Multimodal Travel Insights – Tools and Technology

Trafinz - 6 Sept 2023

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Why We Collect Transport Data

Enhance Operations

Support Strategic Decision Making

Better Inform Customers

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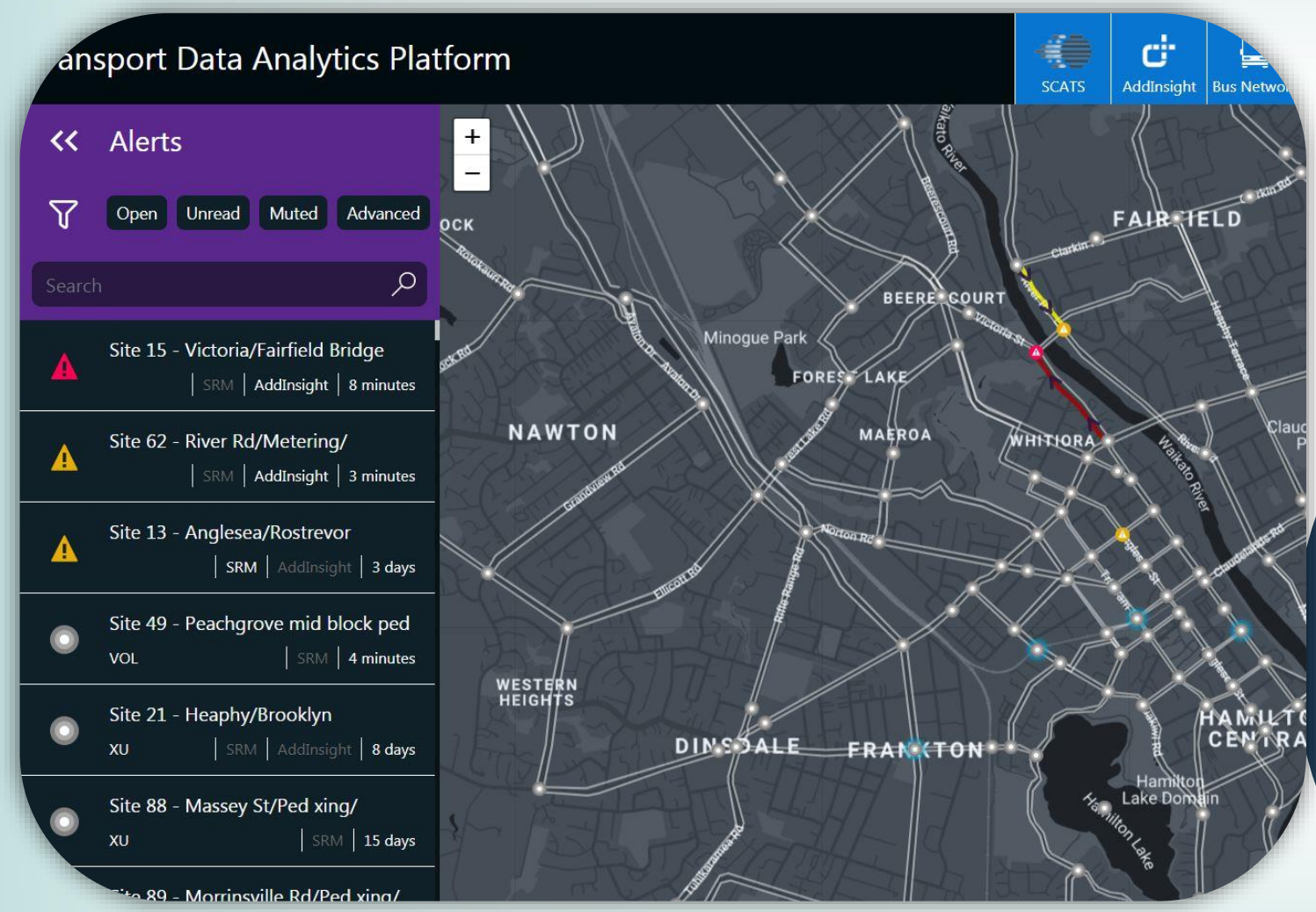
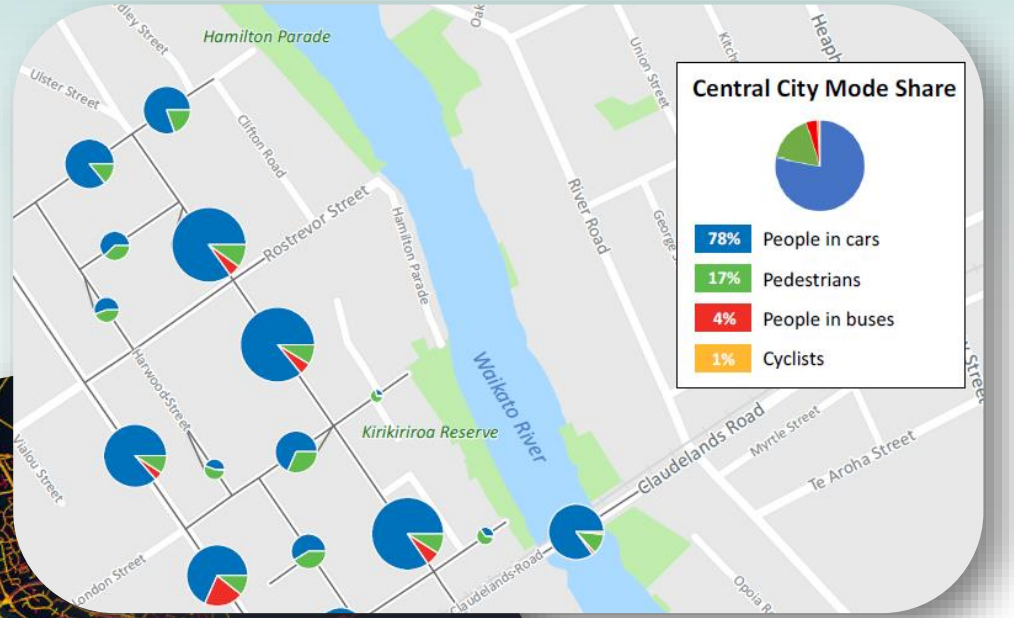


