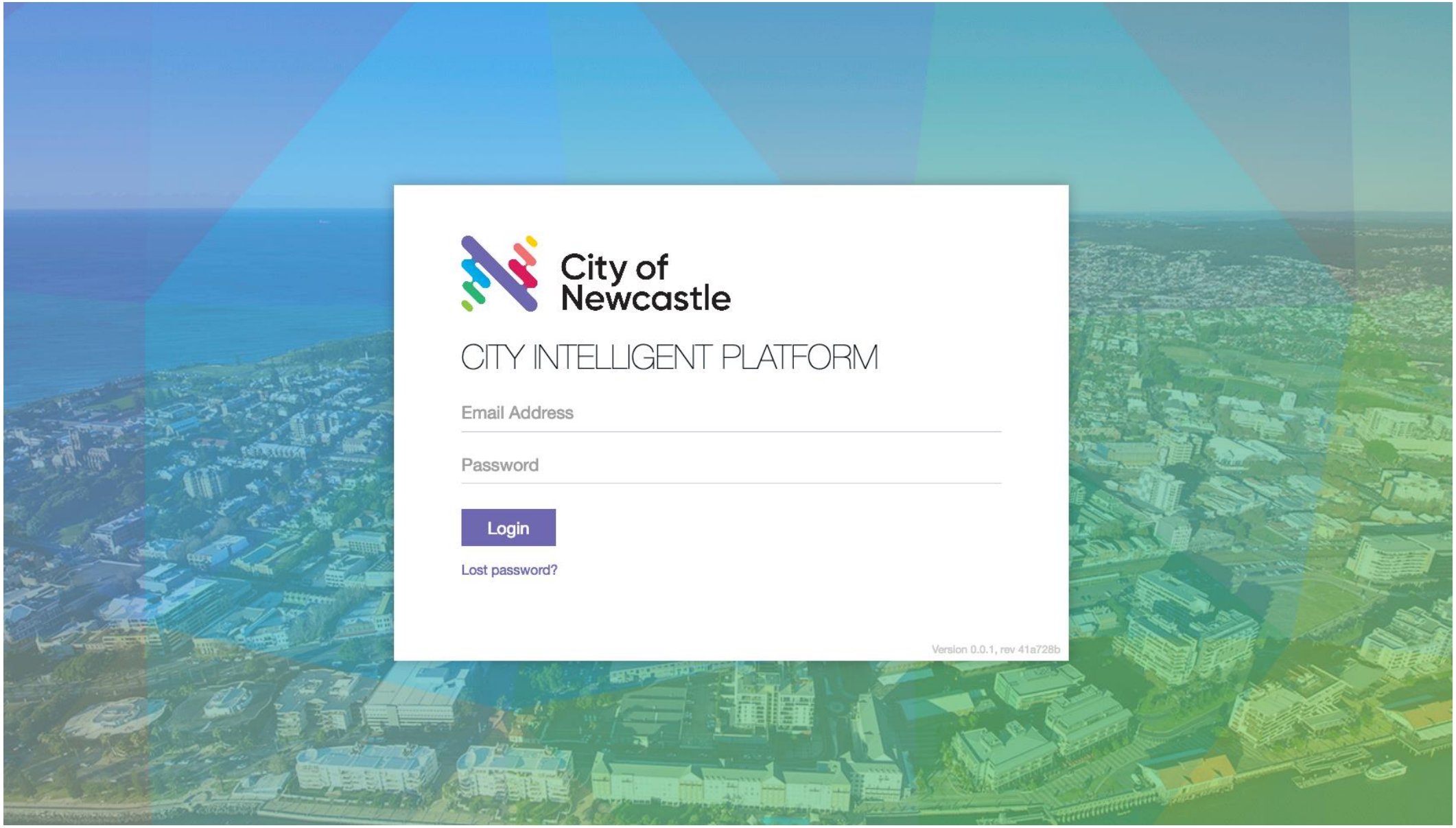
Networks

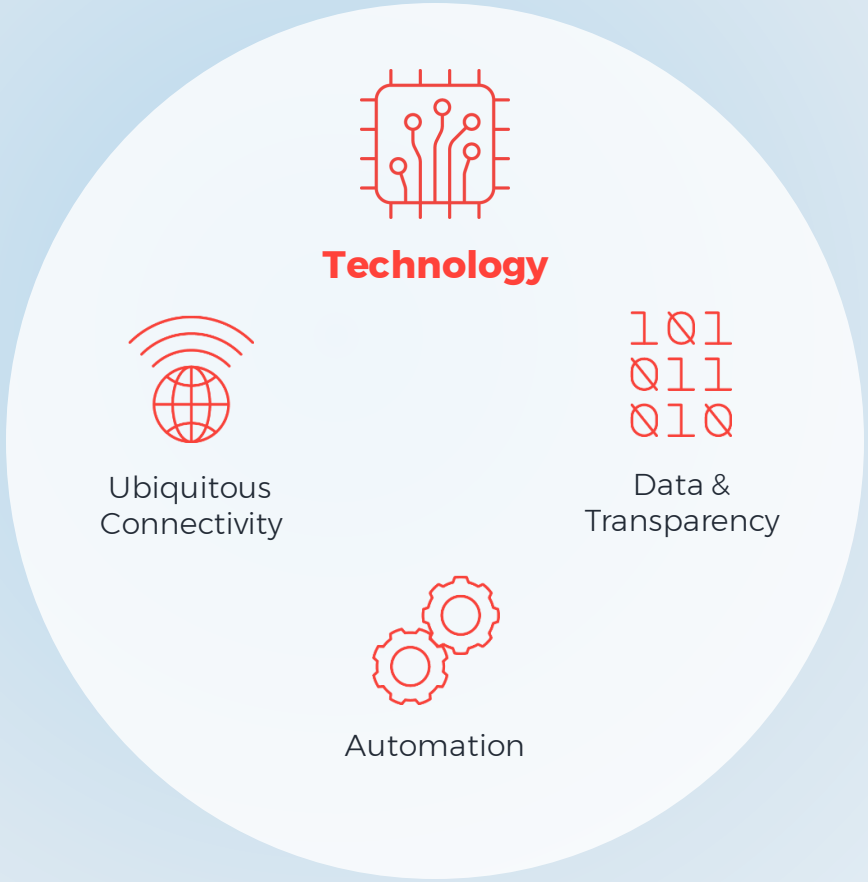
Smart City Capabilities




City of Newcastle
CITY INTELLIGENT PLATFORM
Email Address
Password
Login
Lost password?
Version 0.0.1, rev 41a728b

Smart City Intelligent Data Platform

Future Trends



City as a Data Commons

Enables open access and collaborative utilisation of city data to improve planning, stimulate economic development, attract people to Newcastle, build community engagement and interaction, and improve the experience of the city.

City of Newcastle
City Intelligent Platform

- Home
- Datasets
- Services
- Administration
- My Account
- Logout

Version 0.0.1, rev 41a728b

CIP / Services

+ Add a Service

Services

The following services have been configured for use in the City Intelligent Platform. Services represent systems external to the CIP from which data may be retrieved, or to which data may be sent.

