

# Transport

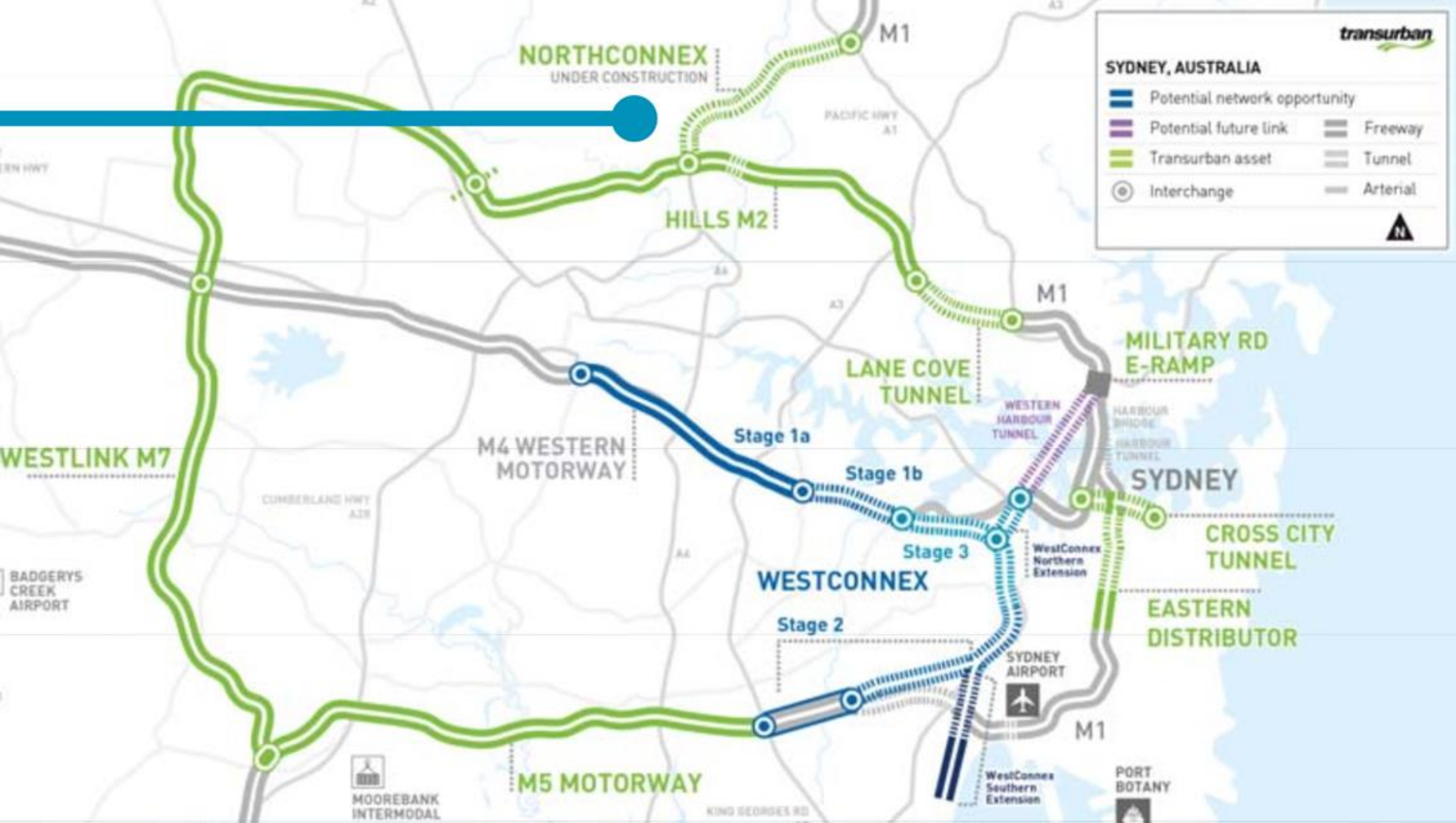
Ecotransit Sydney  
Mathew Hounsell  
Co-convenor

The background of the image features a dark grey gradient on the left and a complex, abstract pattern of overlapping green and yellow-green geometric shapes on the right. The word "Westconnex" is centered in the dark grey area.