Enhance Operations

"TDAP"

- Combines many live data sources
- Identifies issues geospatially
- Replaces video wall & apps
- Mobile friendly + text alerts
- Significant cost saving
- Winner: 2022 Smart City Asia-Pacific transport award



Support Strategic Decision Making

“Townsend Tool”

We’re developing a mode-share model that uses Machine Learning to provide mode estimates on every road in the city

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Mode						
Count	bellwether, opito, BriefCam	opito, BriefCam, BE COUNTED TECHNOLOGY	opito	Waikato Regional Council	CO-LAB RATA, opito	scats, addinsight, CO-LAB RATA, opito
Pathing	near	STRAVA	Lime	Waikato Regional Council	EROAD	addinsight

"Count all at some locations, path some at all locations"

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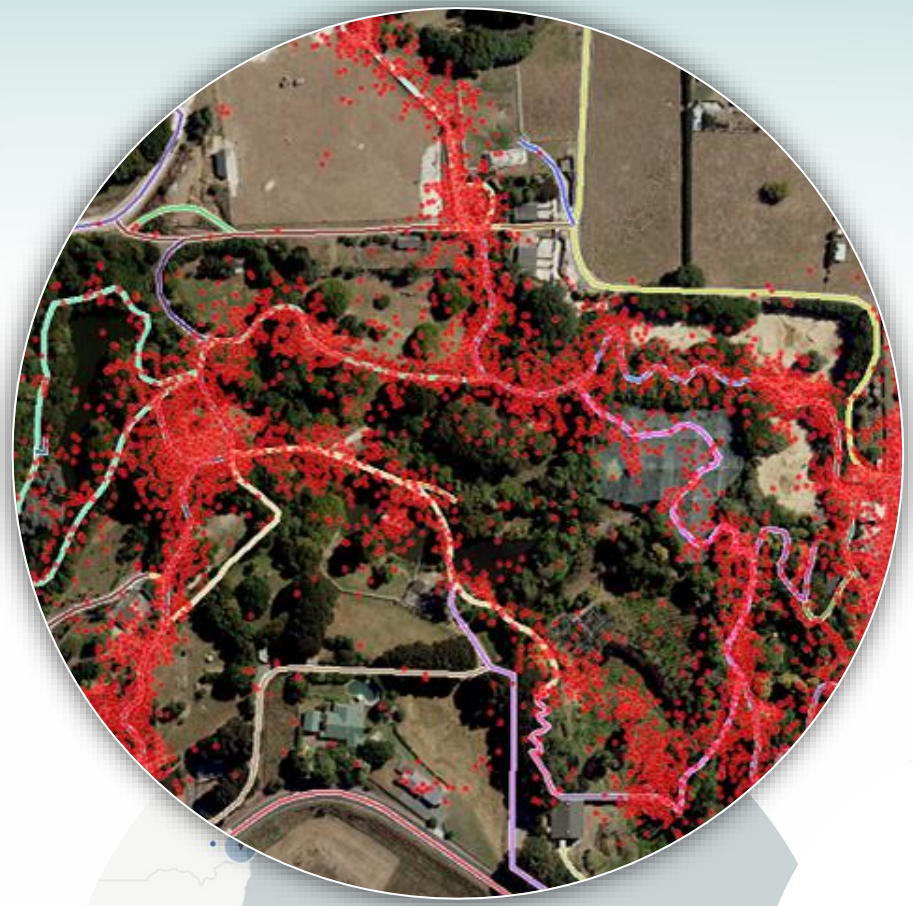