IoT and Devices

NATIONAL NARROWBAND NETWORK Co.	NNNCo - Primary Network	Online	24 Datasets
NATIONAL NARROWBAND NETWORK Co.	NNNCo - Experimental Network	Online	7 Datasets

Weather

Australian Government Bureau of Meteorology	Bureau of Meteorology	Online	12 Datasets

Mapping and GIS

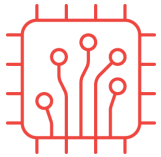
esri	Newcastle City Council ArcGIS	Online	12 Datasets

Open Data

OpenDataSoft	City of Newcastle Open Data Portal	Online	N/A
OpenDataSoft	City of Newcastle Internal Data Catalogue	Online	N/A

Customer Engagement

evolveplus	Newcastle Library Customer Feedback	Online	N/A



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Version 0.0.1, rev 41a728b

CIP / Datasets

Datasets

+ Add a Dataset

Search

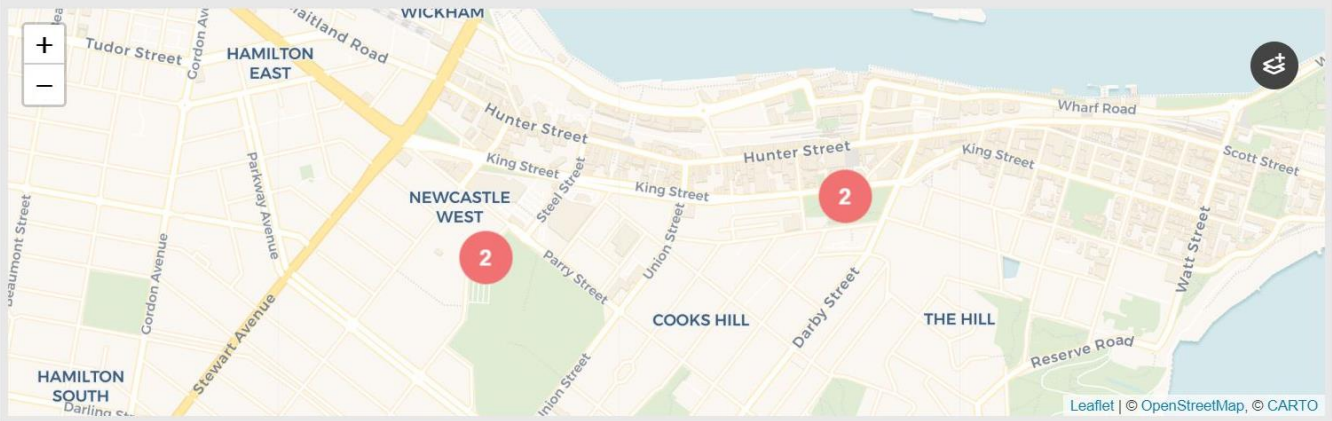
- Environmental
  - Air Quality Sensors
  - Soil Moisture Sensors
  - Soil Sample Reports
- Waste Management
  - Bin Lift Records
- Weather
  - Weather Observations
  - Weather Forecasts
  - Surf Conditions
- Mapping & GIS
  - Feature Sets
  - Tile Sets
- Library Services
  - Program Registers
  - Borrowing Reports
- Customer Engagement
  - Feedback Button Records
  - Sentiment Analysis

Filter by: Type Source Owner

Dataset	Last Updated
Newcastle Soil Moisture Sensors Moisture Sensor Register / NNNCo N2N - Primary Network	2:04pm, March 27, 2019
Summerhill Air Quality Monitors Air Quality Sensor Register / NNNCo N2N - Primary Network	2:04pm, March 27, 2019
Nobby's Beach Weather Observations Weather Stations / Bureau of Meteorology	2:04pm, March 27, 2019
Newcastle Weather Observations Weather Stations / Bureau of Meteorology	2:04pm, March 27, 2019
Newcastle Weather Forecast Weather Forecasts / Bureau of Meteorology	2:04pm, March 27, 2019

NNNco Dingtek Smart Bin Register

Smart Bins / N2N DL - NNNCO



12	3 hours ago
Devices	Last Update

Warnings

Full	dingtekBin: 479AC8680039001F	today, 11:29 a.m.	View Bin

About this Dataset

All Dingtek smart bin devices

Owner
admin

Created
July 4, 2019, 2:48 p.m.

