

Last Mile Freight Innovation Forum

Wednesday, March 27, 2019

Sydney Startup Hub

Agenda

- Freight and the Sydney CBD
- Transport Digital Accelerator - Last Mile Freight Showcase
- Sydney Coordination Office Programs
- Data Sharing & Insights
- Co-Design & Collaborative Innovation
- Innovation Panel

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@DataTfNSW

#LastMileFreight

Marg Prendergast

Coordinator General, Transport Coordination

Transport for NSW

A growing and ever changing city



Demands on our city



Thank you

Stephanie Salter

Director, Transport Digital Accelerator

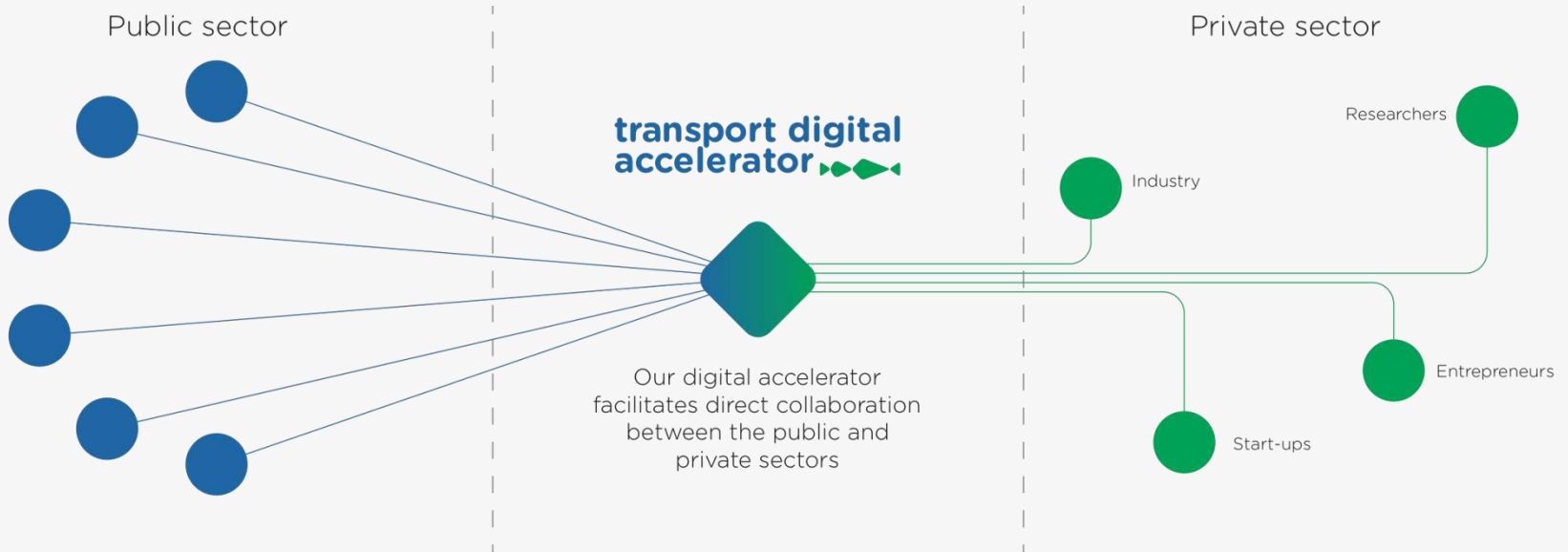
Transport for NSW

Last Mile Freight

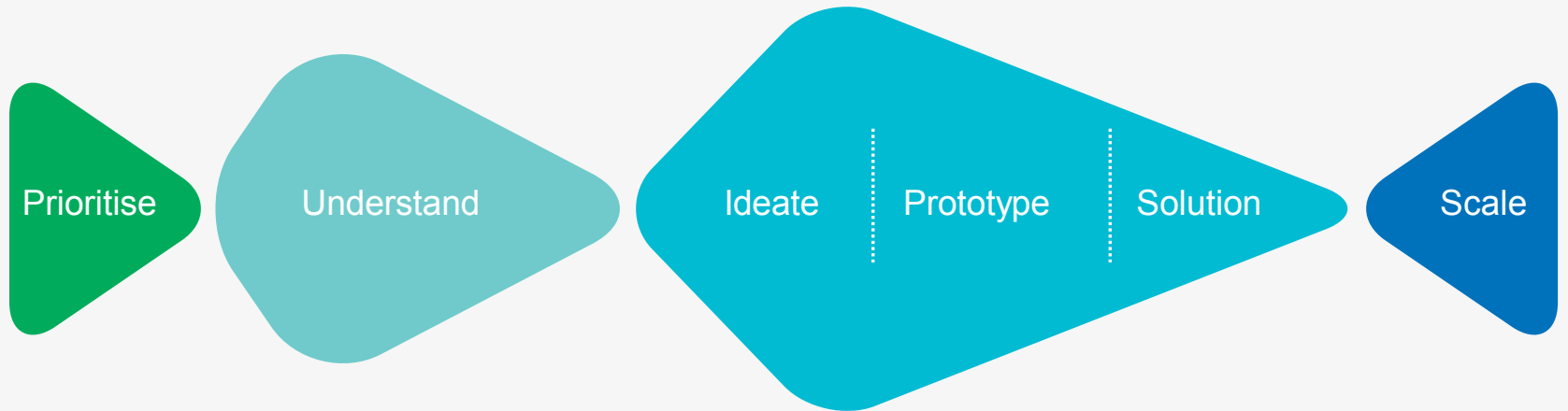
Transport Digital Accelerator

Transport Digital Accelerator

How we work



Transport Digital Accelerator Framework



Our Partners



CITY INNOVATE



Problem Space...

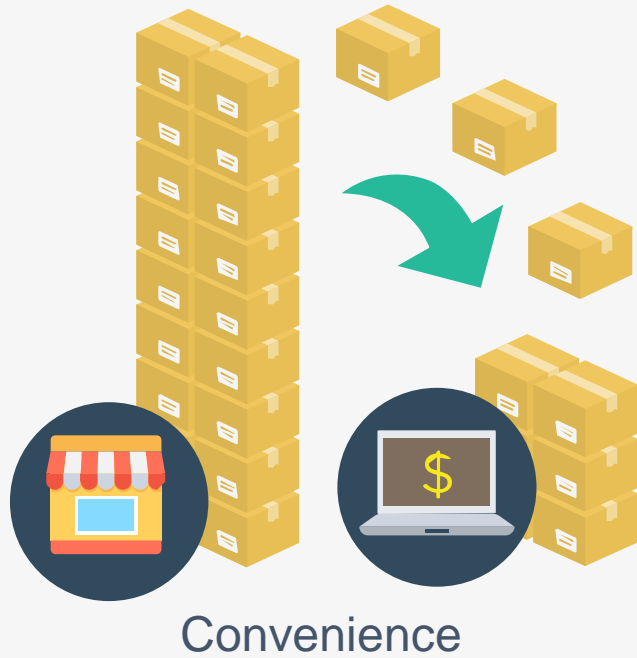
Freight congestion within the CBD

1. Sydney is growing!

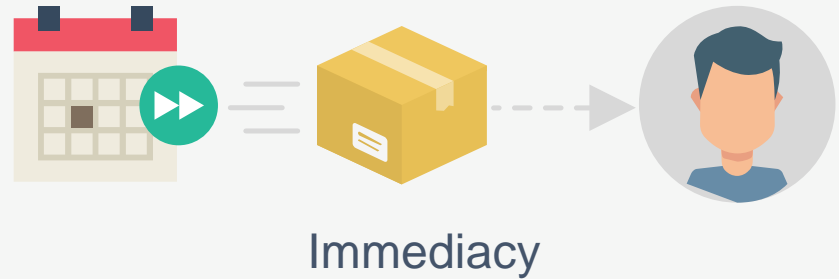
With this growth our CBD roads are stretching at the seams...

- Population set to reach 2.1m within the next 20 years
- City trips to increase by 25% by 2031





2. Convenience & immediacy are key for both B2B & B2C



3. We've got minimal control

Retail operators are using delivery speed as a competitive advantage. Oblivious to the impacts of this has to congestion

The problem space

How might we **reduce** the number of freight trips coming into the city?

So that we decrease congestion and drive improved economic activity.