Mobile Location

Anonymous data, small sample rate but useful data for:

- Visitor number trends
- Origin they visited from
- Where they went and how many were return visitors
- Pedestrian trips

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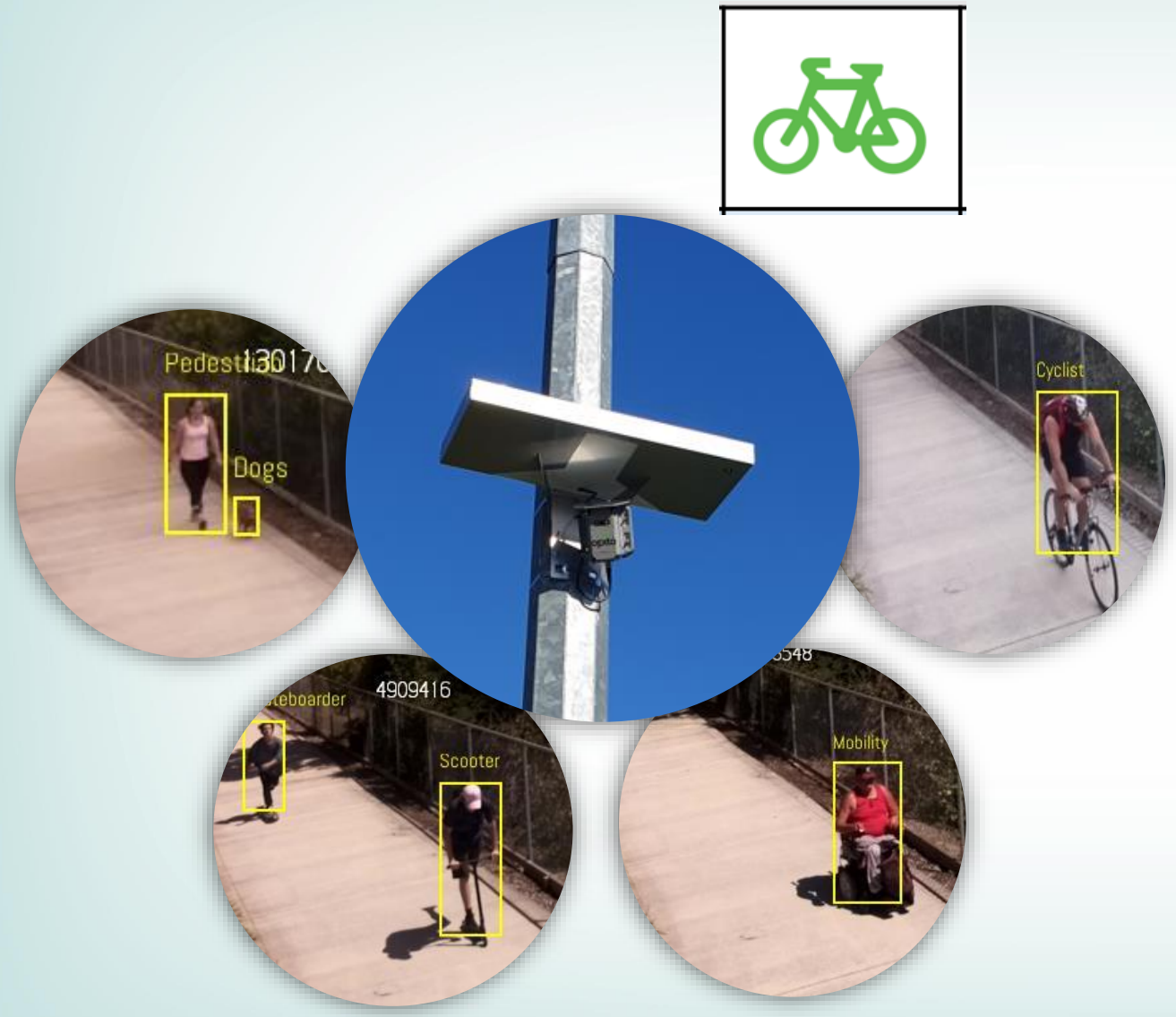