Type
Smart Bins

Source
N2N DL - NNNCO

Service Provider
NNNCo N2N

Tags
IoT and Devices

Device Types
dingtekBin

Map View

Smart Bins

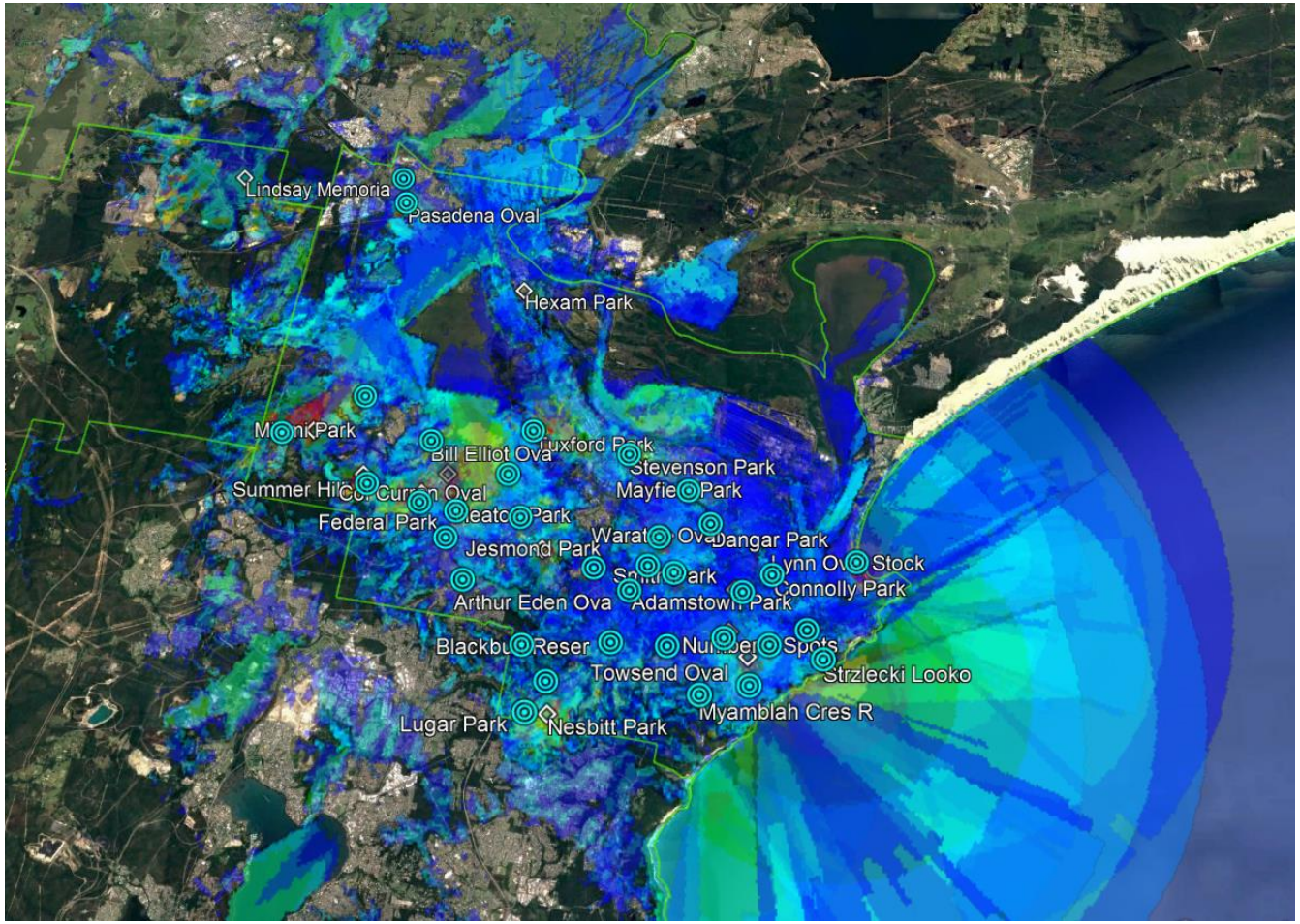
Status Updates

Export

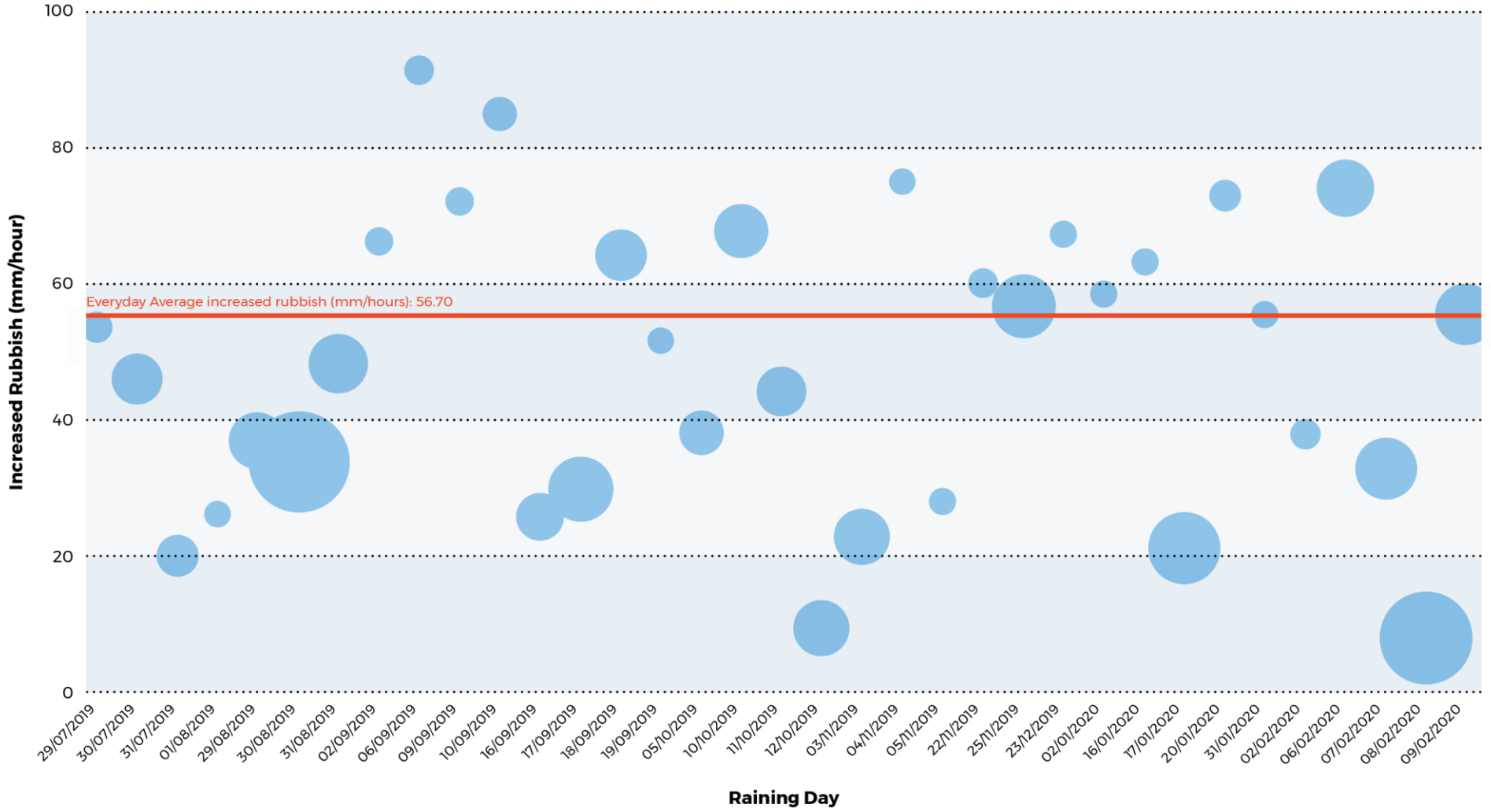
Configuration

City as an Experimental Platform

Supports the current trajectory of Newcastle as a centre for industrial innovation and technology development through creation of a city-scale testbed for prototyping, trialing and evaluating technology, social and regulatory innovation.