Westconnex

## SYDNEY, AUSTRALIA

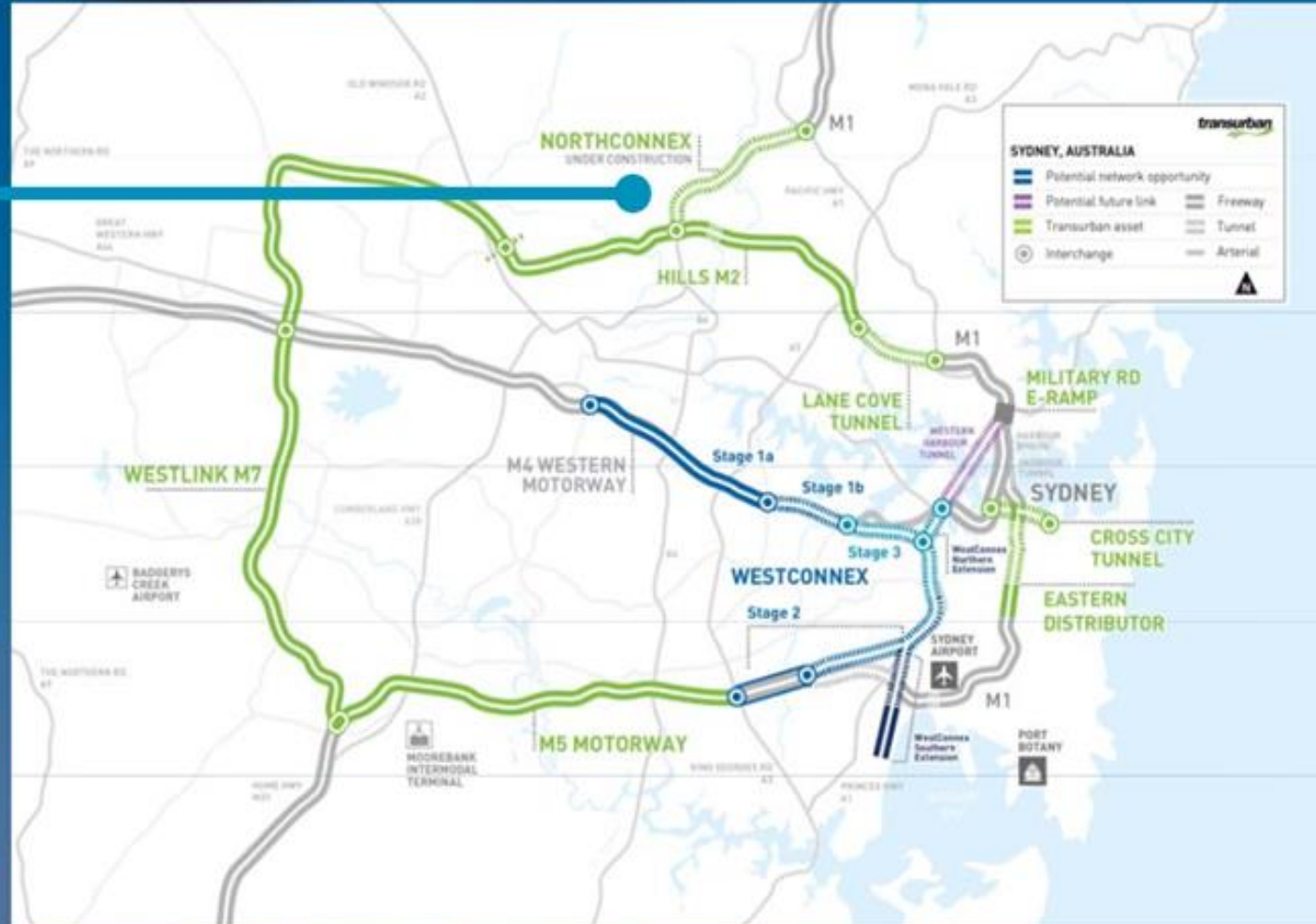
- |   |  |
|---|--|
|  Potential network opportunity |  Freeway  |
|  Potential future link         |  Tunnel   |
|  Transurban asset              |  Arterial |
|  Interchange                   |  |