Our Research

We spoke to subject matter experts



Sydney Planning • CBD Planning • Freight Strategy • Freight Transport



Transport Engineering



City Access & Transport • Transport Policy



THE UNIVERSITY OF
SYDNEY

Transport Management

We spoke to Customers



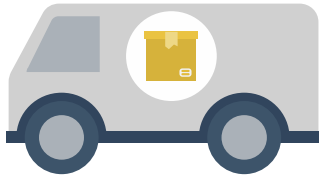
Telstra

Commonwealth Bank

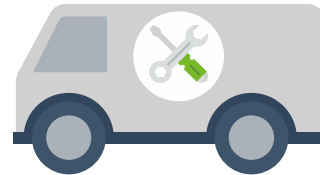


booktopia

THE ICONIC

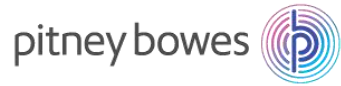


8
Delivery
Drivers



2
Service
Technicians

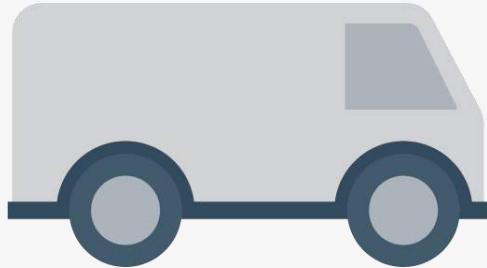
We spoke to Industry



We made site visits to observe operations



Types of Vehicles coming into Sydney CBD per day



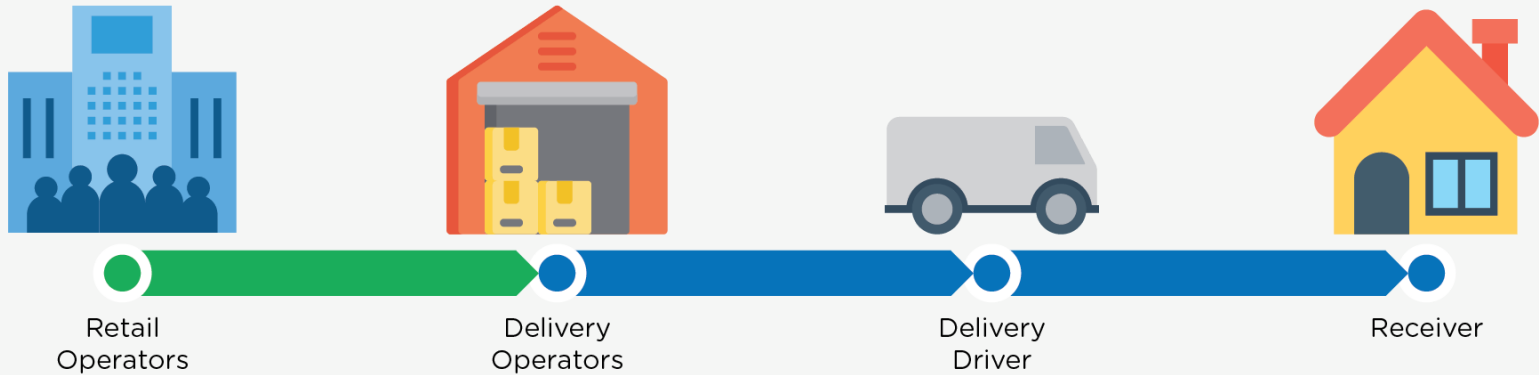
12% are light commercial vehicles (LCV)



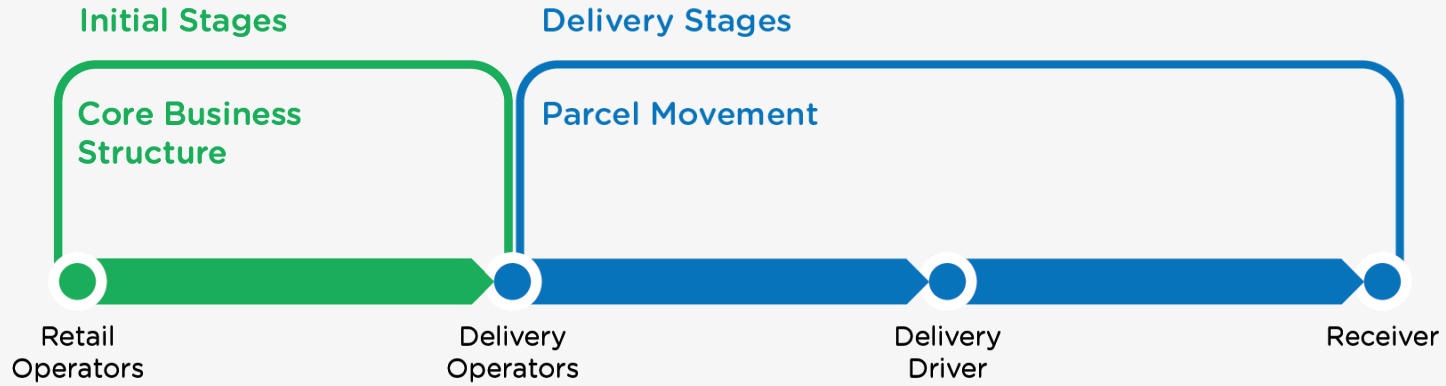
3% are heavy commercial vehicle going to the Sydney CBD per day

The Delivery Journey

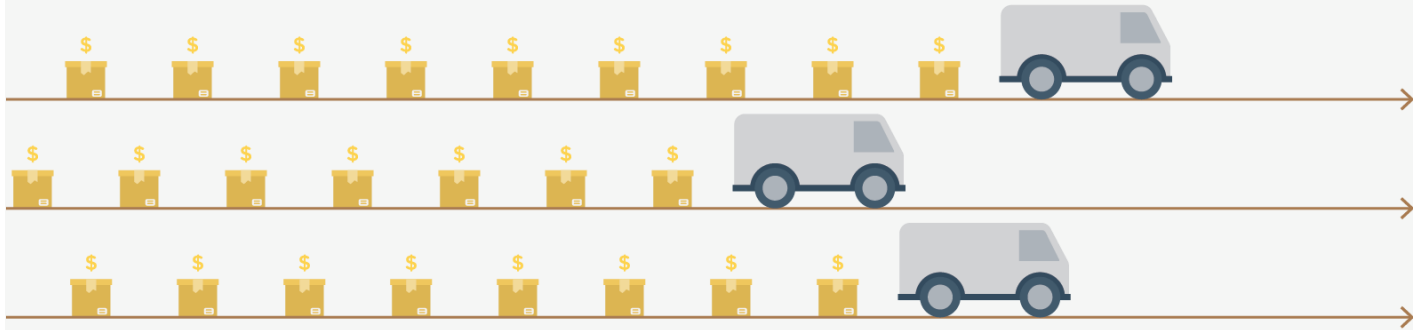
Stages of the delivery journey



Stages of the delivery journey



1. Retail operators will always prioritise their own outcomes

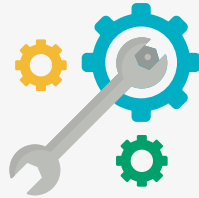


2. Optimisation is not the priority for delivery operators

1. Service Level Agreement



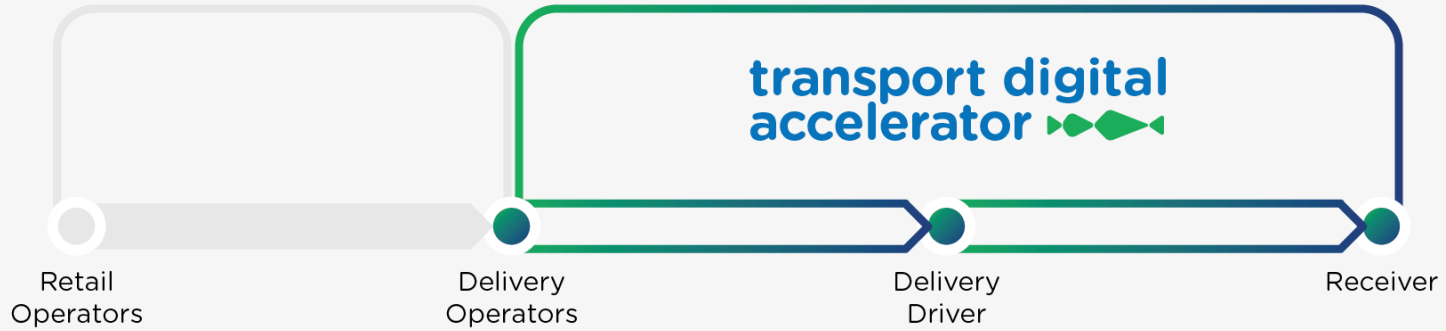
2. Delivery Driver Salary



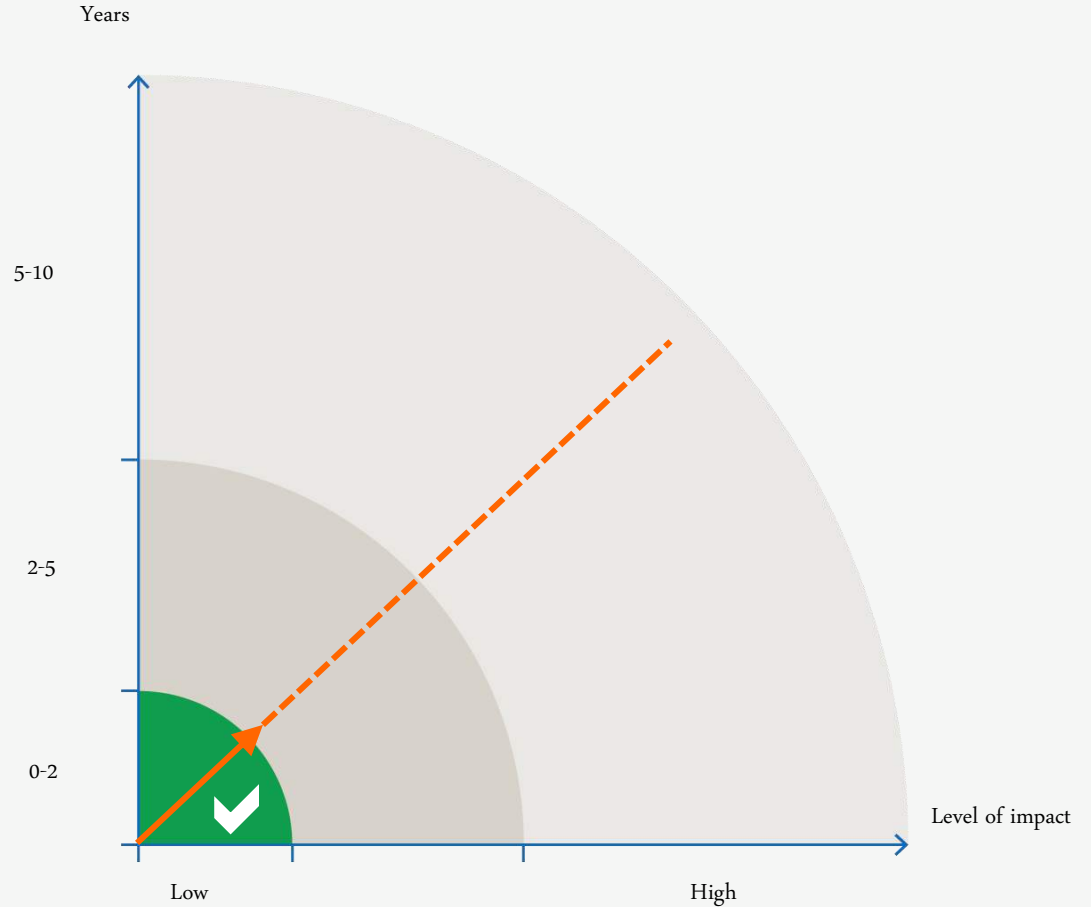
3. Fully optimised delivery run

So what does this really mean?

