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SMART CITIES
TRUST FUND
Asian Development Bank



How digitalization can help improve smart city capacity development across ASEAN region

John Hawke
City of Perth
Economic Development
Smart Cities Programme Manager

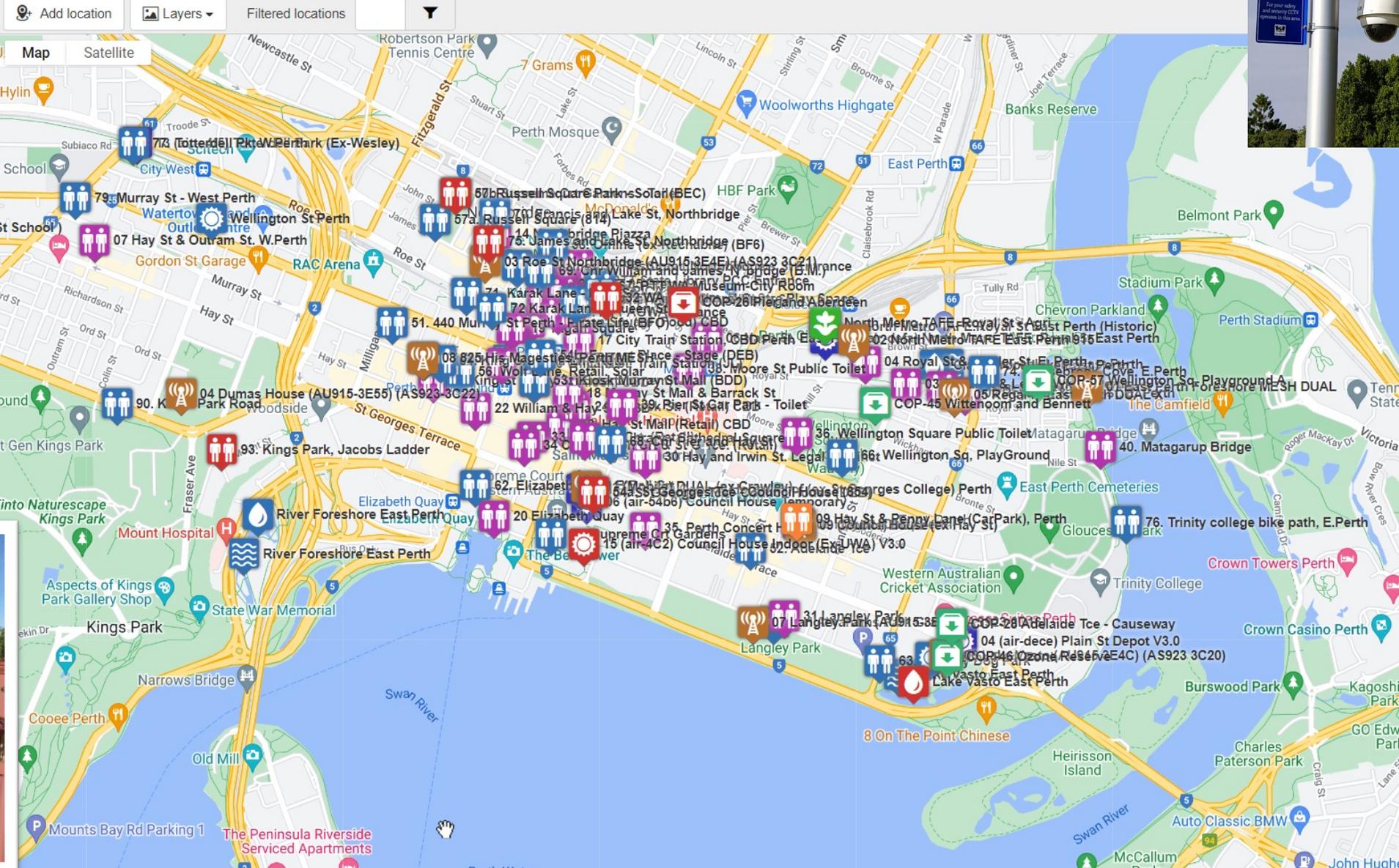


PERTH – A SMART CITY

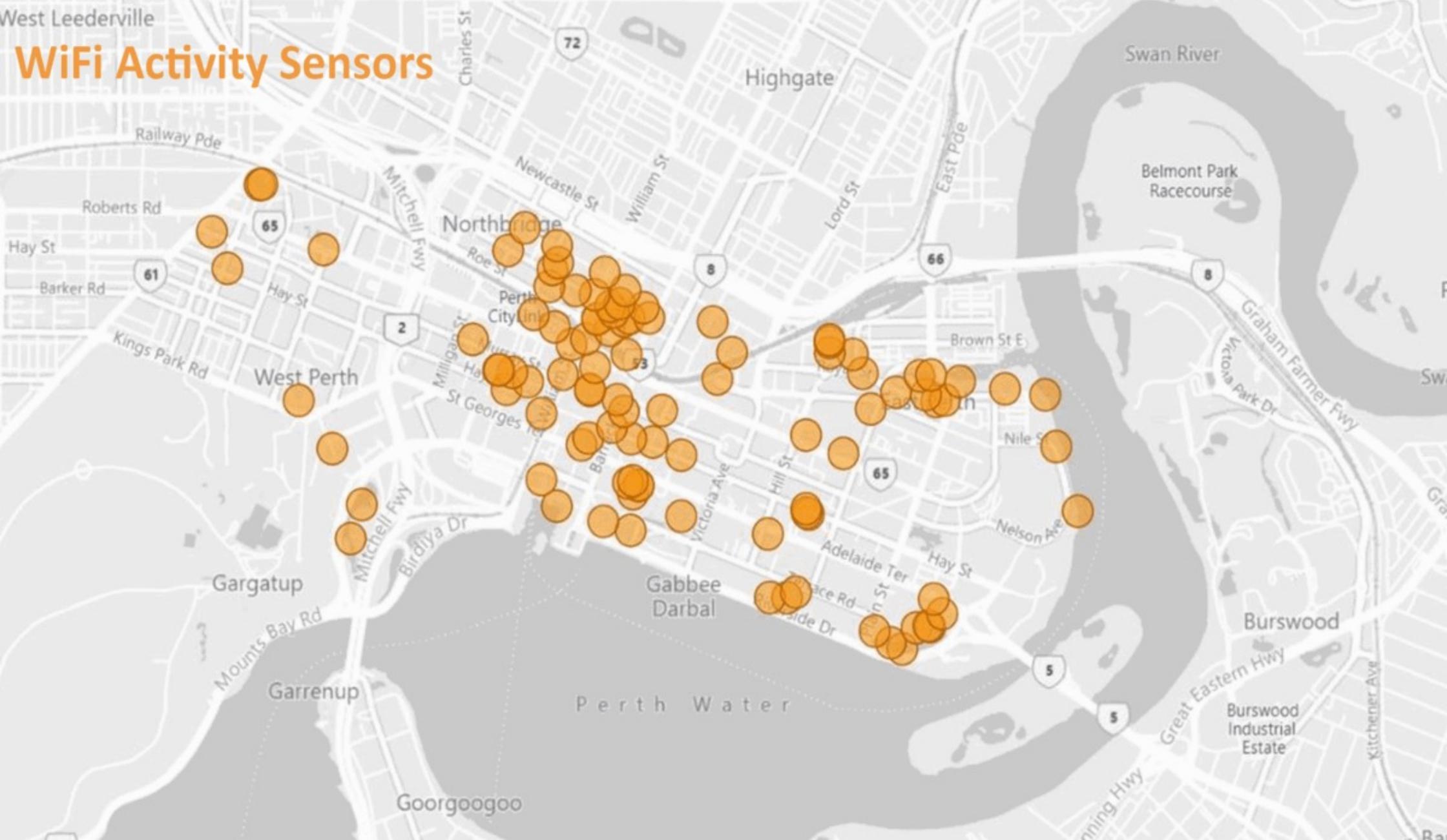


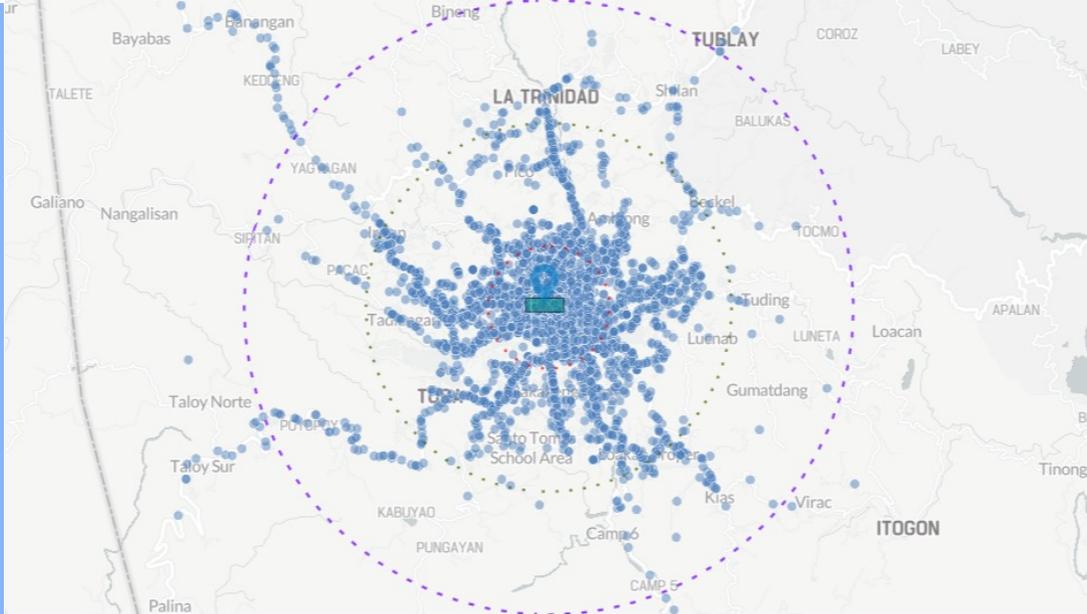
Alarms Parameters

- WORKSPACES
- Templates
- City of Perth
 - 01 Pictures and images
 - Asset Trackers
 - Environment Sensors 3
 - GPO