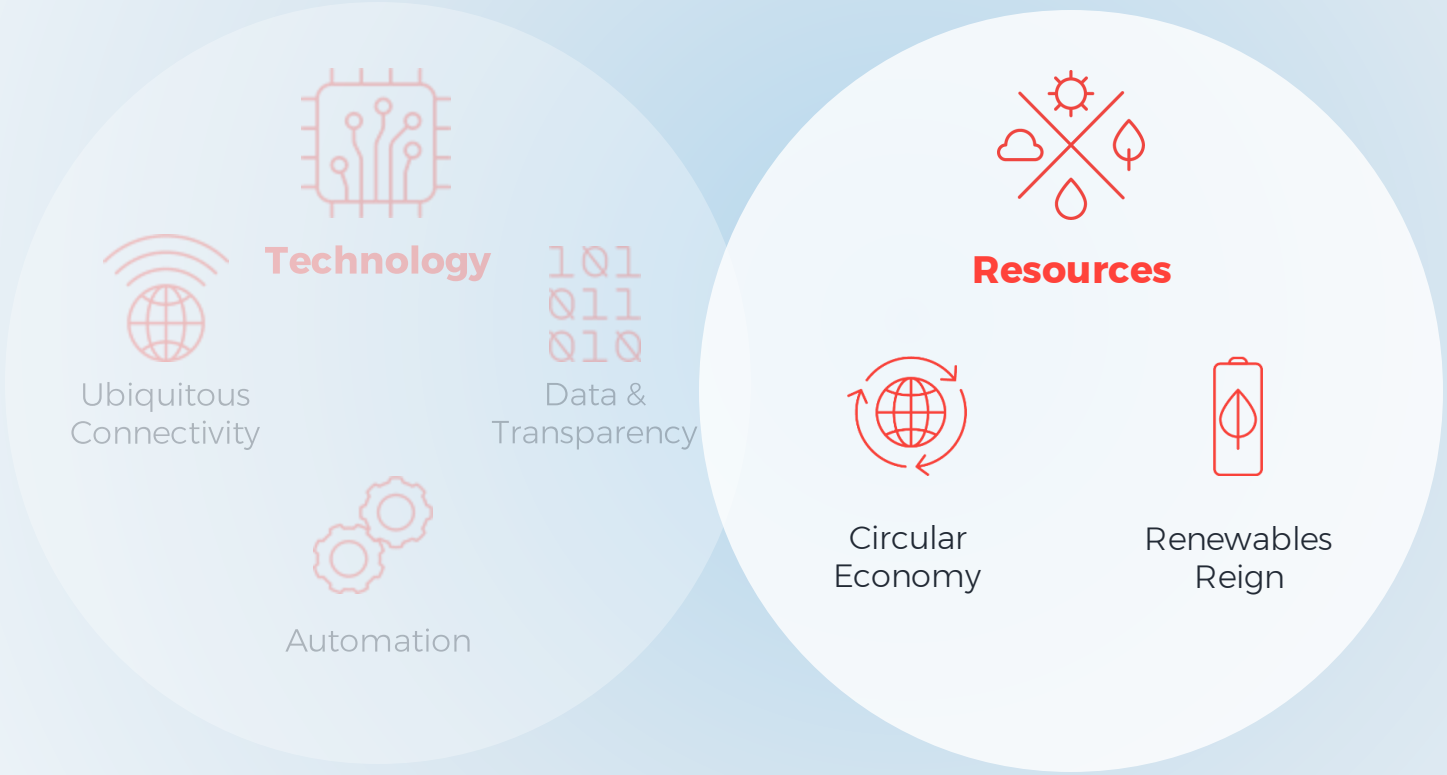

Lindsay Memoria
Pasadena Oval
Hexam Park
Bill Elliot Ova
Stevenson Park
Mayfie Park
Federal Park
Jesmond Park
Dangar Park
Stock
Connolly Park
Arthur Eden Ova
Towsend Oval
Strzlecki Looko
Myamblah Cres R
Lugar Park
Nesbitt Park