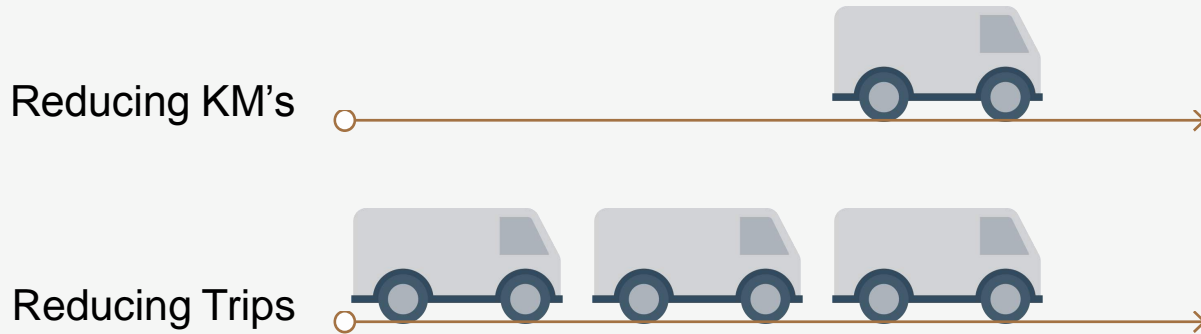
Our core focus



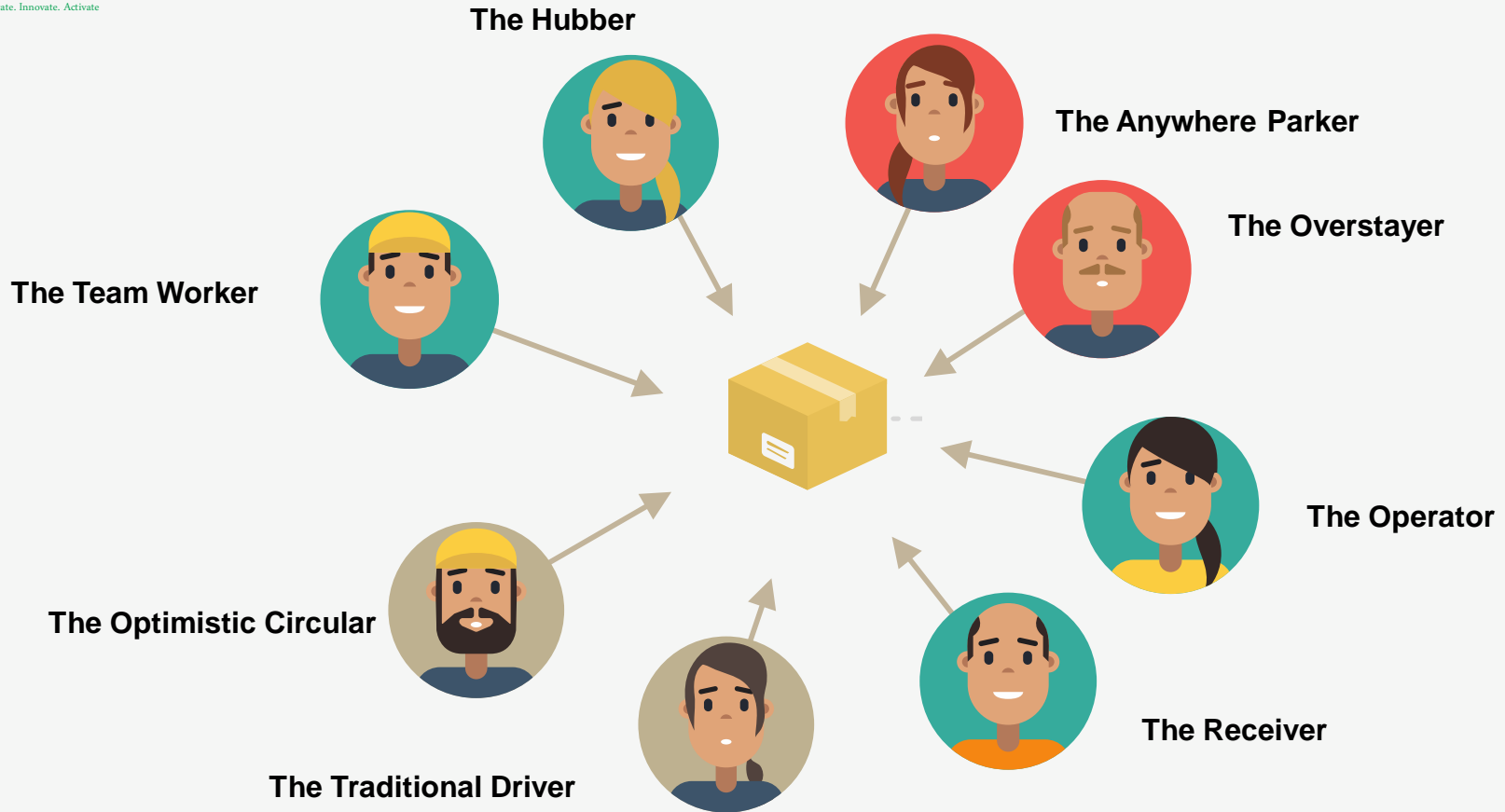
And this means we
will focus our work
on quick tactical
ideas



This realisation led us to two important insights to help reduce congestion in the city



Customer Personas



Problem Statements

How might we...

1. Create awareness of the bigger transport picture?
2. Maximise positive behaviours?
3. Make deliveries more efficient?
4. Encourage greater end to end collaboration?

1. Creating awareness of the bigger transport picture

Opportunities for government and delivery operators

How might we build a system that allows the government to monitor how freight is delivered in the CBD?

So that we have a deeper understanding of how to improve freight movements going forward for government and delivery operators.

Concept Exploration

Smart Loading Zones

A system that supports the correct use of loading zones, provides a view on how freight is delivered in the city and creates a case for change.

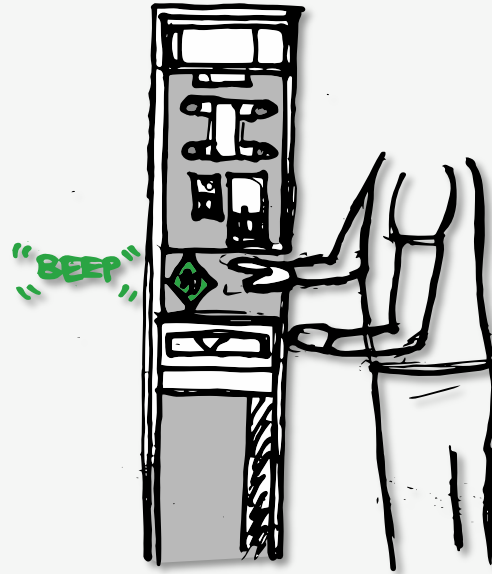
Driver registers their
vehicle online in order
to obtain access to the
new loading zone
system



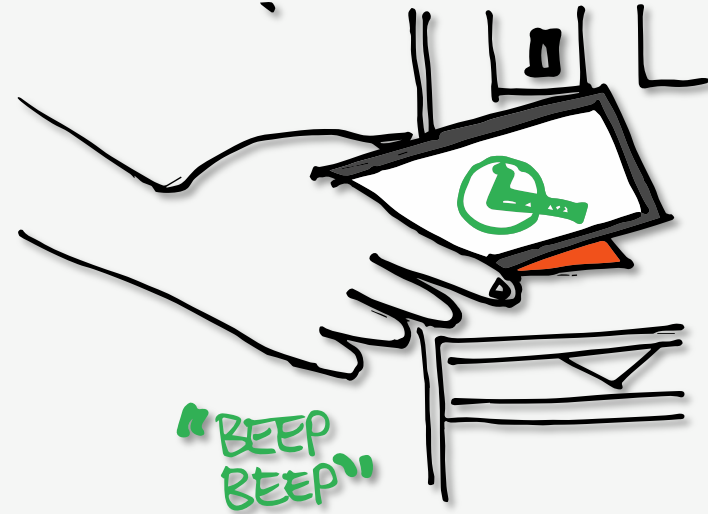
Driver is supplied with
DriverID and RFID
sticker

Driver taps on to activate
free loading zone time

(Parking sensors also
record time spent)



Driver proceeds to deliver
parcels



Driver on completion
taps off to record exit

Smart Loading Zones

Outcomes

- Build an evidence base of freight data
- Parking compliance improvement
- Change the bad driver behaviours
- Build a case for new changes
 - Types of parking spaces
 - Understand the true delivery cost

2. Maximising positive behaviours

Opportunities for delivery drivers

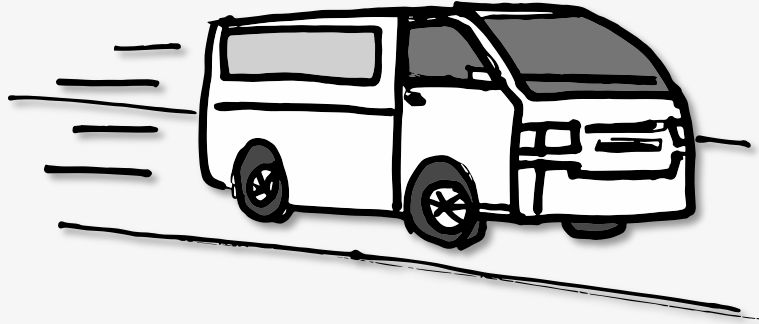
How might we trial delivery spaces that operate in line with the needs of delivery operators and delivery drivers of light commercial vehicles?

So that we continue to create positive behaviours that foster improved and efficient freight deliveries.