 - Irrigation Sensors
 - LoraWan Gateways
 - People Counters 7
 - Smart Bins 1
 - Weather Stations

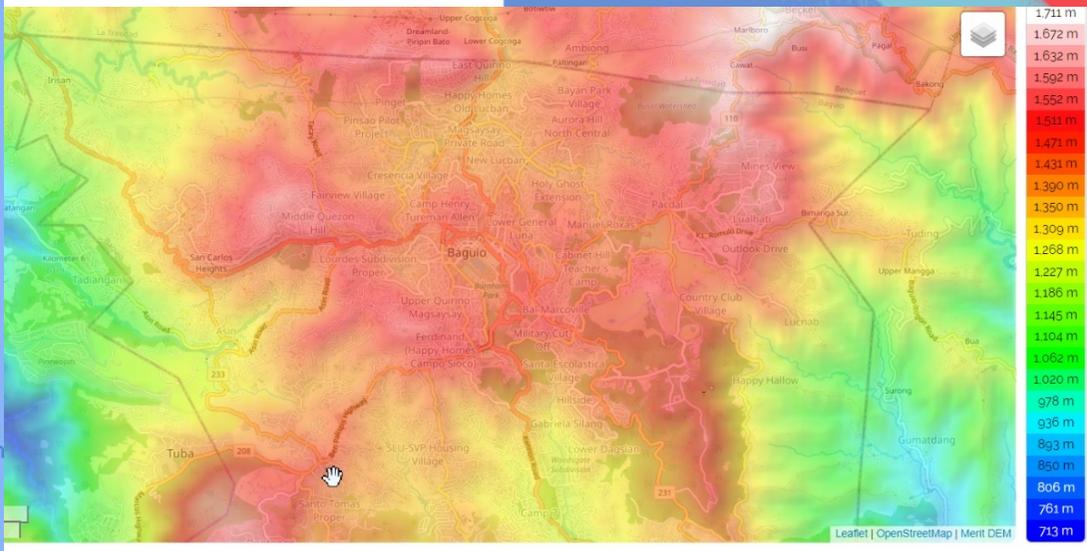


SENSORS - A SMALL SAMPLE





Baguio Population: 360,000



Baguio, Benguet, Cordillera Administrative Region, 2600, Philippines (16.41201 120.59339)