# SYDNEY NETWORK

## NORTHCONNEX

- Construction proceeding on time and budget
- Land acquired and works underway at all tunnelling sites
- Total project cost is approximately \$3.0 billion, including Government's contribution
- M7 truck toll currently 1.89 times car toll and will reach 3 times car toll by 1 January 2017
- Expected project completion late 2019



## OPERATIONAL ENHANCEMENT

- Increase in recoveries following implementation of GLiDe on LCT, M7 and Roam in July 2015, in addition to ongoing process improvements

## POTENTIAL FUTURE DEVELOPMENT

- Prepared to assist the Government in delivery of road agenda
- Potential for significant network expansion over medium term



# Average Network Speed Drops from 34 km/h to 28 km/h

Origin	Destination	2021 w/o Westconne x – Minutes	2021 w/ Westconne x – Minutes	Tranit 131500.info - Minutes
Penrith	CBD	114	92	62
Penrith	Surry Hills	117	89	58
Penrith	Airport	113	91	71
Parramatta	Strathfield	30	20	12
Parramatta	CBD	64	44	17
Parramatta	Airport	101	66	40
Strathfield	Surry Hills	45	30	14
Strathfield	Airport	66	44	28
Summer Hill	Broadway	27	24	24
Liverpool	Randwick	61	42	80
Liverpool	U Syd	61	43	65