Relationship between rain & rubbish increase rate



Smart City Intelligent Data Platform

Future Trends



Moisture sensor register

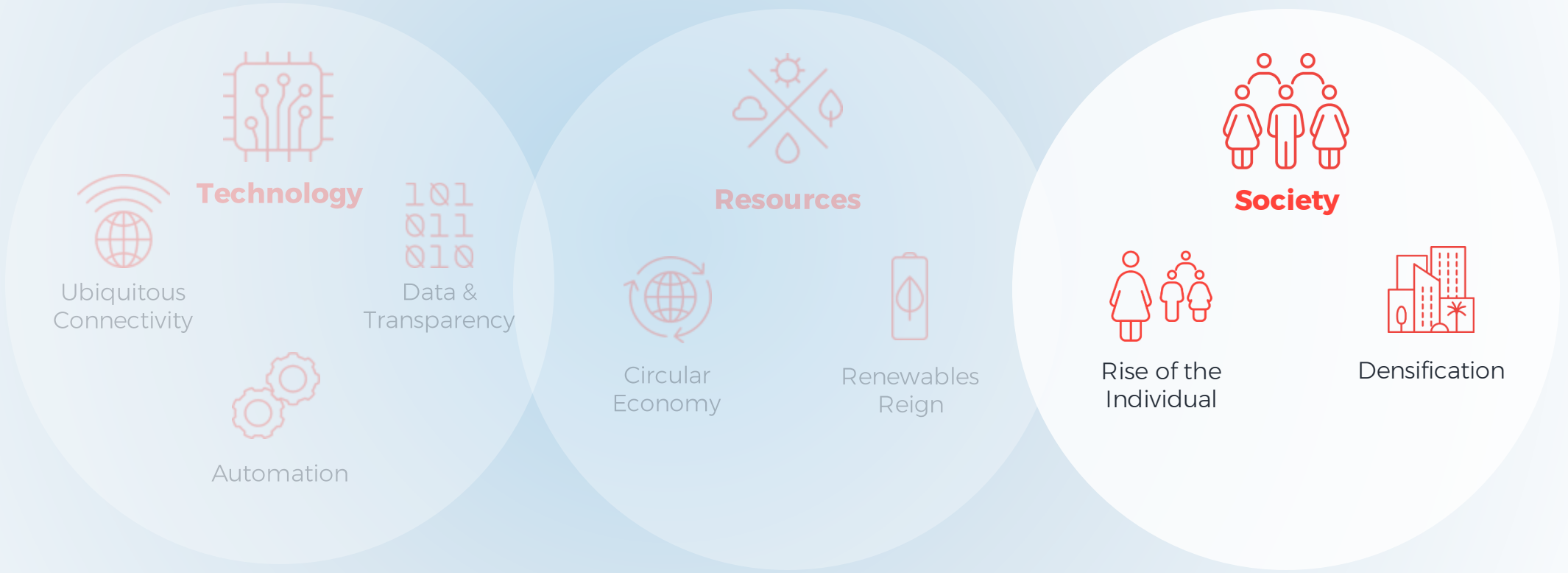
Newcastle Soil Moisture Sensors

Map View of Newcastle

Newcastle Solar Farm

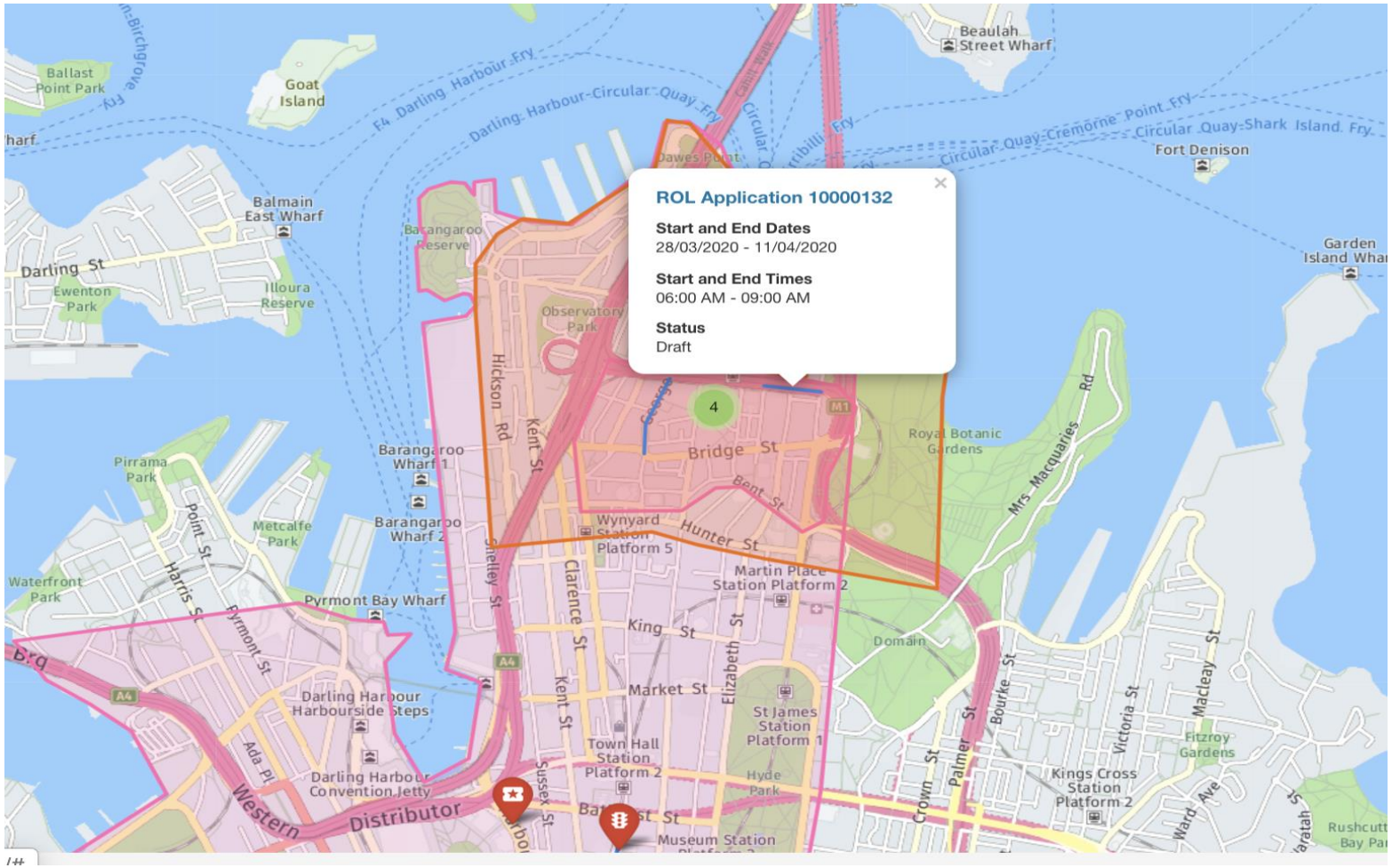
Smart City Intelligent Data Platform

Future Trends



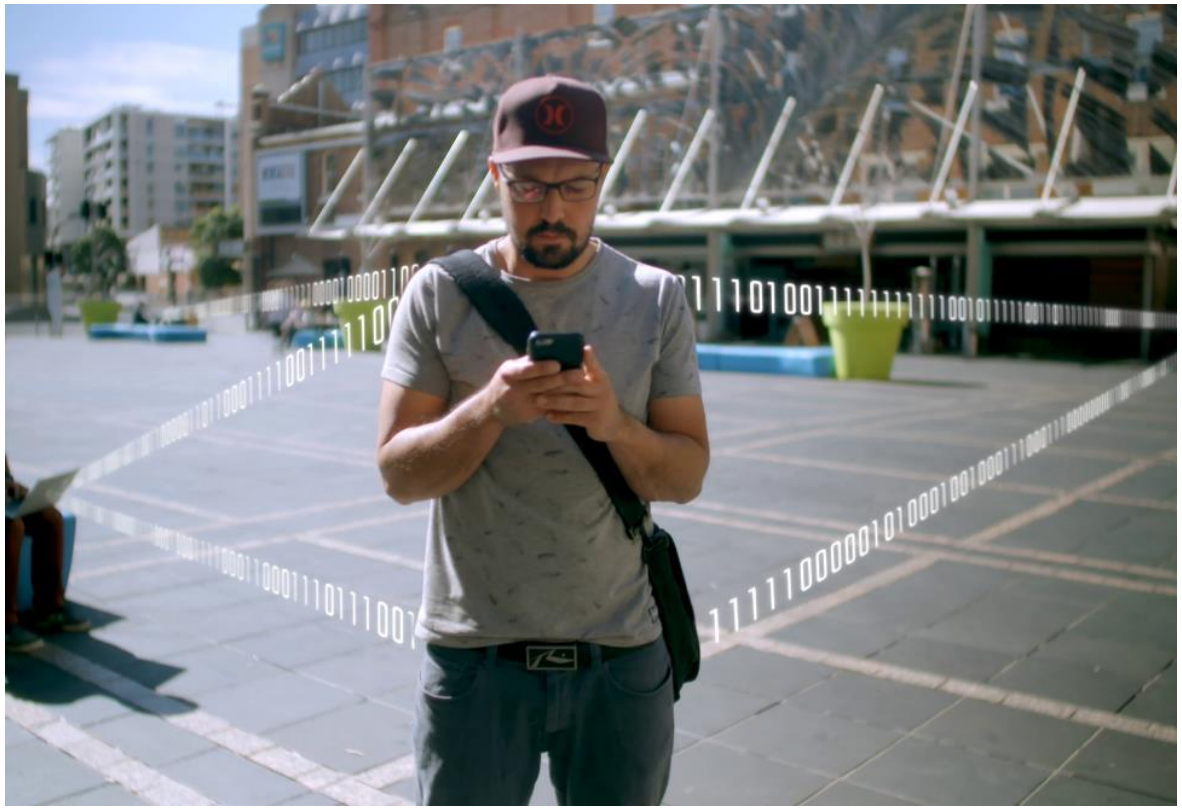
Sydney CBD

Densification

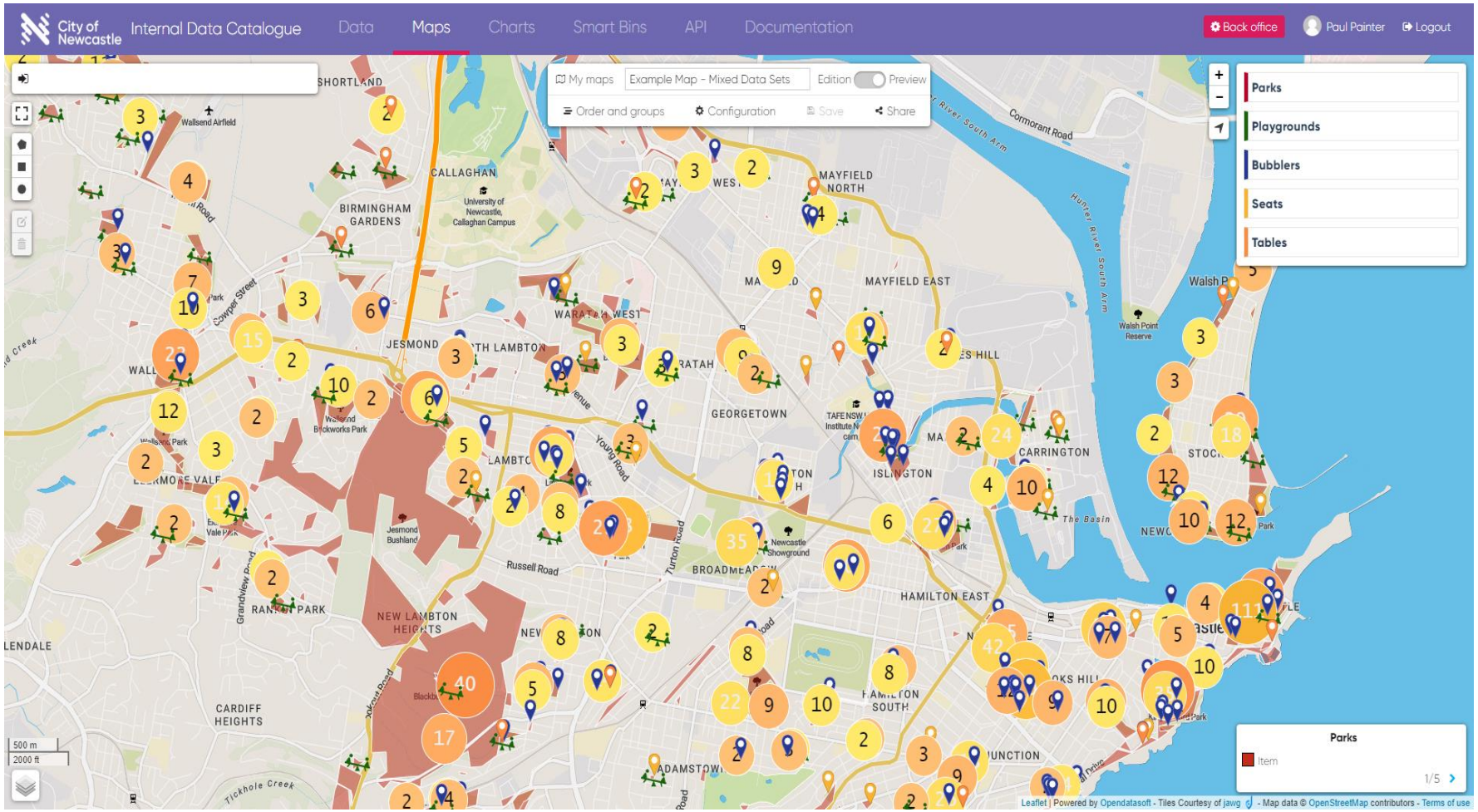


City as a Personal Service

Represents a model of urban services delivery that is data-led and responsive to citizen needs in real-time to ensure that social and business objectives are identified and met in ways that guarantee an efficient and enjoyable social, economic and environmental experience of the city.



Integration with OpenDataSoft



Integration with Microsoft Power BI

The Work From Home Index