PERTH – BAGUIO COLLABORATION

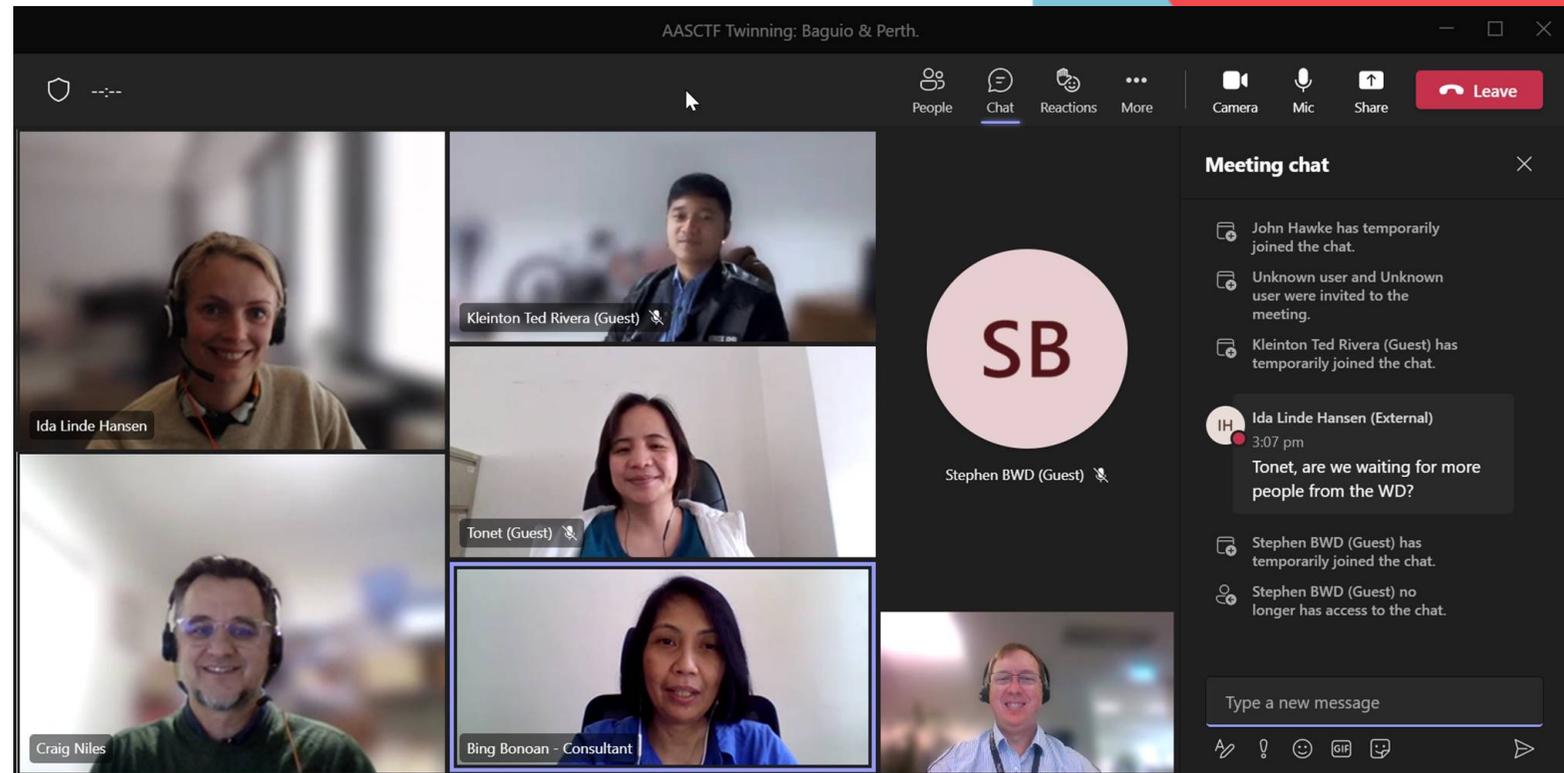


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Challenges

- Water quality
- Water supply
- Air quality
- Pedestrian crowds
- COVID
- Flood warning
- Limited Budget