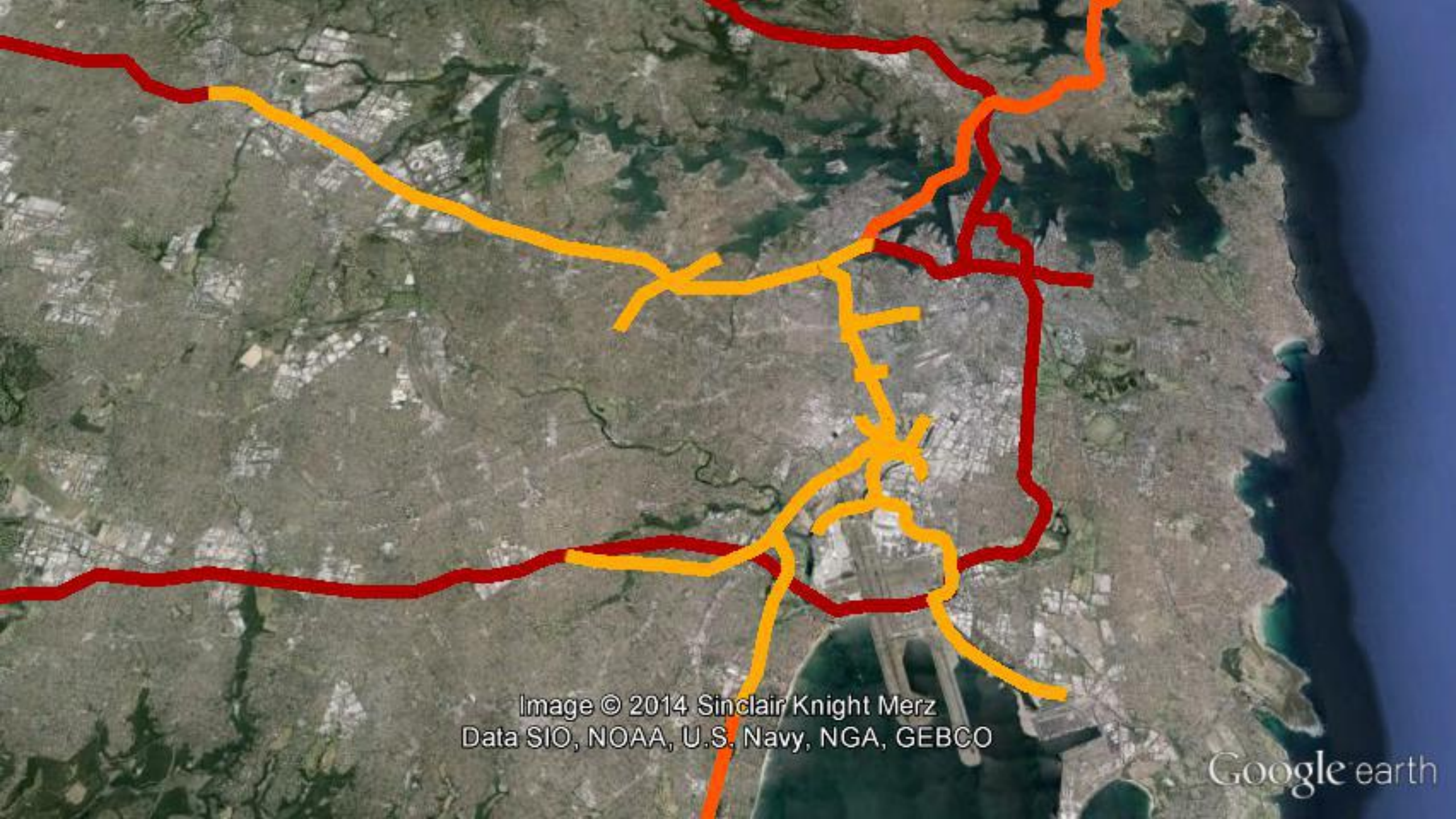


Image © 2014 Sinclair Knight Merz  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google earth



Figure 5-3 Volume to capacity ratios on the network with WestConnex. 2031 morning peak