Across all CBD's 46% of Australia is not currently not at their place of work.

Friday March 20th was a record low for staying away from the office, with Sydney leading at 57% staying away.

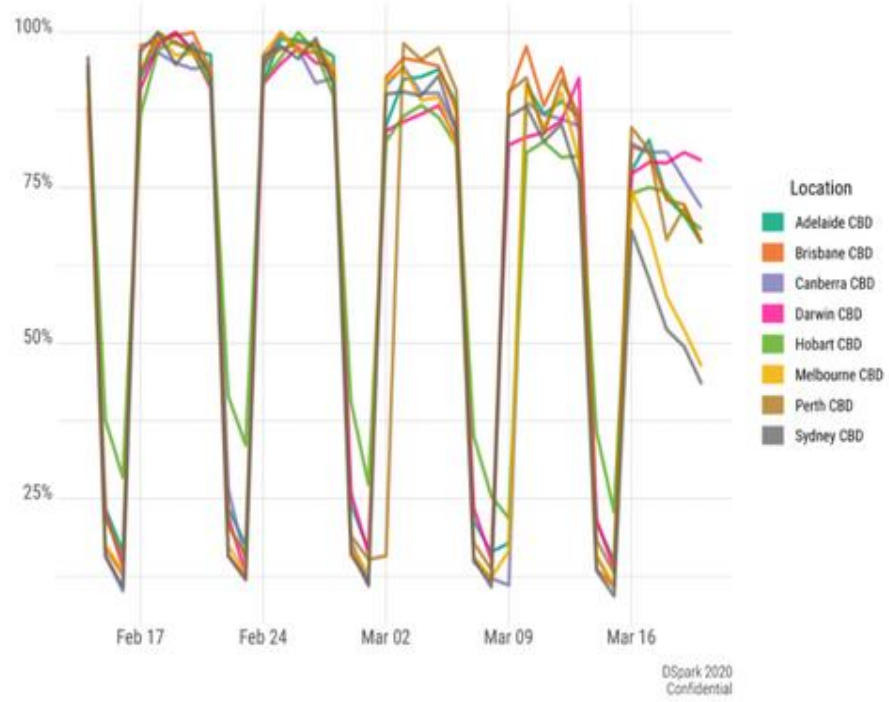
Worker volumes for Sydney and Melbourne CBD have dropped by 57% in Sydney and 54% in Melbourne.

34% of workers are staying away from the office in Adelaide, Brisbane and Perth.

DSpark
www.dsanalytics.com

Relative Unique Daily Worker Volume

Must stay for at least two hours between 8.00am – 7.30pm
Each location is scaled relative to maximum for period

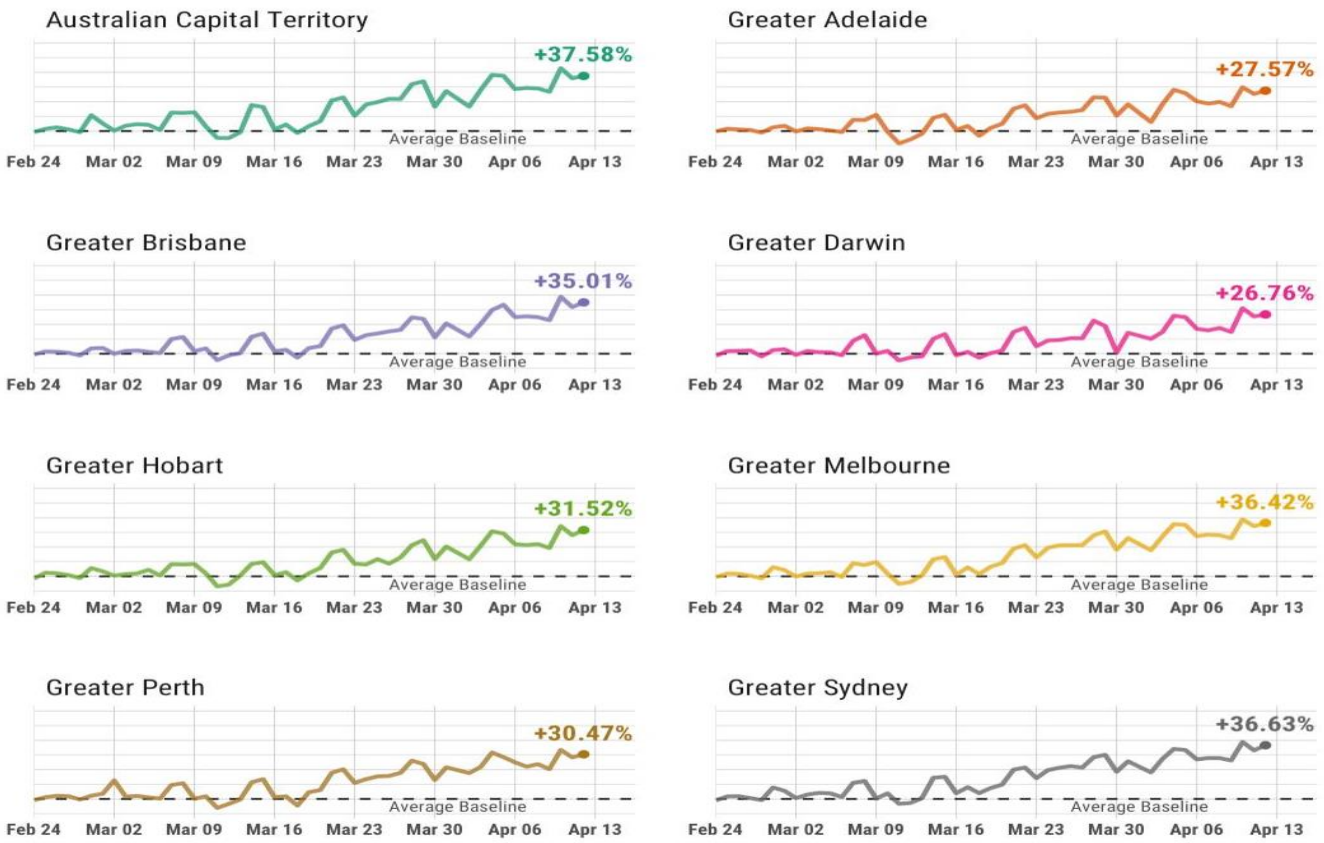


DSpark Methodology: Dspark analysis is based on each day counting workers of respective CBD regions who spent at least two hours present between 8.00am to 7.30pm – must have started the visit to the city no earlier than 5am

Average Time Spent Close to Home

Measures the average time spent within 1km of home.