LIVE DATA



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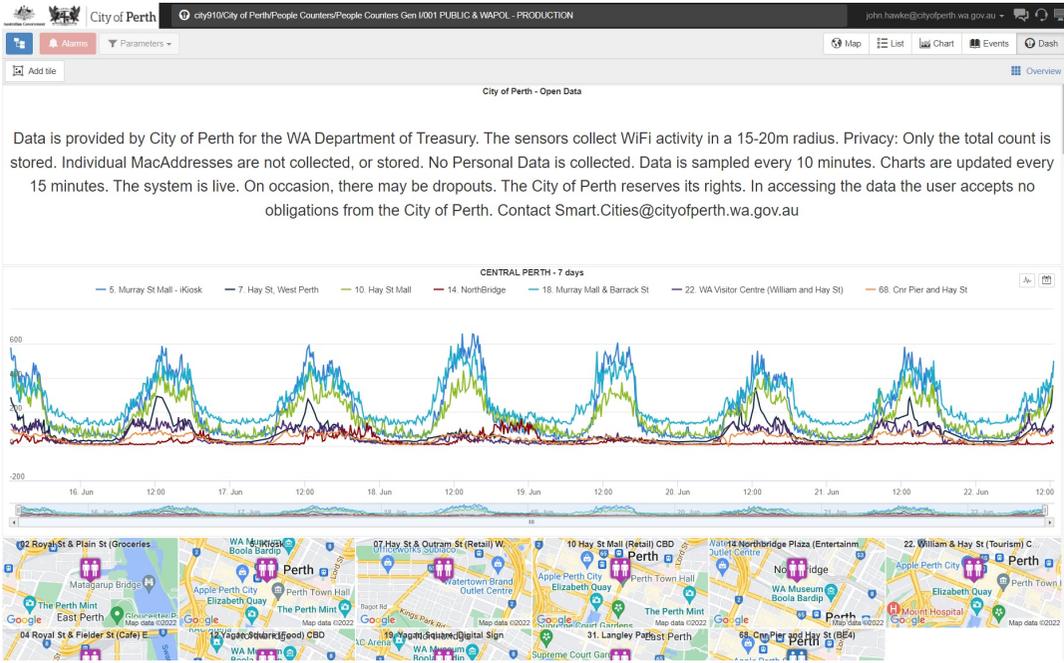
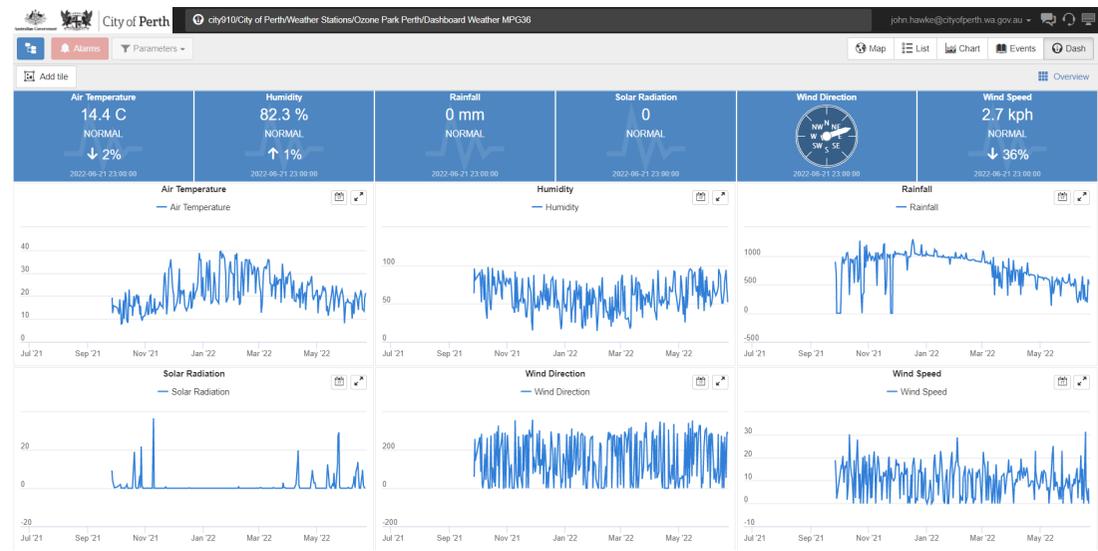