Concept Exploration

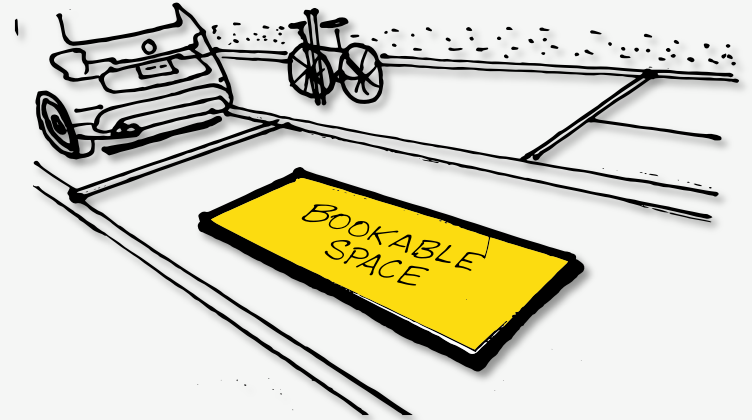
Dedicated Delivery Spaces

Allocating out spaces for delivery drivers to encourage different delivery behaviours.



A delivery run commences

A delivery driver notices the empty “bookable space”.
A spot that will support their different (but beneficial) delivery needs



Then setting up and running a
street side delivery van hub



So that van drivers can
deliver more, not risk a
fine and reduce the
kilometres they drive in
the city

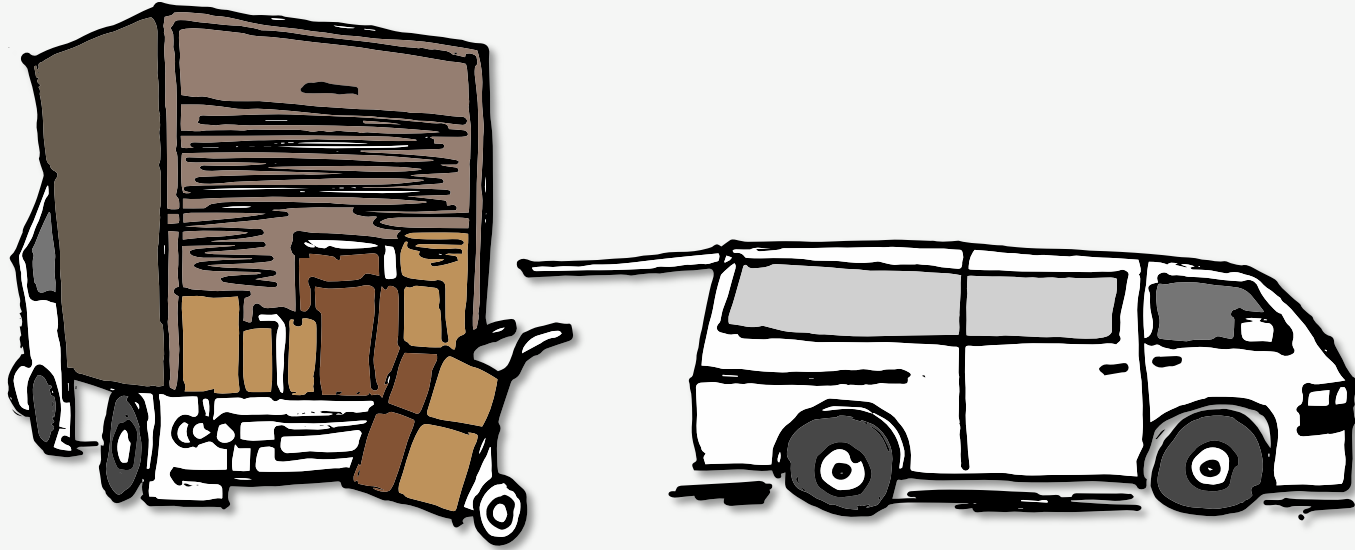


Also working with new infrastructure to create handover and consolidation spots so that deliveries can be reallocated

And deliveries can be matched to the most suitable transport method for the last distance in the city



And enable van package top ups so that these behaviours can keep going.



Dedicated Delivery Spaces

Outcomes

- Reduced km's driven
- Trial is run to build evidence/data
- Build a case for supporting them further
- Understand the value these spaces present and charge accordingly

3. Making deliveries more efficient

Opportunities for delivery operators and drivers

How might we improve the visibility of delivery space usage?

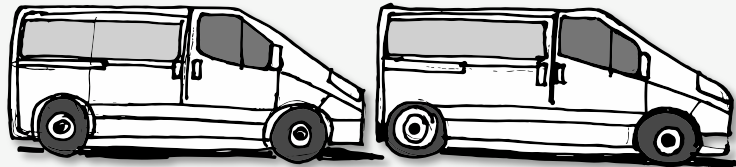
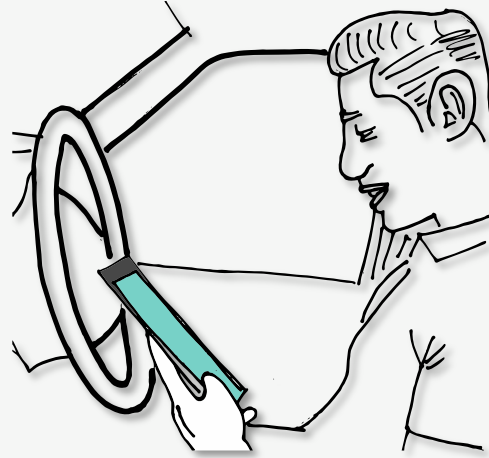
So that we make it easier for drivers to obtain the ideal park for their needs.

Concept Exploration

Searchable Loading Zones

Loading zone availability data is made accessible for use in a searchable map.

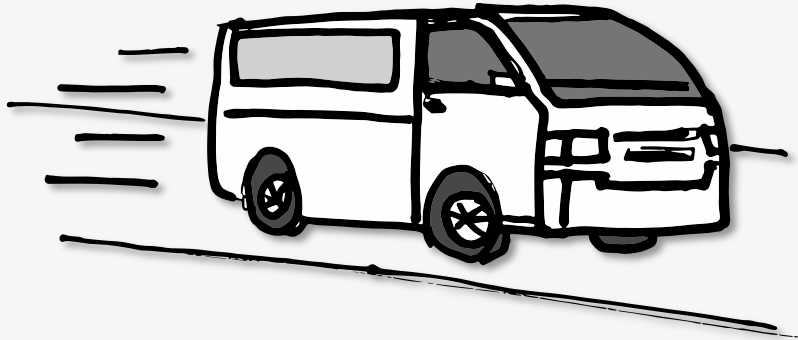
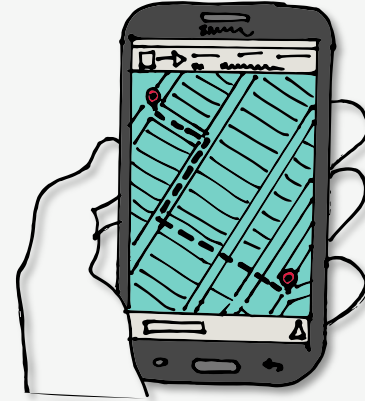
Delivery driver logs on to app while parked before making their delivery run



App returns data on used and unused parking spaces

A vacant spot is located and
the app directs the driver to the
vacant spot by GPS mapping

(via the inbuilt sensors
providing a data feed)



A delivery run
commences

Searchable Loading Zones

Outcomes

- Reduced km's driven
- Improved situation for drivers
- Paint a picture of how the system is currently working
 - Is it that bad?

4. Greater end to end collaboration

Opportunities for all participants

How might we help retailers, drivers and receivers to start exhibiting more collaborative methods of delivery?

So that we make their inbound and outbound freight trips cause less CBD congestion.

Concept Exploration

Open Shared Delivery Platform

An open digital platform linked to a network of delivery banks that are multipurpose drop off and pick up centres for any participant in the CBD parcel delivery journey.



The delivery banks are multipurpose drop off or pick up centres for any participant in the parcel delivery process

Open Shared Delivery Platform

Outcomes

- Positive change in behaviours
- Reduced km's driven
- Positive change in the delivery experience
- Everyone playing their part

Thanks!

Michael Stokoe

Associate Director Freight & Servicing, Sydney Coordination Office

Transport for NSW

What does the Last Mile Freight task look like?

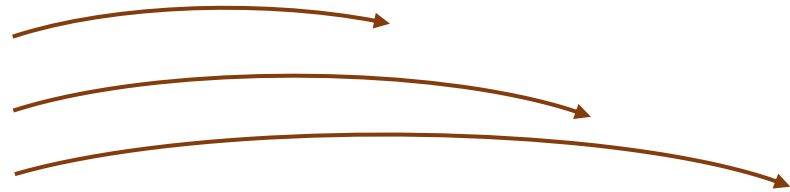


TfNSWs Sydney Coordination Office: Approach to Freight and Servicing Management

Aims and horizons

2015 Transformation period  2030

1. Maintain productivity and sustainability throughout the transformation
2. Promote efficient freight and servicing practices to create a lasting legacy
3. Accommodate future growth



Stakeholders perspectives

Economic

Commercial

Social

Environmental

Sydney Coordination Office Key Freight and Servicing Actions:

- Maximise the productivity of kerbside (maximise provision and its utilisation, including overnight)
- Communication, “Give us information, give us time to plan” Industry forums, early 2015
- Encourage activity off streets and into loading docks (short term and long term)
- Encouraging and facilitating Innovation

Key Urban Constraints for Freight and Servicing

- City of Sydney's kerbside hierarchy gives a high priority to freight and servicing
- Freight and servicing demands impact on the transport network:
 - Limited and finite kerbside space
 - Loading dock provision
 - Non-discretionary, time sensitive service orientated transport tasks competing for space
- In a city undergoing large scale transformation and growth there is:
 - Extra construction traffic
 - Space taken up by work zones