Relative to average weekday for 17th – 28th Feb 2020

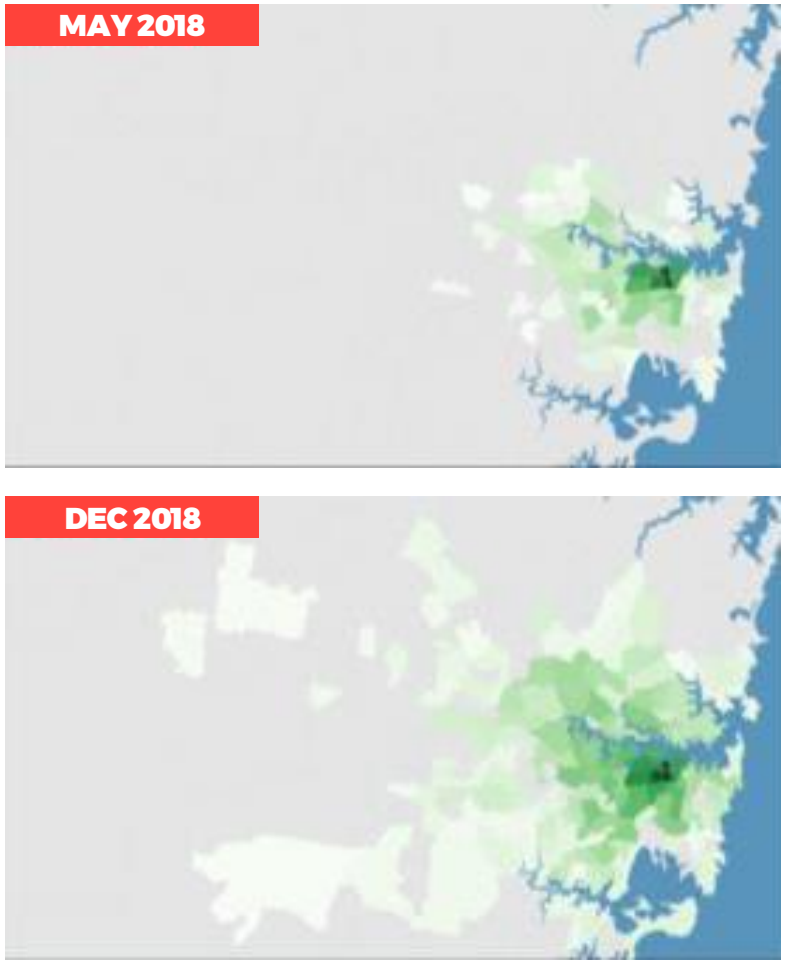


DSpark
www.dsanalytics.com

DSpark Australia

Sydney Fish Market customer catchments

As expected, the customer catchment of the SFM is visibly expanding for December as compared to the month of May.



DSpark
www.dsanalytics.com

Audience Distribution & Profile

City Scale Analysis, Subiaco, WA

Image – Subiaco, WA – Audience distribution and profile

Audience Segmentation

First Class Life, *Growing Independence* and *Families Establishing Roots* make up 75% of the area's audience today.

- First Class Life **32%**
- Growing Independence **22%**
- Establishing Roots **22%**
- Striving for Status **9%**
- Mature Freedom **3%**
- Hardship and Preservance **1.5%**