Click here for Live Weather data

<https://public.eagle.io/public/dash/1ceqxl68x1dd4pd>

Click here for Live Pedestrian data

<https://public.eagle.io/public/dash/k6t5bresbpekxa>



Strategy

1. Design

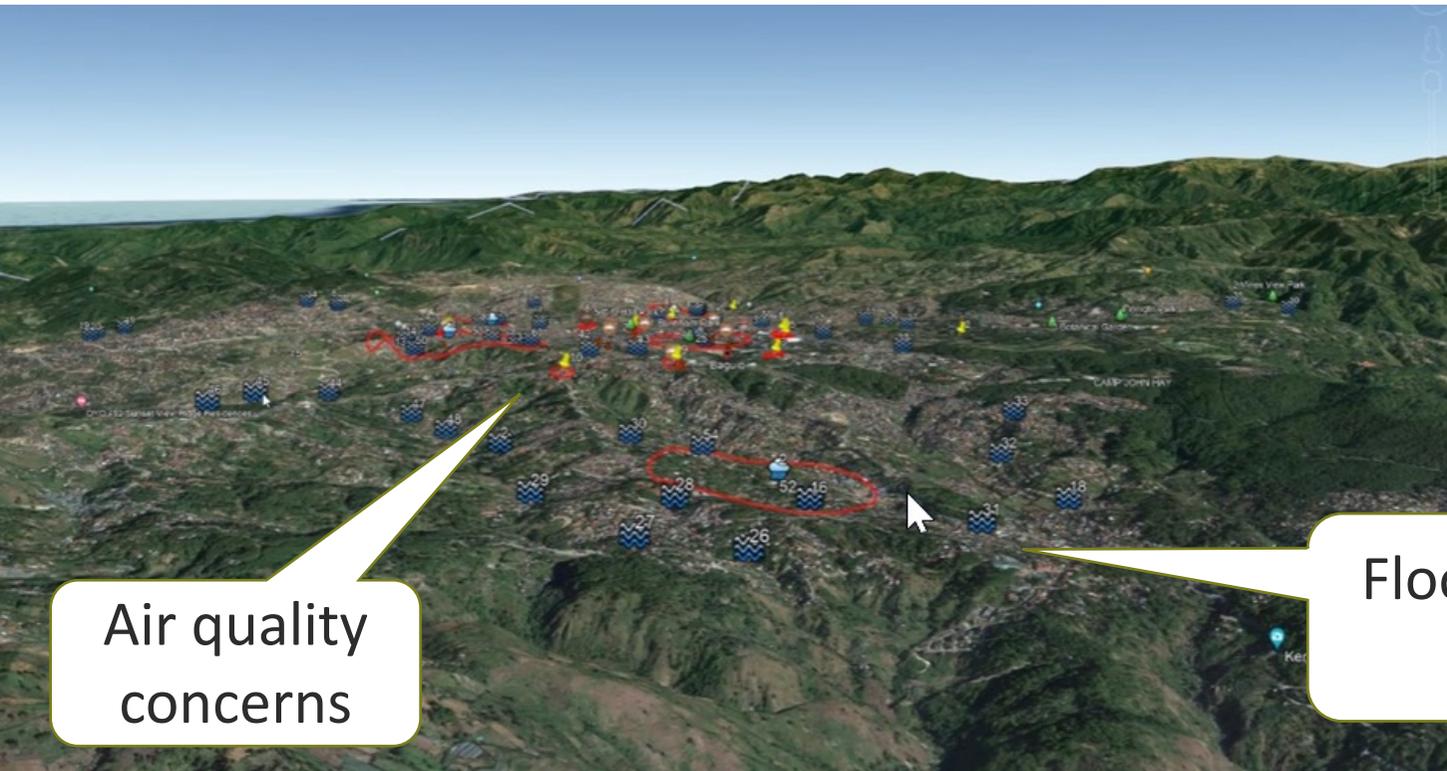
- Extensive consultation
- Leverage existing work
- Site selection