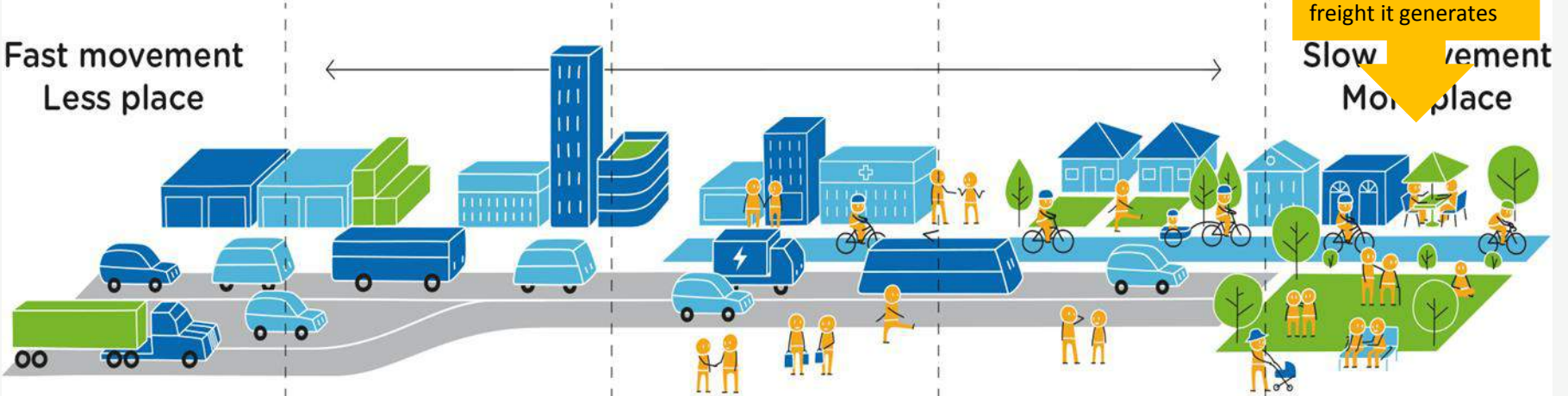


TfNSW: Balancing Movement with Place

Consumers!
The more success a place the more freight it generates

Fast movement
Less place

Slow movement
More place



Motorways

Movement Corridors

Living Streets

Local Streets

Places for People

<p>OPERATING HERE:</p> <ul style="list-style-type: none"> • HPVs • Heavy rail • Shipping 	<p>LOCATED HERE:</p> <ul style="list-style-type: none"> • DCs/warehouse <p>OPERATING HERE:</p> <ul style="list-style-type: none"> • Electric/autonomous delivery trucks (large) • Rail shuttles 	<p>LOCATED HERE:</p> <ul style="list-style-type: none"> • UCCs <p>OPERATING HERE:</p> <ul style="list-style-type: none"> • Co-modal solutions (UCC to dock) • Electric/autonomous delivery trucks (medium/large) • Co-modal vehicles 	<p>LOCATED HERE:</p> <ul style="list-style-type: none"> • Precinct dock • Commercial/retail centres <p>OPERATING HERE:</p> <ul style="list-style-type: none"> • Electric/autonomous vans • Electric/autonomous delivery trucks (small) 	<p>LOCATED HERE:</p> <ul style="list-style-type: none"> • Lockers • Last mile collection points • Homes/shops <p>OPERATING HERE:</p> <ul style="list-style-type: none"> • Small electric vehicles • Bicycle/walking modes • Drones/autonomous delivery "bots"
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Example from London West end:
Reduction of 144 daily waste movements to 9

International Examples: Innovative logistics approaches responding to need

Micro Distribution Strategies DPD, London

All electric last mile delivery depot



- 2,000 parcel p/d capacity site in Westminster
- Paying market rent for 500m² to service SW1
- Big investment in electric vehicle charging capability
- Electric vehicles to Feed depot and also outbound
- Searching for Micro depot sites in Bayswater, Covent Garden, South Kensington, Marylebone, Barbican and Bank

<https://motortransport.co.uk/blog/2018/10/17/dpd-opens-its-first-all-electric-last-mile-delivery-site/>

E-Commerce and the Growth in Freight Activity

The implications of growth in Australia:

Amazon tipped to win \$28b local market share **through speed**, not price (*SMH, October 19th 2018*).

Should we expect a significant increase in white van traffic from Amazon AND its competitors?

Alternate approaches elsewhere in the world (i.e. New York, USA)

- Development of a warehouse facility on the fifth floor of a Manhattan commercial tower
- Use of the subway to deliver packages to customers.
- <https://www.fastcompany.com/3046423/for-one-hour-delivery-in-nyc-amazon-takes-the-subway>
- A locker network throughout the city at convenient “lifestyle” locations



Sydney Examples: Innovative logistics approaches responding to need

World Class Facilities Design - Barangaroo



To get this...



You need this....10,000 times a month

Current Innovations that can result in less CBD traffic



New developments in high land-value areas include a proposal for **off site freight consolidation** = less traffic to the CBD



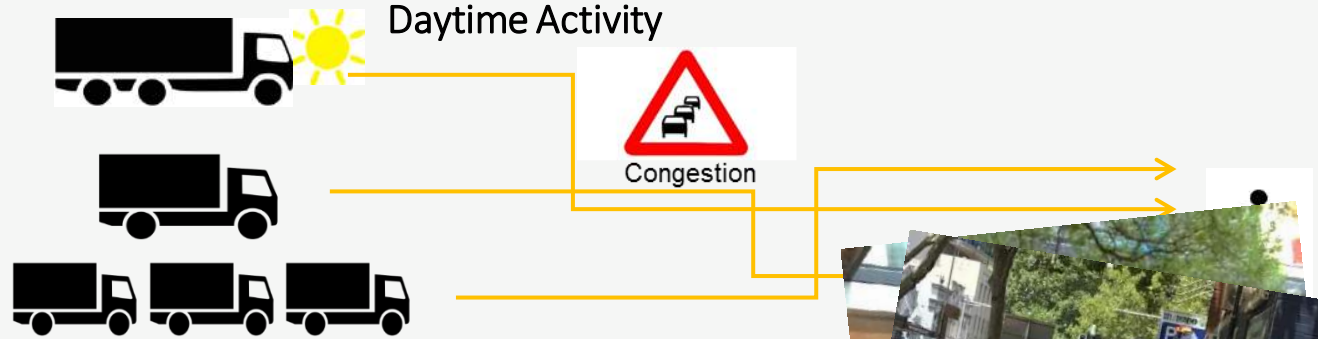
Mixed use multi storey warehouse and commercial office **developments** (Mascot).




Use of “logistics space” within the city to **develop precinct approaches**. = less traffic to the CBD and better places

Rethinking How to Service the Customers Needs

Current status quo:



Future Scenario:
Key use of urban
logistics spaces
efficient activity

 Efficient Metropolitan
Movements

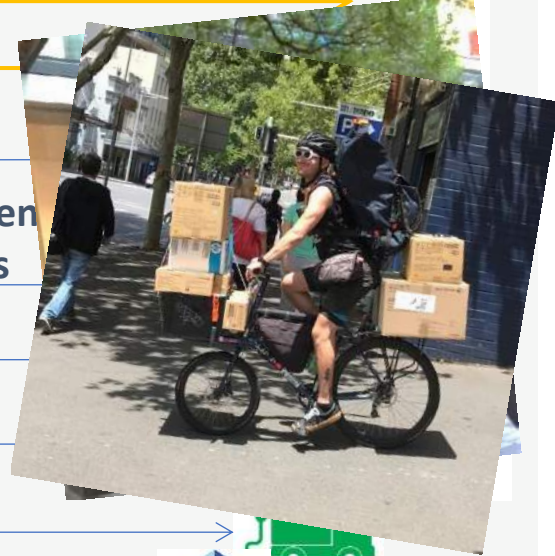


Road network
Movements

Urban
Logistics and
Servicing
space

 Space Efficient
Movements

Precinct fine
grain networks/
urban networks



Last Mile Freight Innovation – why is it needed

- A market need
- Pressure and conditions to encourage change
- Consideration of what the future looks like
- Adopting an innovative perspective – “we want a better outcome”
- Equipment that can do the job
- Processes and Systems that can make it happen efficiently
- Building partnerships between relevant stakeholders and players

Thank you

Matt Stockwell

Freight Strategy Advisor, Freight Strategy and Planning
Transport for NSW

Freight Data

A plan for action

Future Transport Freight movement efficiency measures for:

- Volume
- Cost
- Network efficiency

transport.nsw.gov.au/freight-hub

NSW Freight and Ports Plan 2018-2023

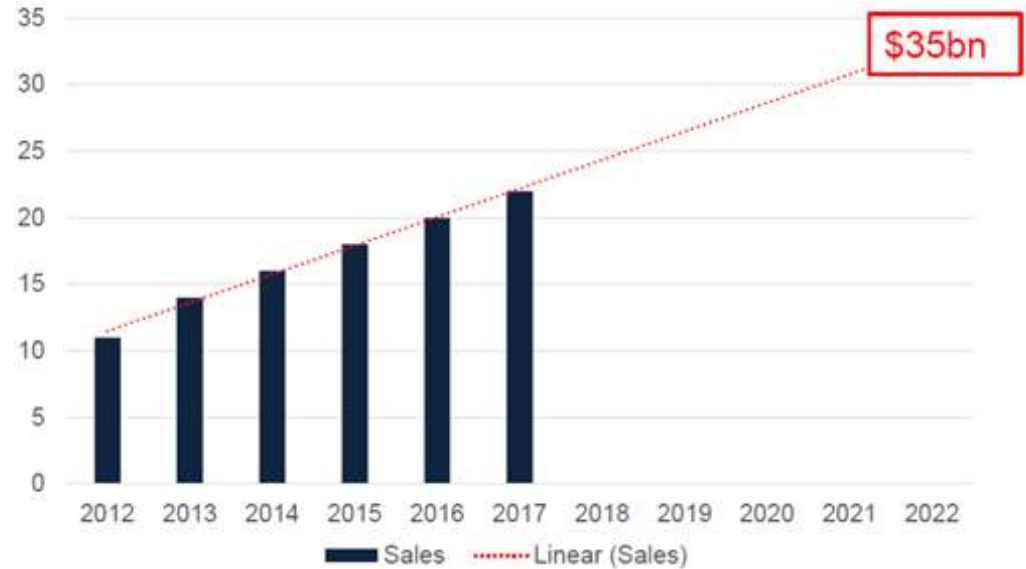


‘TfNSW’s Freight Hub stands out as a leading example of what can be done. It is a well-developed tool and a leading example of freight data exchange in Australia.’