Urban Analytics

Economic Leakage, Downtown San Jose, California USA

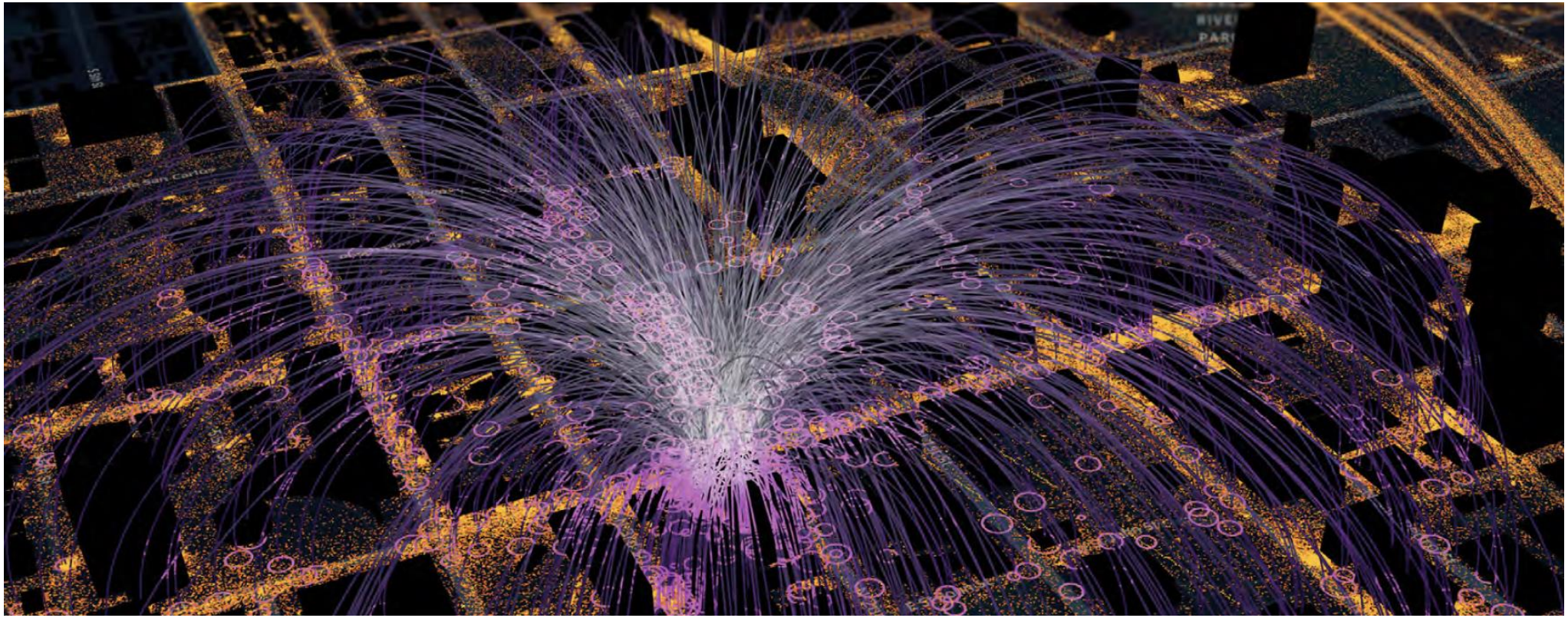


Image – Lunchtime dispersion and economic loss from WeWork HQ, San Jose

Place Intelligence

Urban Analytics

Asset Use and Utilisation – Place Profile, University of NSW

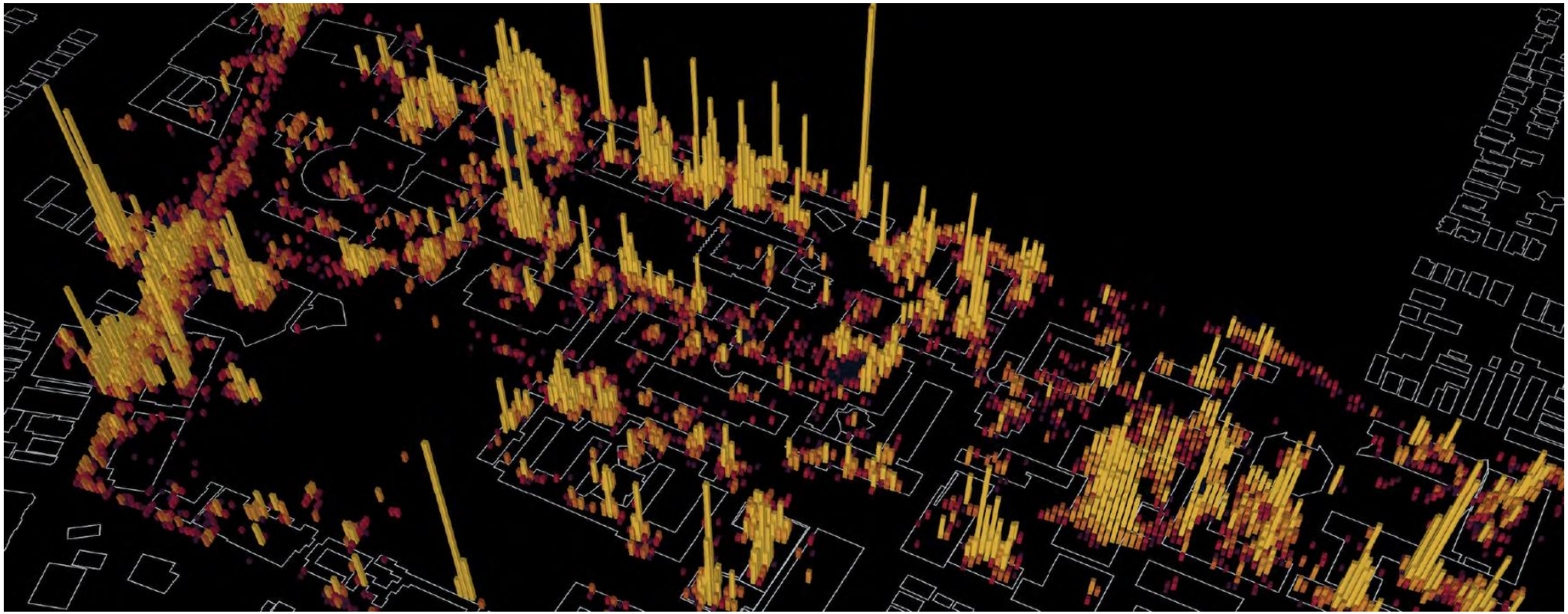


Image – The top 20% of active in buildings, weekly average - UNSW

Place Intelligence

Urban Analytics

Place Use – Busiest Places, ICG, Sydney

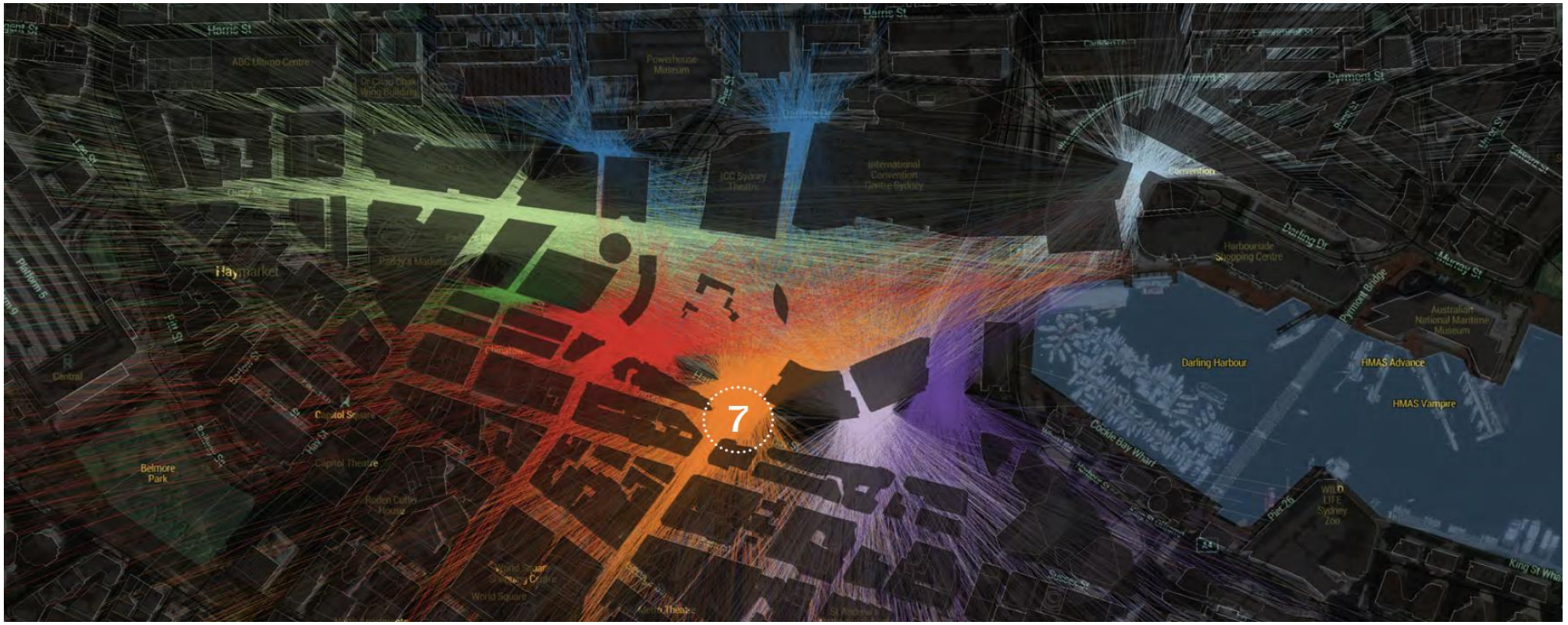


Image – Liverpool St. (entry 7) is the busiest point of entry to the precinct

Place Intelligence

Object Recognition

Q & A

Ron Cruickshank

ron.cruickshank@wspdigital.com

WSP Australia Pty Ltd
Level 15, 28 Freshwater Place
Southbank
0438 244 416

wsp.com

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Transport Engineer, New Zealand