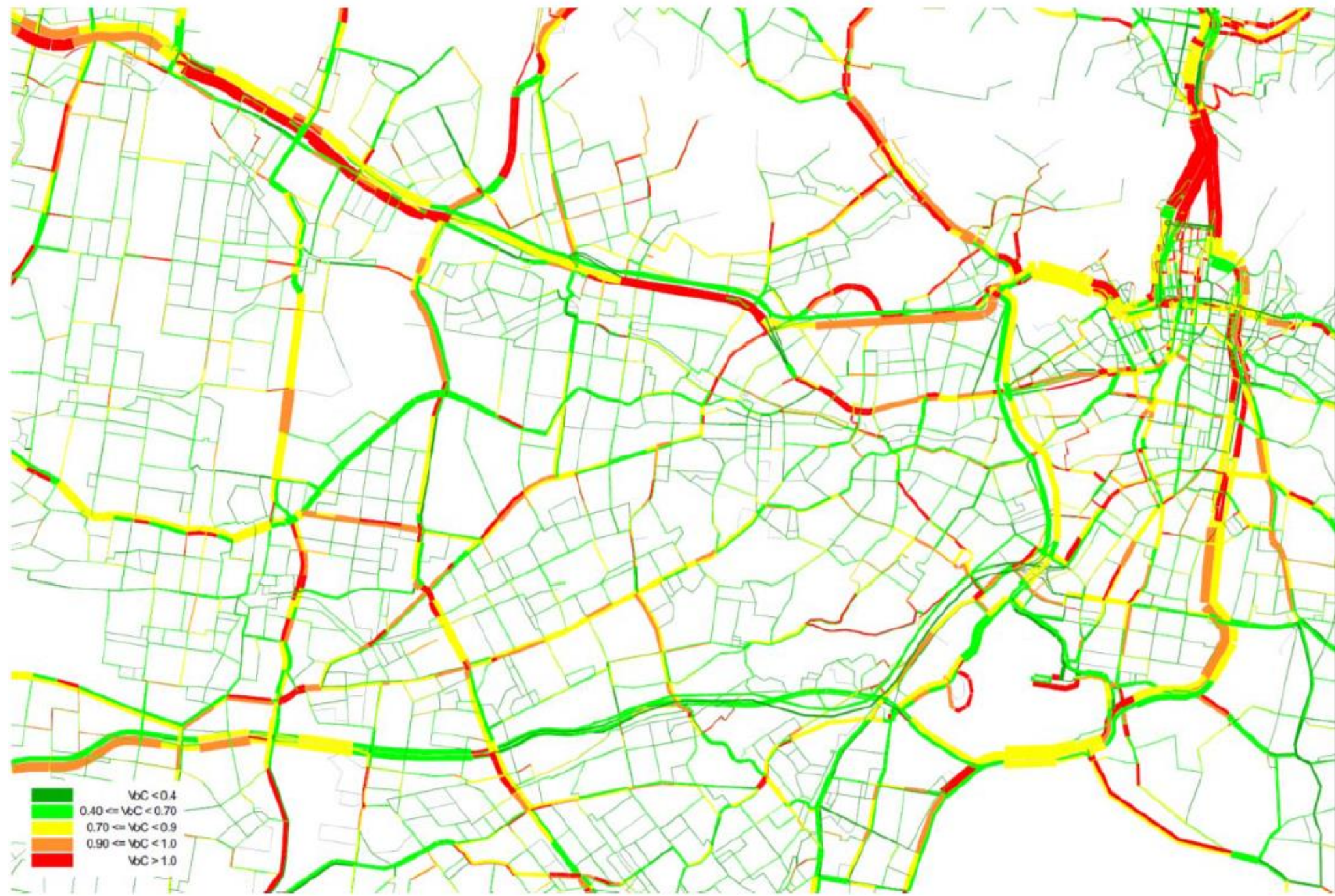




Figure 7-1 Link volume to capacity ratio on the network following WestConnex and Western Harbour Tunnel, 2031 morning peak





Auckland Harbour Bridge - 2 weeks after opening. (Sir George Grey Special Collections)