Ian Christensen, Managing Director at iMove

Greater Sydney population growth and changes in freight demand

eCommerce sales projections



*NORSI March 2017 & Roy Morgan Research and Jonathan Reeve

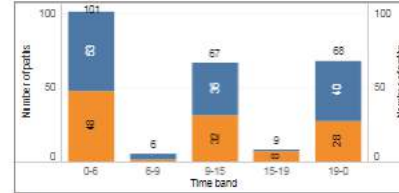
Freight Performance Dashboard

Freight Performance Dashboard

The dashboard shows Strategic Targets from the NSW Freight and Ports Plan 2018-2023 as well as key road, rail and other performance measures.

NSW Freight Dashboard

Rail Freight Access



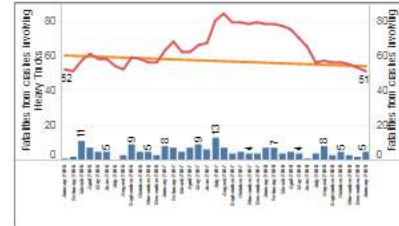
Down
Up

Use of Rail Freight



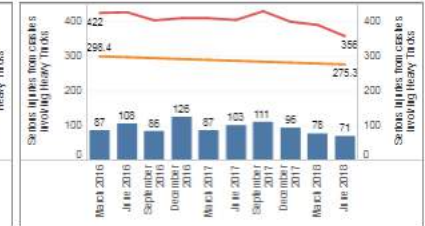
Rail share Port Botany
Total TEUs Transported by rail from Port Botany

Road Fatalities involving Heavy Truck Crashes



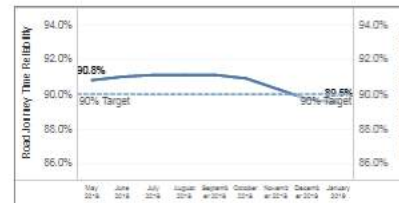
Actual- Monthly
Actual- Rolling 12 months
Target- Rolling 12 months

Serious Injuries involving Heavy Truck Crashes



Actual- Quarterly
Actual- Rolling 12 months
Target- Rolling 12 months

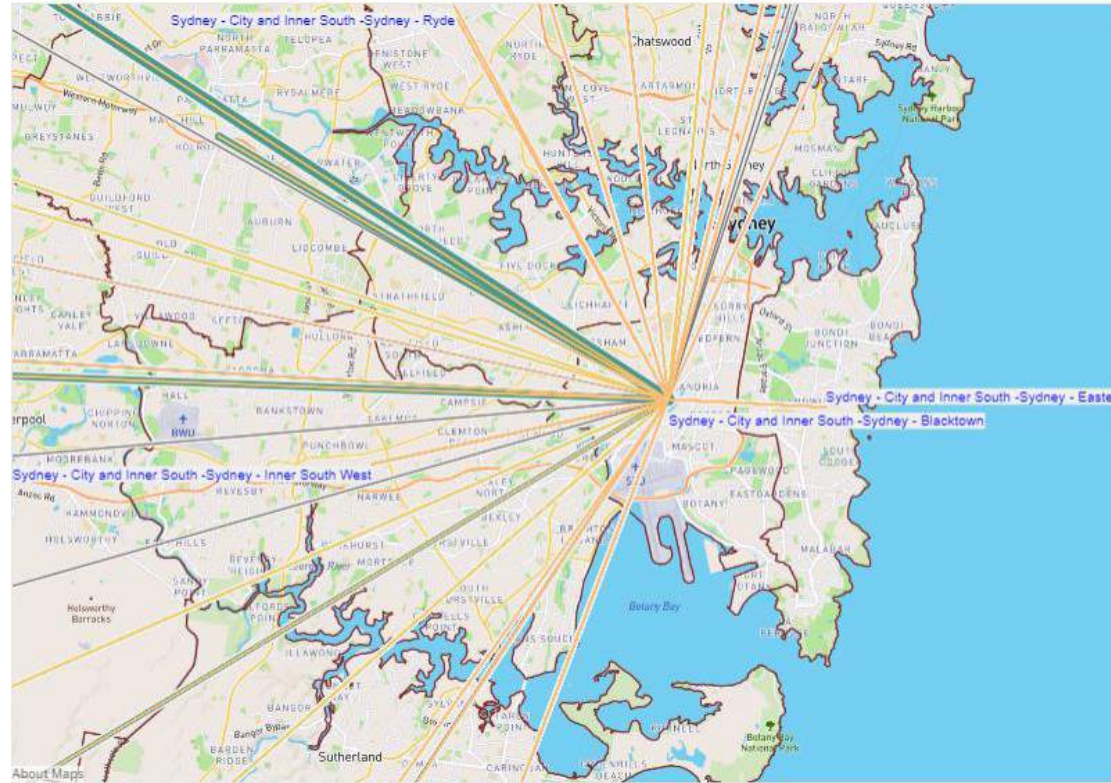
Road Journey Time Reliability



High Productivity Vehicle Access

Under development

SA4 Map by Origin: Year 2016 Selected



Commodity Group
Construction M... Consumer Goods Fuel Manufactures Metro Containers Steel Waste

Strategic Freight Forecasts

Open Data Hub

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[View Licence](#)

Other Access

The information on this page (the dataset metadata) is also available in these formats.

[JSON](#) [RDF](#)

via the [DKAN API](#)

Social

[Twitter](#)

[LinkedIn](#)

[Reddit](#)

[Google+](#)

[Facebook](#)

Freight Data





These data sets contain freight forecast, performance and other statistics. The data includes:

- Strategic Freight Forecasts - NSW freight commodity demand volume forecasts for the 40 year period between 2016 to 2056
- Freight performance dashboard - Strategic Targets from NSW Freight and Ports Plan 2018-2023 including
 - Use of rail freight
 - Road safety
 - Rail freight access
 - Rail freight capability
 - Port Botany Efficiency

Detailed information for drivers and rationale used to produce NSW freight commodity demand volume forecasts can be found in the [NSW Freight Commodity Demand Forecasts 2016-56 Report](#). A visualisation of the Strategic Freight Forecasts is available on the Transport for NSW Website under [Freight data](#).

Additional information on above Strategic Targets is available in the [NSW Freight and Ports Plan 2018-2023](#). Visualisations of the Strategic Targets are available on the Transport for NSW Website under [Freight data](#).

Data and Resources

- | | |
|---|-------------------------|
|  Freight Forecast
Freight demand forecasts by commodity across NSW with origin destination at Statistical Area 3 Level | EXPLORE |
|  SFM Data Dictionary
This document describes the data attributes available through the Strategic Freight Model dataset. | EXPLORE |
|  Use of Rail Freight
Number of total containers that leave or arrive at Port Botany on rail. | EXPLORE |
|  Road Safety
Statistics relating to fatalities and serious injuries from crashes involving a heavy and light truck, including the monthly total and rolling 12 month average. | EXPLORE |

Return to
Landing Page

LGA of crash

(All)

RMS Region

(All)

Degree of crash

(Multiple values)

Reporting year

(Multiple values)

Alcohol involved in crash

(All)

Speeding involved in crash

(All)

Fatigue involved in crash

(All)

Road classification (legal)

(All)

Major routes

(All)

Speed limit group (km/h)

(All)

Type of location

(All)

Type of location group

(All)

Key TU type

(All)

RUM code group

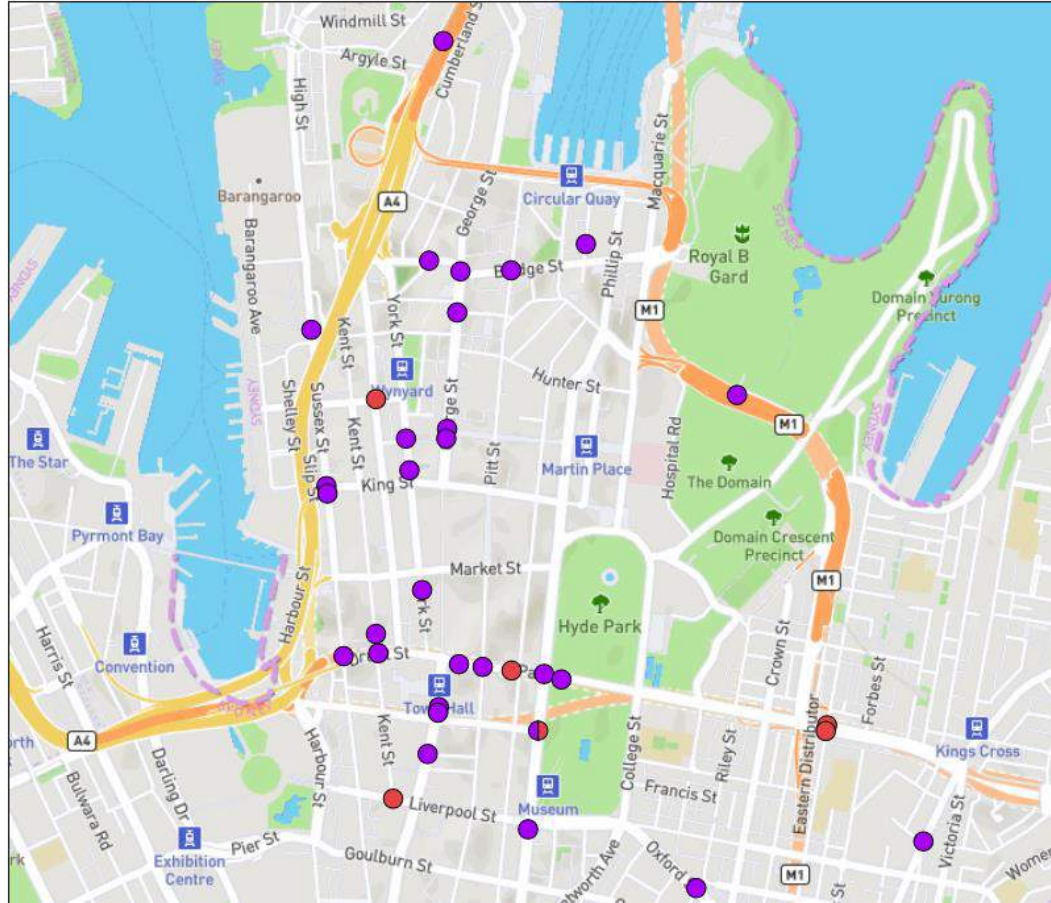
(All)