Problem: It's expensive to roll out city-wide counters

Solution: We partnered with two local tech companies (hardware & software) to build:

- solar powered
- easy to install
- accurate
- anonymously counts peds/cyclists/scooters…

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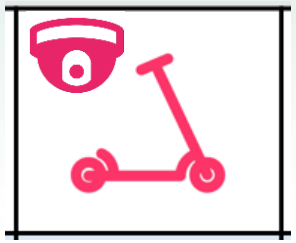
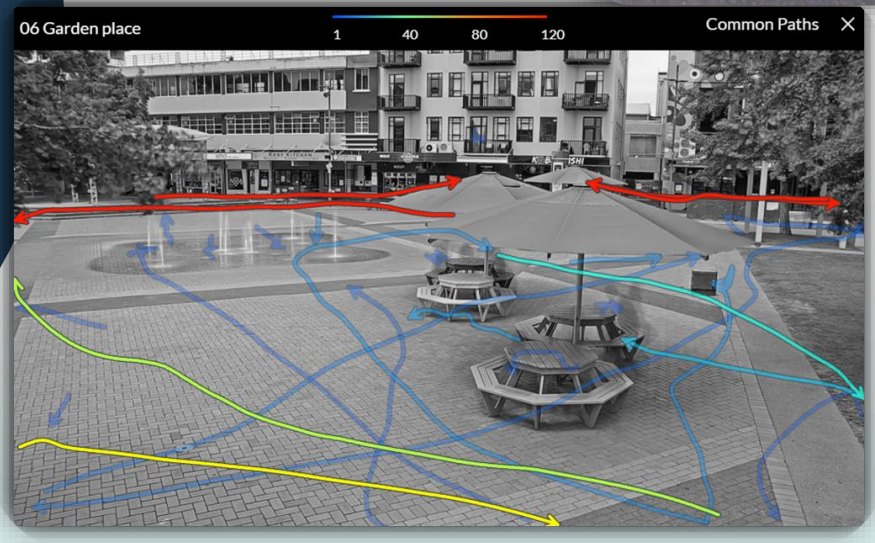


CCTV Analytics

- Make better use of existing cameras
- Common paths
- Pedestrian and cycle counts
- Dwell times