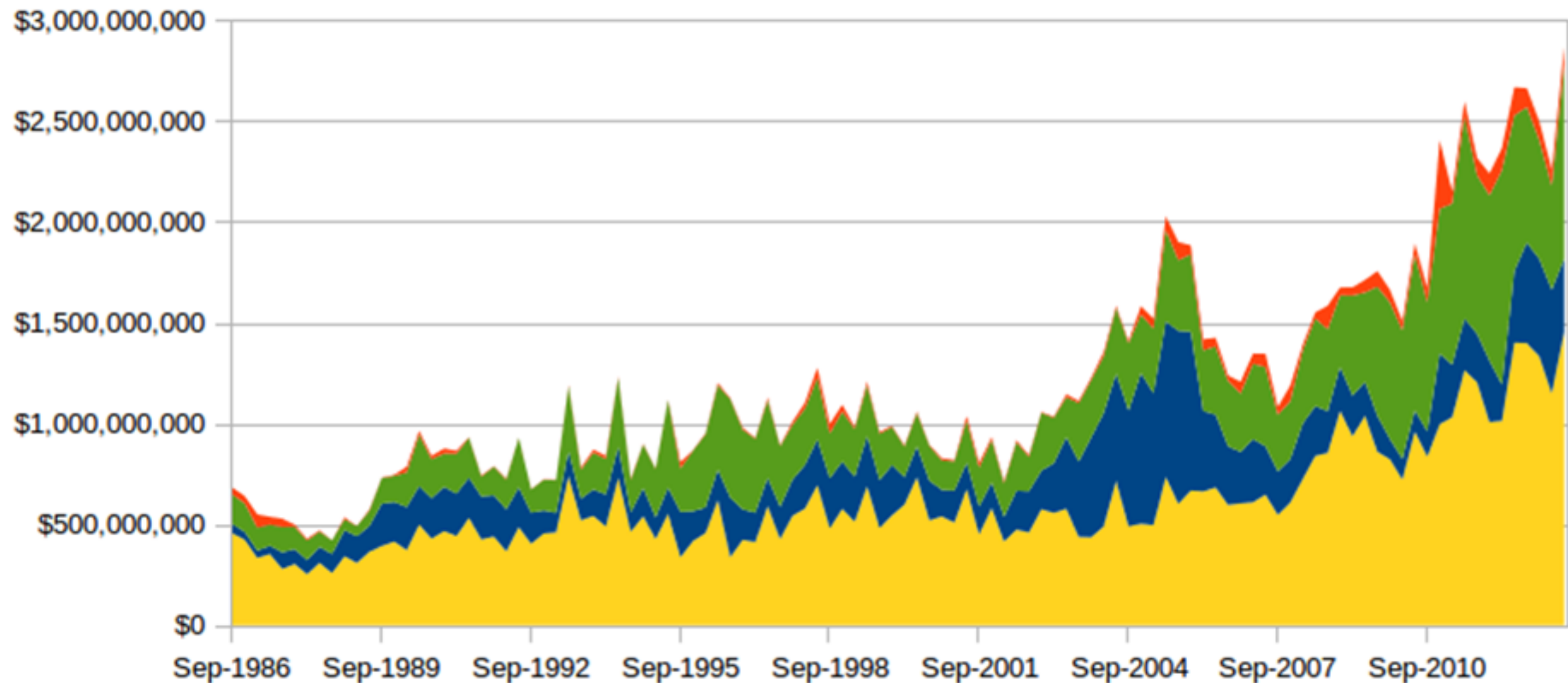




You Get What  
You Pay For

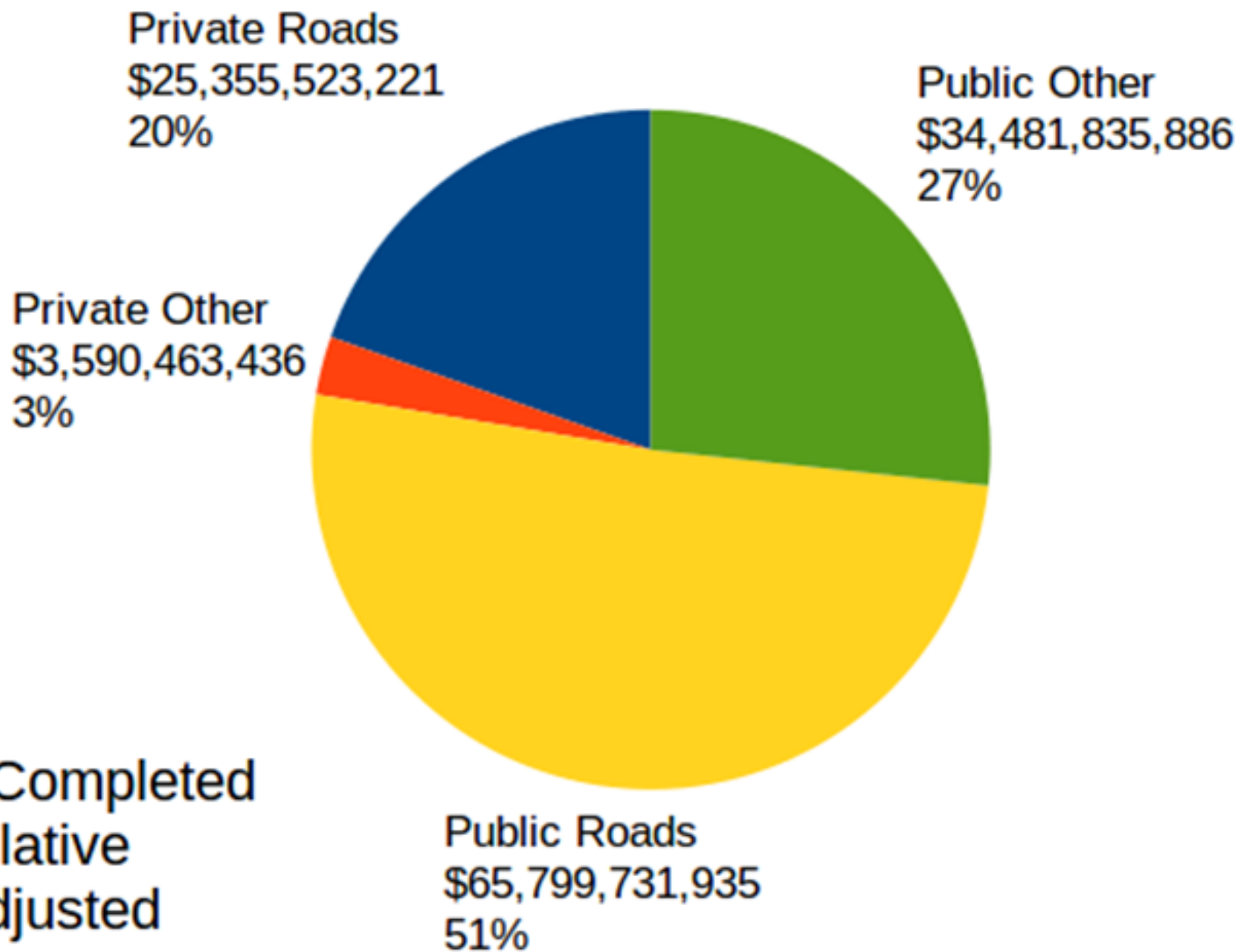
# Work Completed - CPI Adjusted

Public Roads Private Roads Public Other Private Other