2. Build

- Use Perth's proven sensors, telemetry and suppliers.
- Test in Perth

3. Install / Operate

- Knowledge sharing
- Live data to inform decisions

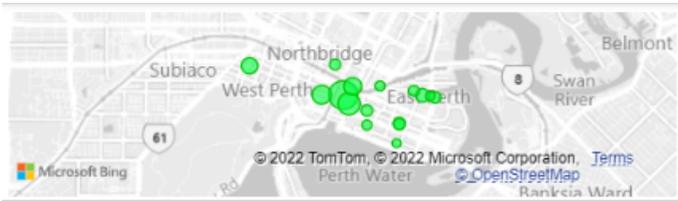


Air quality concerns

Flood risk locations identified

Perth supplied technology used today in Bagiuo water tanks

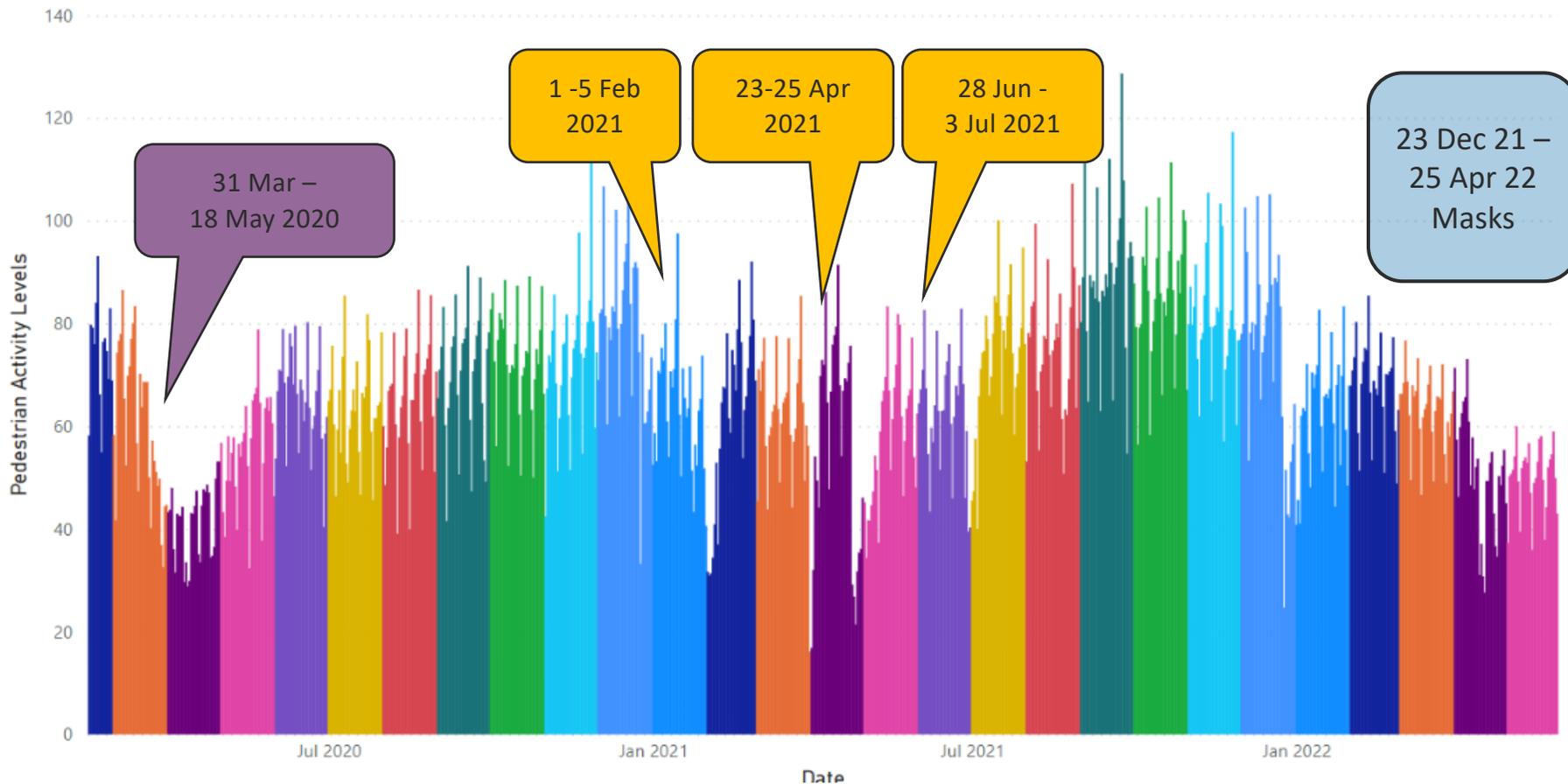
COVID IMPACTS IN PERTH



Pedestrian Activity Index. (City of Perth Smart Wifi Sensors)