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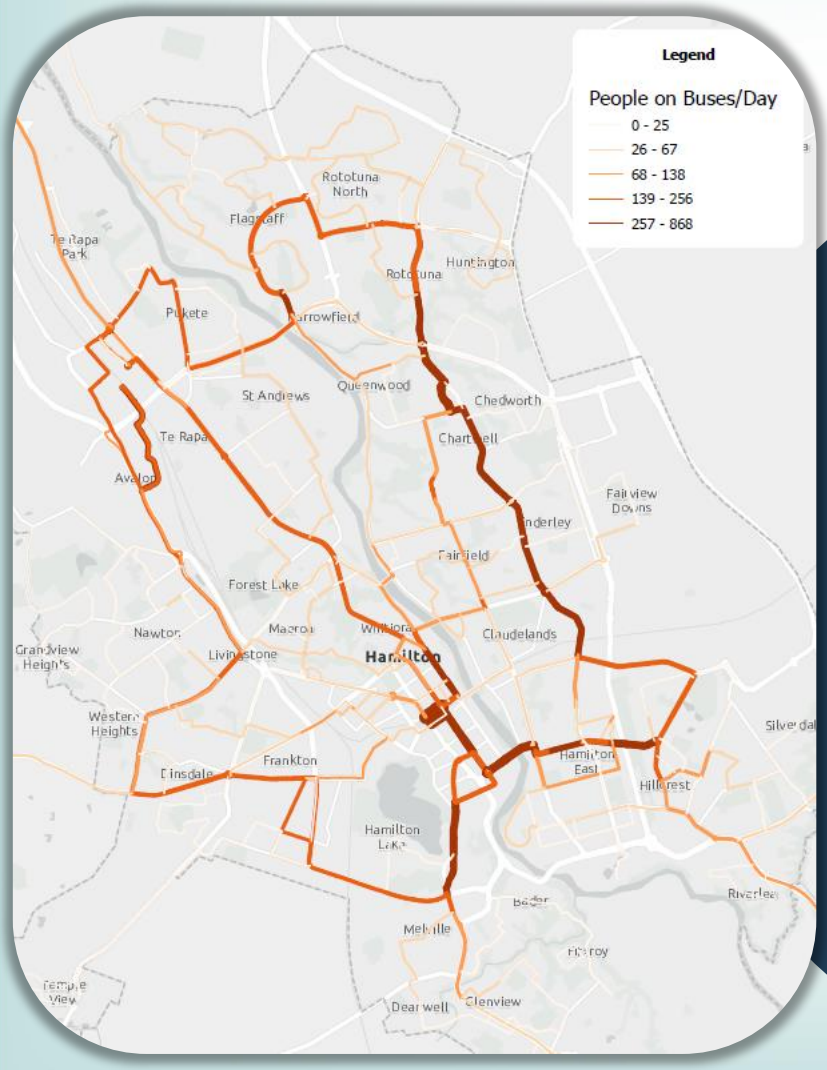
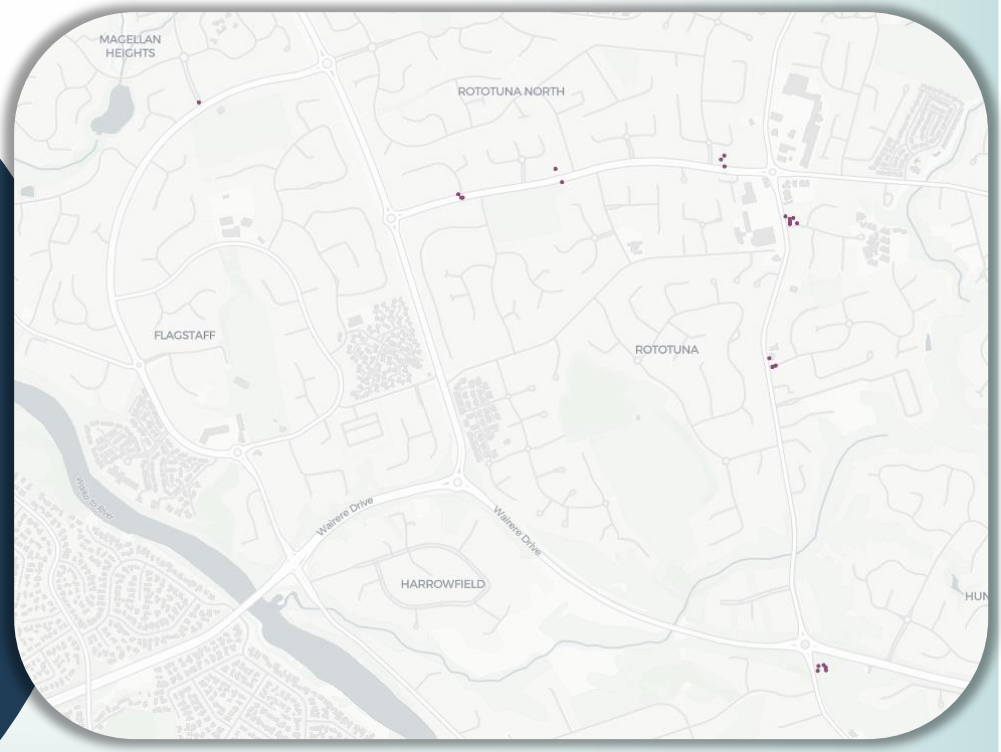