Heavy Vehicle Crashes

Type of Crash:

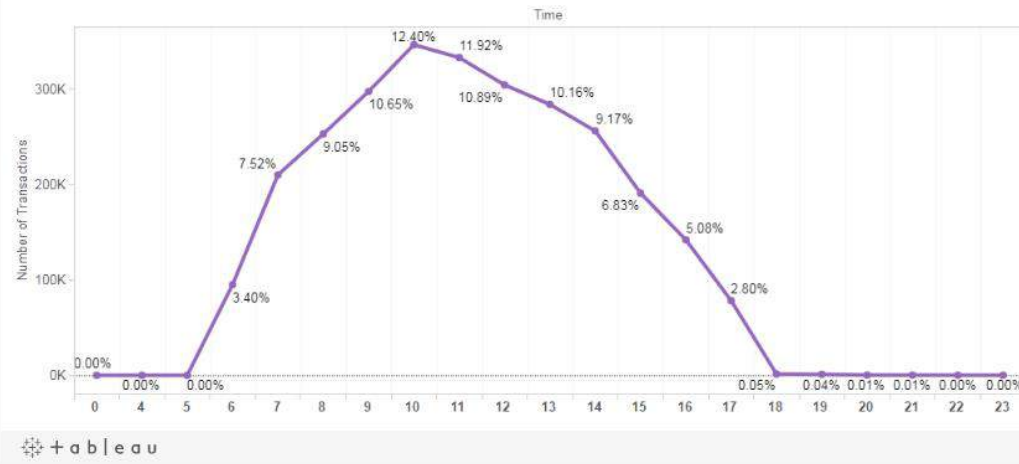
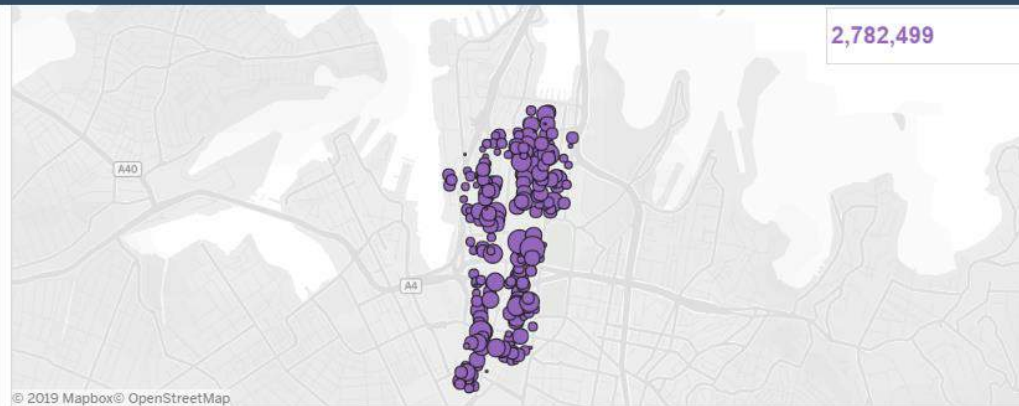
Heavy Vehicle

These categories are not mutually exclusive.



Centre for Road Safety

CBD Loading Zone Transactions



Sydney CBD Loading Zone Usage

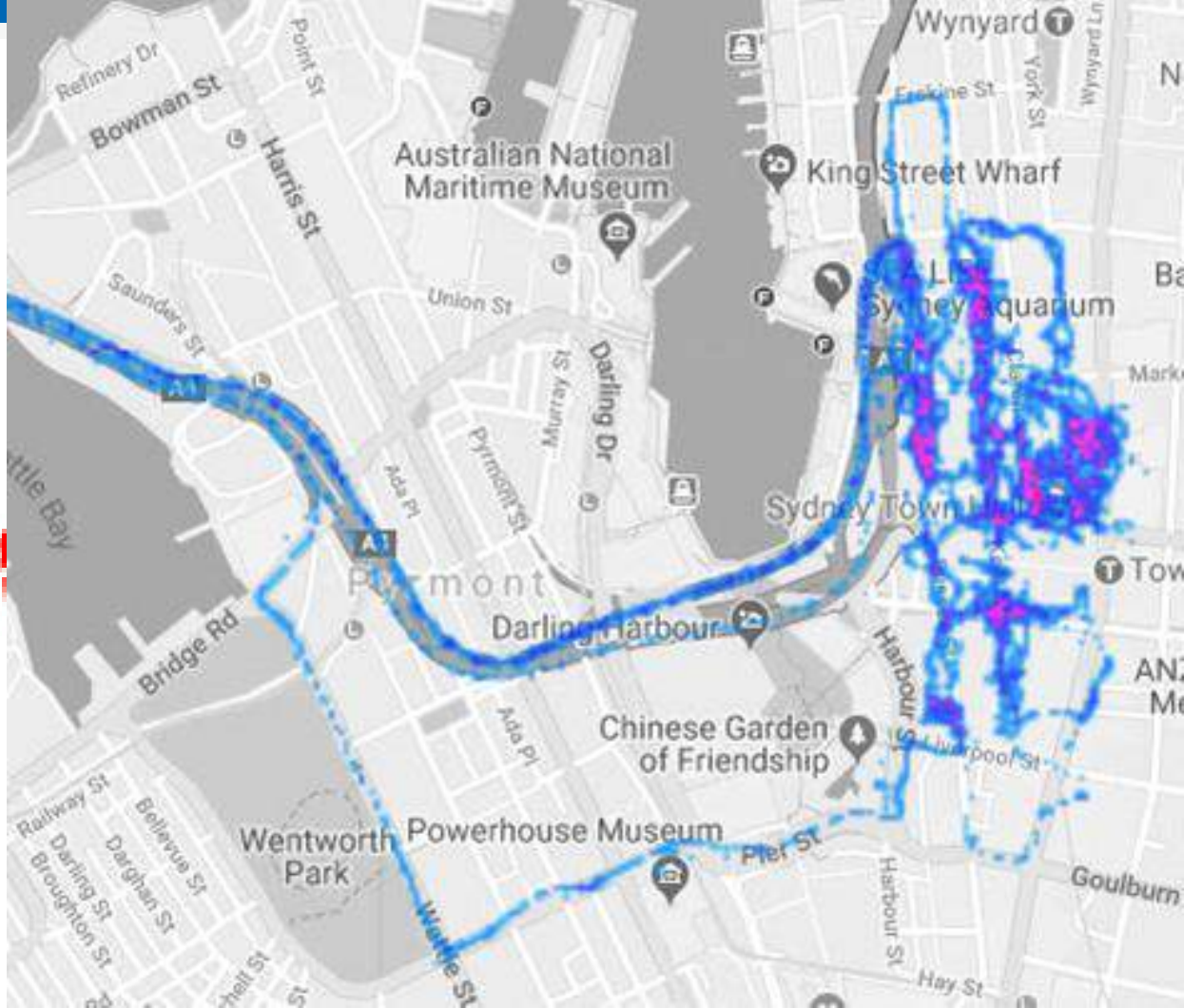
Sharing freight data



A courier in the CBD on one day

Produced using
Strava on a phone

Matthew.Stockwell@transport.nsw.gov.au



Thanks!

Micah Starkis

Director, Open Data, Apps and Innovation

Transport for NSW

Future Transport Technology Roadmap



My (autonomous) car is (still) king



We're all in this together



Super-commuting with public,
active and shared transport



Why travel so much?



Personalise customer interaction:

Develop digital platforms that provide rich, contextual information, frictionless payment, easy navigation and two-way engagement to customise transport experiences



Transform the mass transit network:

Apply technologies to automate mass transit solutions, improve their efficiency, deliver better service frequency and reduce transit times



Foster shared, demand-responsive services:

Develop flexible and shared-use transport service models based on aggregated demand to meet market needs and extend transport access



Enable connected, automated vehicle platforms:

Support adoption of vehicles and infrastructure that deploy automation to efficiently, reliably and safely move people, goods and services



Create intelligent transport networks, managed with data:

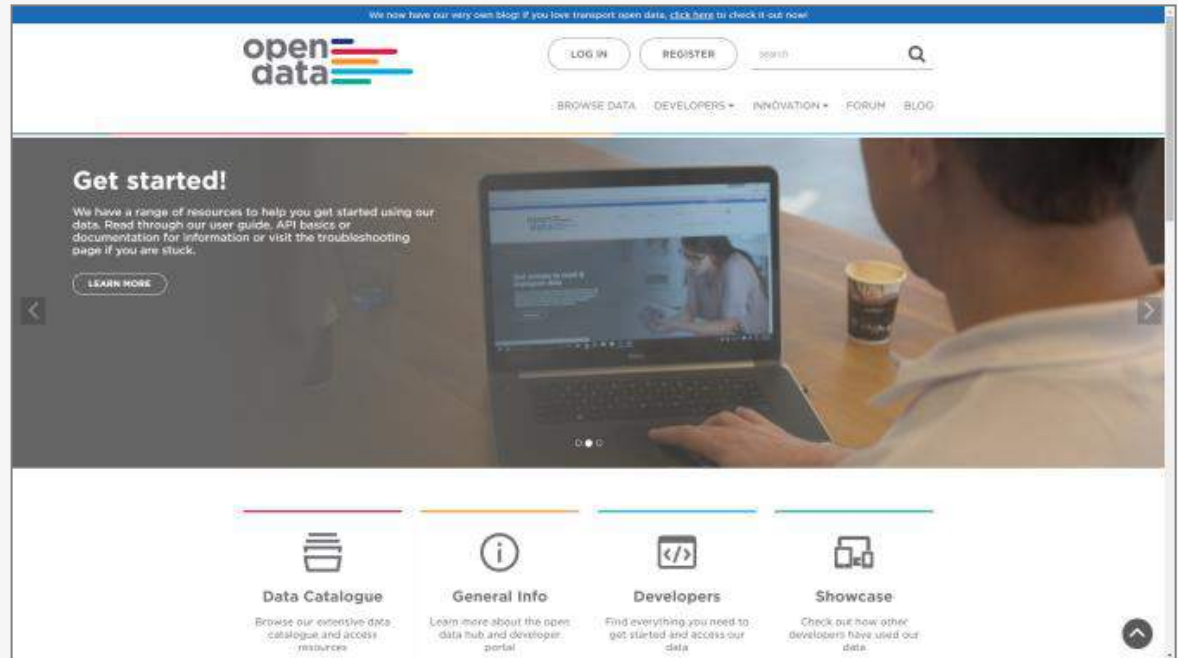
Install technologies and build networks that actively gather data. Use AI and real-time analytics to manage demand, optimise capacity, improve flows and enable better customer outcomes.