Average Crowd Count by Day of Week

Month ● Jan ● Feb ● Mar ● Apr ● May ● Jun ● Jul ● Aug ● Sep ● Oct ● Nov ● Dec



2020

15 March: WA State of Emergency Declared

31 March – 18 May: Phase 1. Lockdown

12 April: Easter

27 April: Restriction eased

18 May – 6 June: Phase 2.

6 June – 27 June: Phase 3.

27 June – 18 July: Phase 4.

18 July – 14 Nov: Phase 5.

2021

29 Jan – 5 Feb: Lockdown

4 April: Easter

23 – 25 April: Lockdown

28 June – 3 July: Lockdown

24 Dec 21: Level 1 restrictions

2022

23 Dec 21 – 25 Apr 22: Masks

CITY OF  PERTH

Thank you



Additional background info for question time
if needed

Projects

Operational Projects

	PROJECT	Scale	User	Benefits
1	Open Data Portal	Live data online	Public	Data informed decisions, Collaboration
2	Smart Irrigation	Full Coverage. 106 city parks	Public	30-50% Water savings.
3	LoRa. IoT network	12 Public gateways. 300 square km.	Public	Industry 4.0. STEM
4	Understanding COVID-19	85 pedestrian activity sensors. Live data	Public, and Businesses	Prosperity. Economic insights for EM & ELT
5	Citizen Science	Environmental sensors.	Public	Liveability. Education / STEM
6	Smart Bins	52 bins. City Parks and tourist locations	Public	Health, Cleanliness, Cost savings
7	Smart Lights	Variety of locations: Malls, Streets, Park	Public	35% energy savings, Safety. CO2
8	Video Analytics	Enterprise Solution. 500+ cameras	City Operations	Community Safety, liveability

Current Projects

9	Water efficiency	46% of drinking water use monitored	City Operations	Environmental, identify water wastage
10	Electricity efficiency	81 Meters monitored	City Operations	Environmental, identify cost savings, CO2
11	Smart Bus Stops	6 locations	Public, & disabled users, City Workers & shoppers	Liveability, Diversity, Tourism
12	Pier St Solar	Largest City owned PV and Battery	City Operations	Environmental, Cost savings

SMART CITY PROJECTS

PROJECT	SCALE	STATUS	USER	BENEFIT	COMMENTS
Open Data Portal	- Live data online	Delivered	Public	Prosperous Informing prospective investment, and collaboration with industry	Sharing data builds trust and provides insights.
Smart Irrigation	- Full Coverage - 106 city parks	Delivered	City	Sustainable Saving 30-50% water and additional electricity savings	The City's most successful environmental project
LoRa IoT network	- 12 Public gateways - 300km ²	Delivered	Public	Prosperous Industry 4.0. STEM	Provision of IoT network for public use
Activity Sensors	- 85 pedestrian activity sensors - Live data	Delivered	Public Businesses	Prosperous Economic insights for EM & ELT regarding city activity	Informing decisions through data and monitoring pandemic impacts
Citizen Science	- Environmental sensors	Delivered	Public	Liveable Education / STEM	Linking Schools and Uni's
Smart Bins	- 52 bins. City Parks and tourist locations	Delivered	Public	Liveable & Prosperous Health, cleanliness, cost savings of fleet and transport	Improving service efficiency
Smart Lights	- Variety of locations: Malls, Streets, Park	Delivered	Public	Liveable & Sustainable 35% energy savings, community safety, reduced CO ₂ emissions	Saving power and improving safety. Flexibility to change light levels to suit events and conditions.
Video Analytics	- Enterprise Solution - 500+ cameras	Delivered	City	Liveable Community Safety	Using existing cameras to answer law enforcement needs. (negative media around facial recognition trial)
Water efficiency	- 46% of council building water supply monitoring	Underway	City Operations	Sustainable Identify water wastage	Finding were to save drinking water
Electricity efficiency	- 81 Meters monitored	Underway	City Operations	Sustainable Identify cost savings and reduced CO ₂ emissions	Real time data to find large \$ and CO ₂ savings
Smart Bus Stops	- 7 locations	Underway	Public	Liveable & Prosperous Improved visitor wayfinding and universal accessibility	Making transport in the city easier, better use of existing infrastructure
Pier St Solar	- Largest City owned PV and Battery	Underway	City Operations	Sustainable Cost savings and reduced CO ₂ emissions	Rolling out mature tech. Anticipated ROI 3-4 years. Approx \$33,000 pa saving

FOOTFALL ACTIVITY AND SPEND

Footfall Activity and Spending

Smart Cities staff and technology provide analysis of:

- COVID
- Events
- Activations
- Retail
- Footfall
- Vehicle traffic
- Economic output
- Employment