Bus users

- People (not buses) on each road
- Required mapping tag on/off data to bus routes
- Allowing for cash fares and multi-leg journeys



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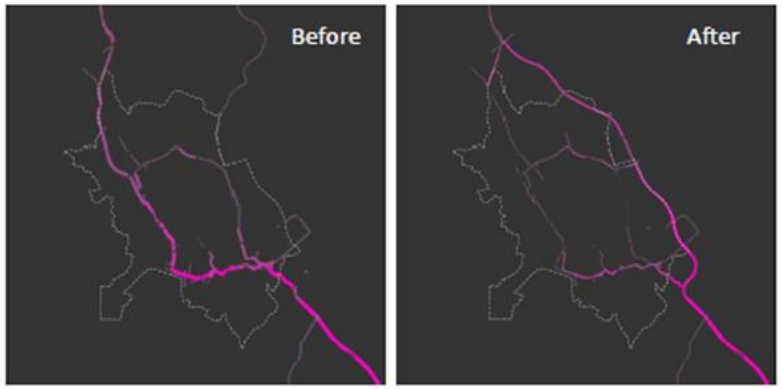
Heavy Vehicles

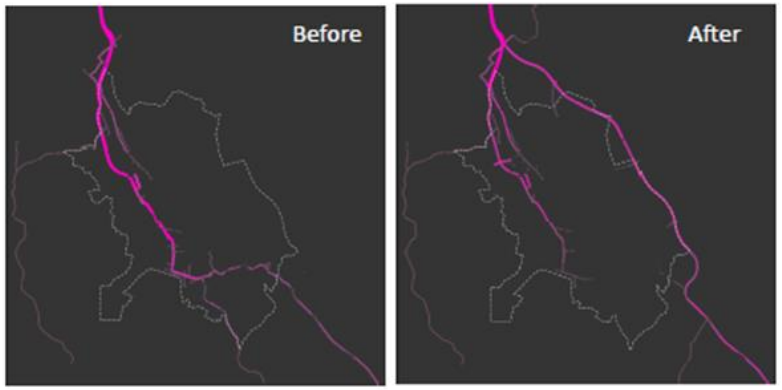
60% of heavy vehicle trips on WEx from Cambridge enter Hamilton City

80% of heavy vehicle trips on WEx from Taupiri enter Hamilton City

Northbound



Southbound



Freight

- API from EROAD (monthly updates)
- Approx 40% of all trucks
- Truck weight classes
- Routing, first stop, heavy braking, travel times
- Inter-regional insights and trends

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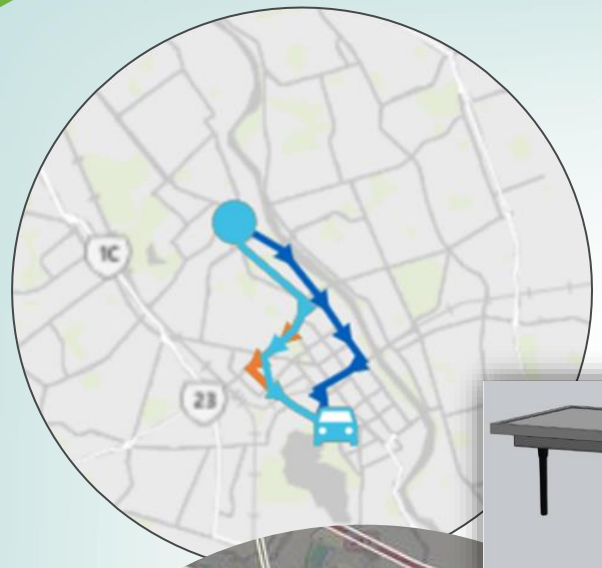

General Traffic

Bluetooth “Addinsight”

- Main data source
- Approx 25% of all traffic
- Routing, travel times, LoS

Radar and Number Plate

- Increasingly used
- Can classify using plate
- Cheap and safe (compared to pneumatic tubes)

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Data validation –> Cleaning –> Analysis –> Insights