Innovation and Use of Data is growing

2.8 billion data requests (API Hits)

14,700 users

3,357 applications



Innovation Since 2012

TripView



Service Information	Platform	Departure Time	Arrival Time	Status
Now	Town Hall Platform 1	3:23 pm	3:27 pm	Running on time
1 min	Town Hall Platform 2	3:24 pm	3:28 pm	Running on time
3 mins	Town Hall Platform 4	3:26 pm	3:29 pm	Running on time
4 mins	Town Hall Platform 2	3:27 pm	3:31 pm	Running on time
6 mins	Town Hall Platform 1	3:29 pm	3:33 pm	Running on time
12 mins	Town Hall Platform 1	3:35 pm	3:38 pm	Modified service
	Town Hall Platform 4	3:38 pm	3:40 pm	

TripGo



Mode	Departure Time	Arrival Time	Duration	Cost	CO2
Bus	1:29pm	2:06pm	0:37 hrs	4 AUD	3.8 kg CO2
Car + Park	1:51pm	2:38pm	0:28 hrs	7 AUD	0.0 kg CO2
Walk	1:56pm	2:33pm	0:19 hrs	7 AUD	0.0 kg CO2
Bike + Walk	2:18pm	3:56pm	1:16 hrs	5 AUD	0.1 kg CO2
Bus + Walk	2:23pm	3:51pm	1:08 hrs	5 AUD	0.1 kg CO2

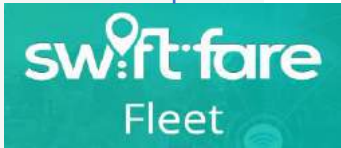
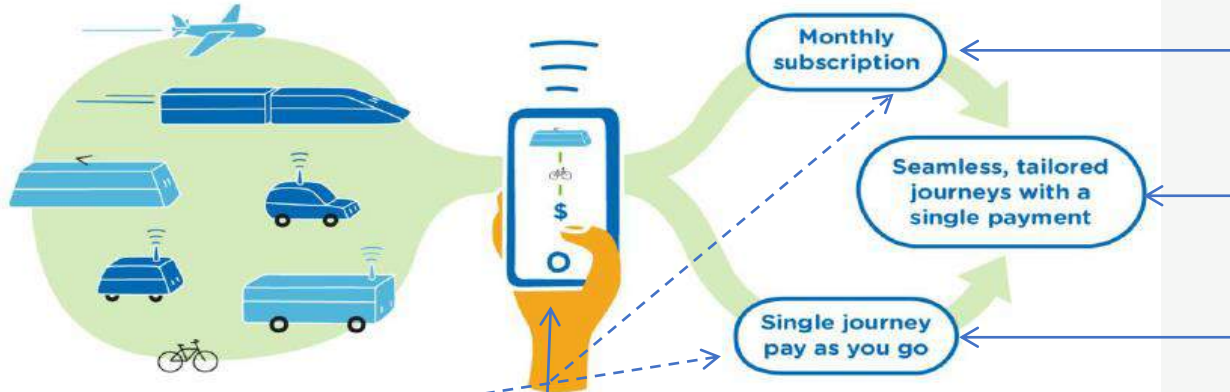
Innovation Since 2012



Catalysing the MaaS Ecosystem – Tailored Transport

The range of submissions highlights the variety of capabilities needed and available to make MaaS work

← Transport MaaS Platform (Internal) — Customer Functionality and Products →



Enables smaller transport operators to integrate with technical platforms with plan, book and pay capability.



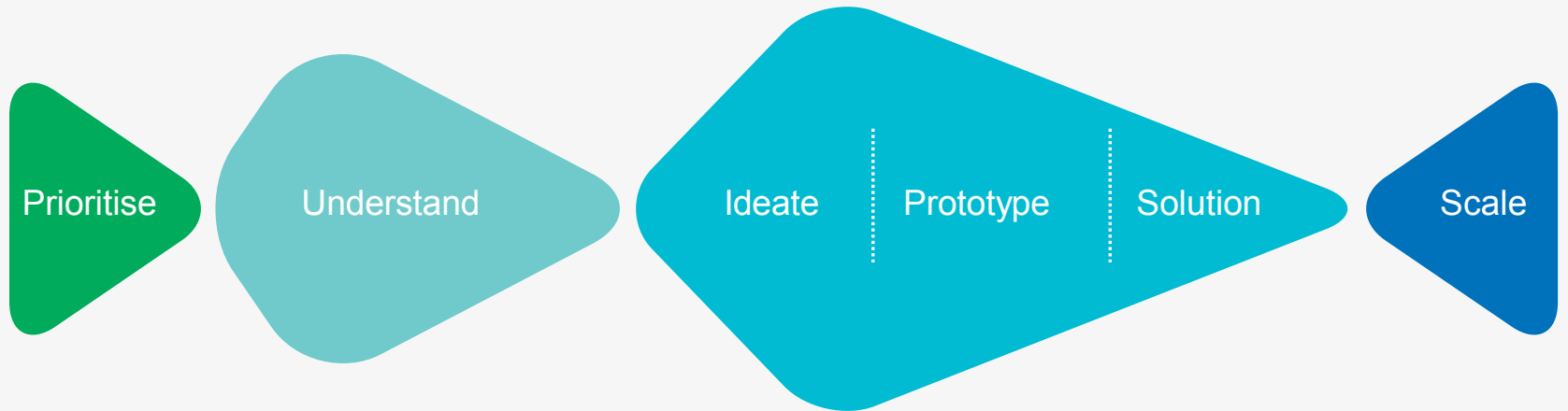
Brings together all relevant mobility options for **all** Transport channels and **any** 3rd party. It gives customers tailored journeys options



Stand alone customer product that enables single payments across operators & monthly subscriptions



Freight Transport Accelerator Next Steps



Next Step 1: Innovation Challenge Submissions

- May 2019
- Seed funding pool - determined by solution, customer benefit, impact and TFNSW investment
- Successful submissions potentially to progress to RFP and supported incubation
- Criteria to be addressed
- Invited to pitch to an external judging panel
- Data sharing requirements
- Refer to website

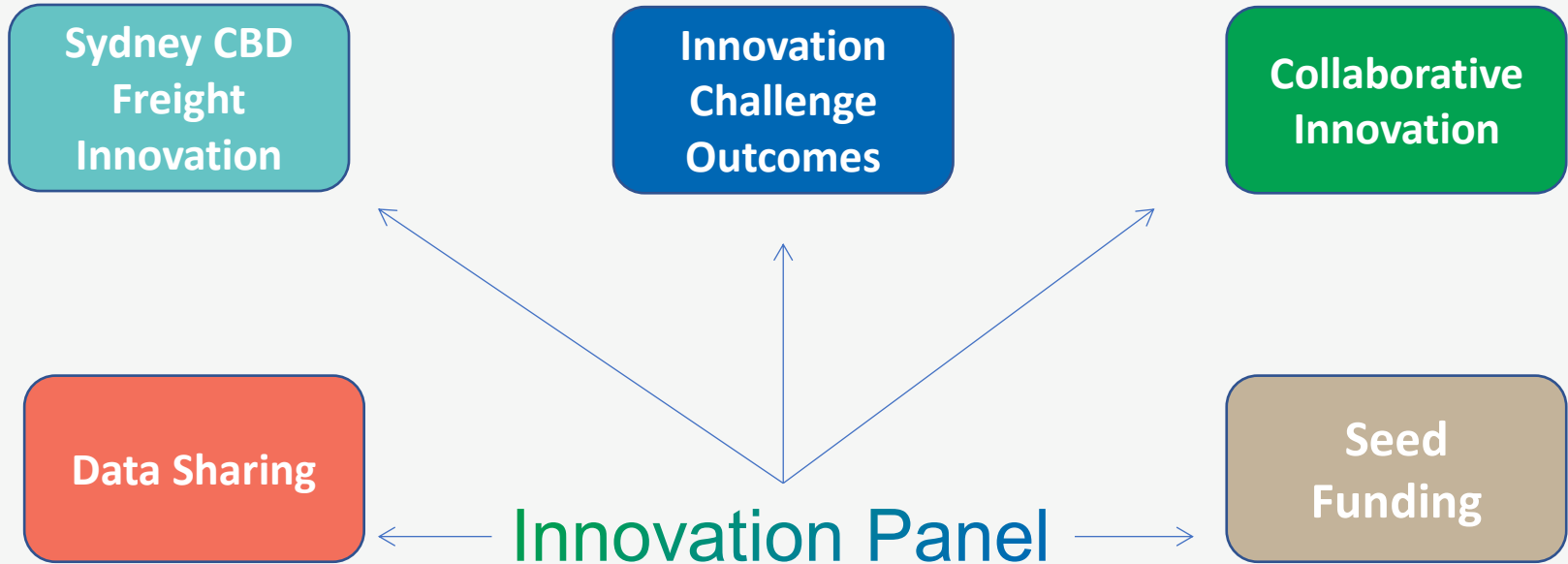
Next Step 2: Industry Collaboration Event

- The industry networking session
- Facilitated by TFNSW
- Optional presentations
- Opportunity to meet, engage or partner with other organisations or teams
- Potential to improve your submission

Thanks!

Innovation Panel

- **Caity Mcloughlin**, Associate Director, **Optus Business**
- **Stephanie Salter**, Director, Transport Digital Accelerator, **Transport for NSW**
- **Micah Starkis**, Director, Open Data, Apps and Customer Feedback Systems, **Transport for NSW**
- **Michael Stokoe**, Associate Director Freight & Servicing, Sydney Coordination Office,
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Morning Tea