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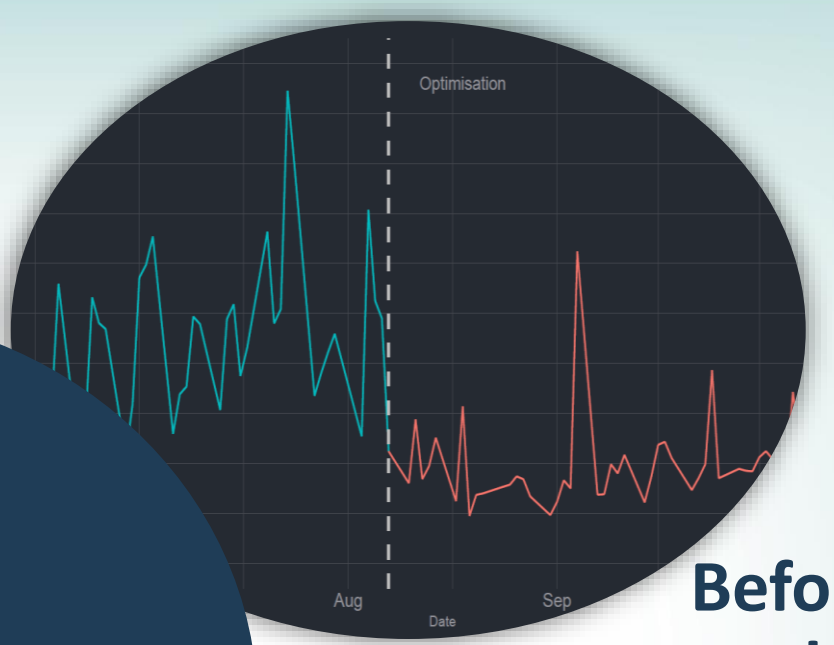
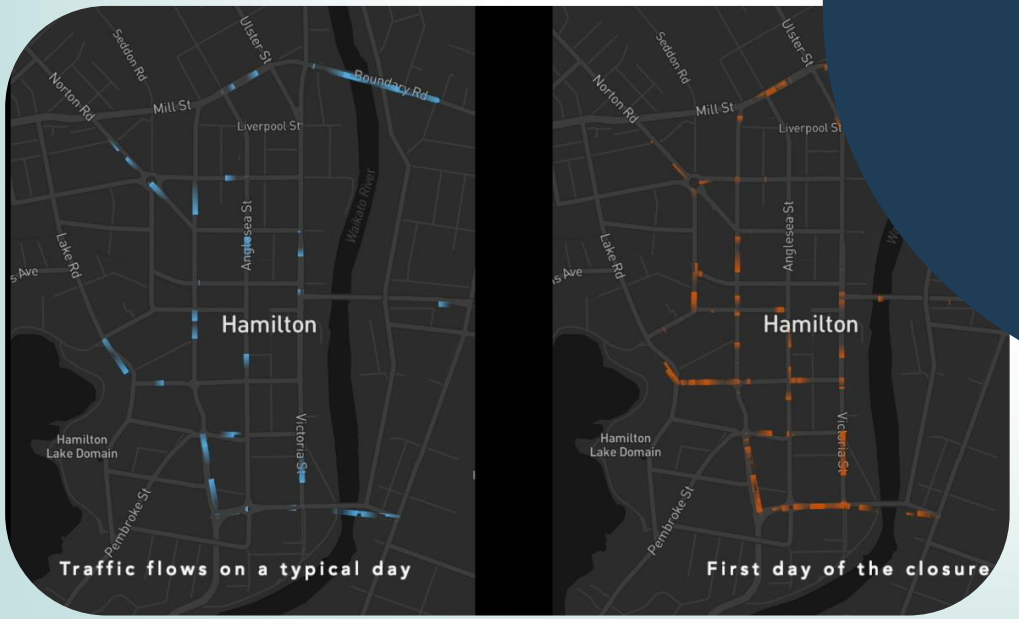
Outcomes

Work programmes

Before/after analysis



Optimisation



Business cases

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A few learnings…

- Start with outcomes. Identify the inhibitors. Find solutions.
- Hire data scientists and other smart people ☺ and let them loose.
- Councils can be risk averse. Try stuff, fail fast (PoC's are good)
- Consider how new technology can be leveraged to solve age old problems [e.g. AI/ML, CCTV analytics, crowd data]
- Challenge the status quo. Find someone else doing it better and talk to them
- Collaborate. We don't share enough with other parts of the sector. Partner with industry and learning institutes like Uni.

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Thank you

Any questions?

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