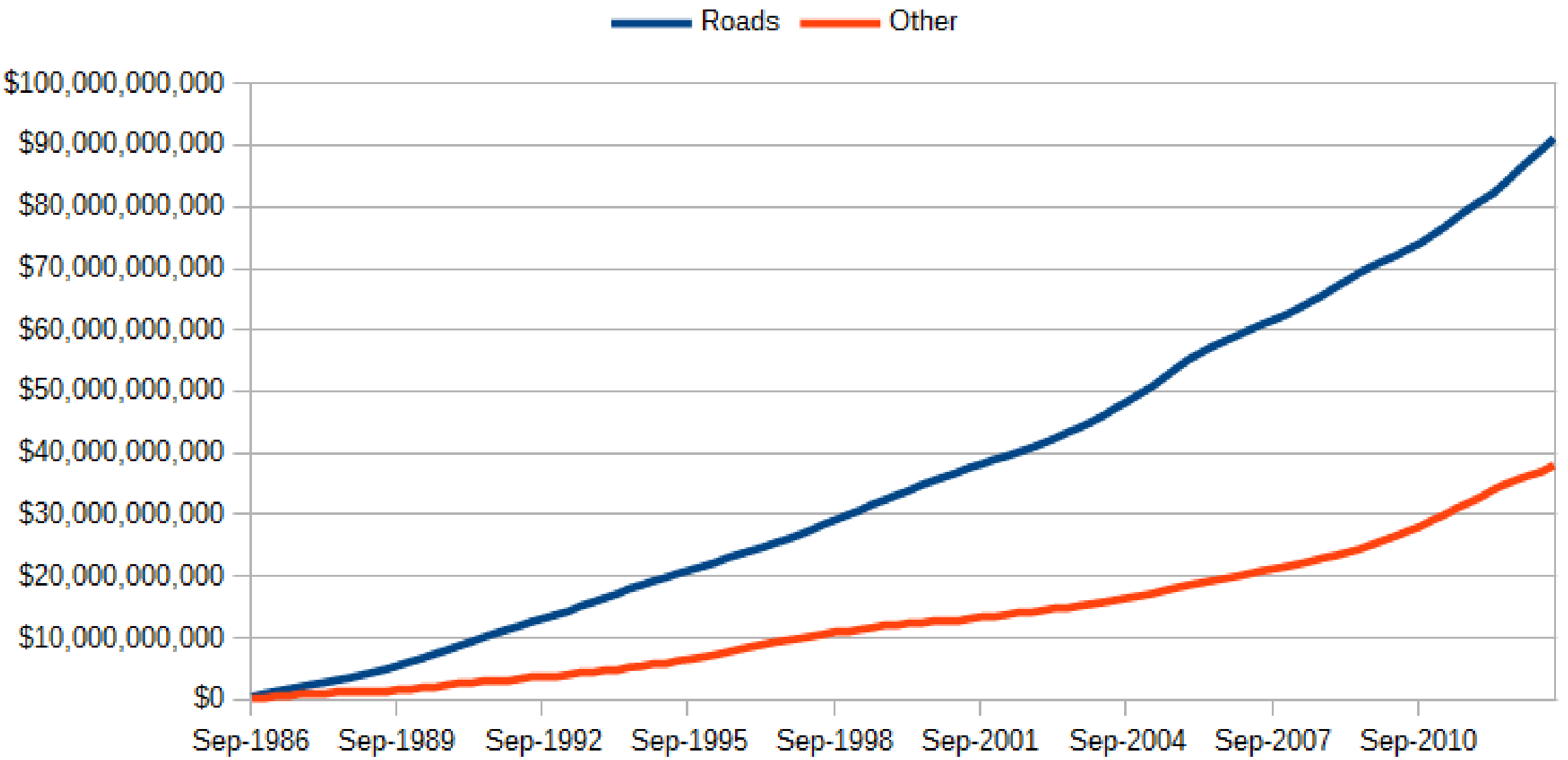




NSW Work Completed  
- Cumulative  
- CPI Adjusted



# NSW Work Completed - Cumulative - CPI Asjusted - Private + Public

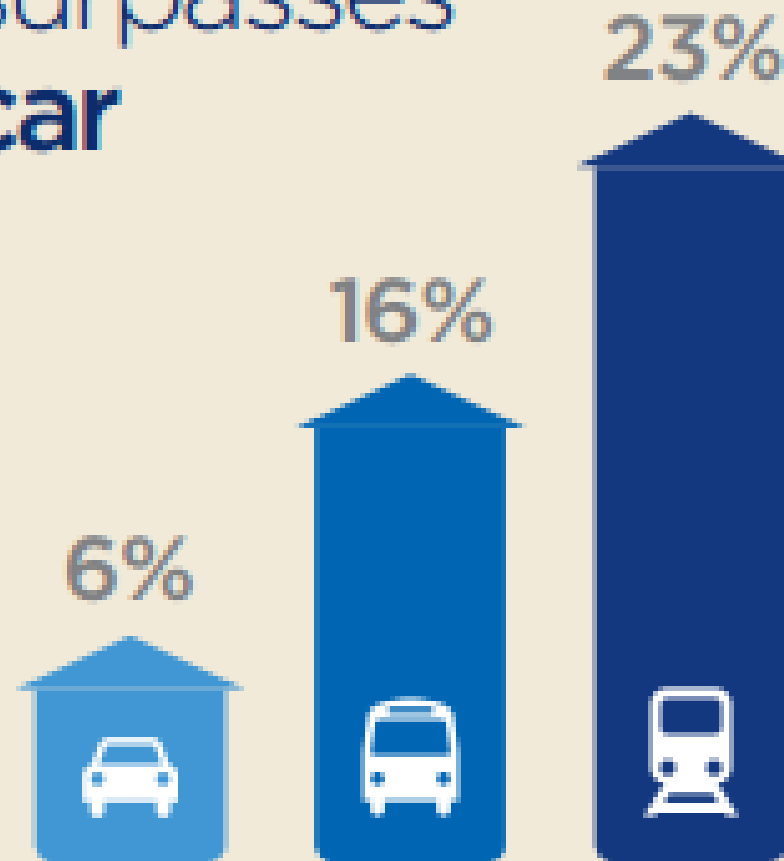








## In the last decade...

GROWTH IN





**bus & train**  
travel  
surpasses  
**car**



## Key changes over the last decade

	↑ 13%	Population
	↑ 7%	Weekday trips
	↑ 10%	Weekend trips
	↑ 23%	Vehicles

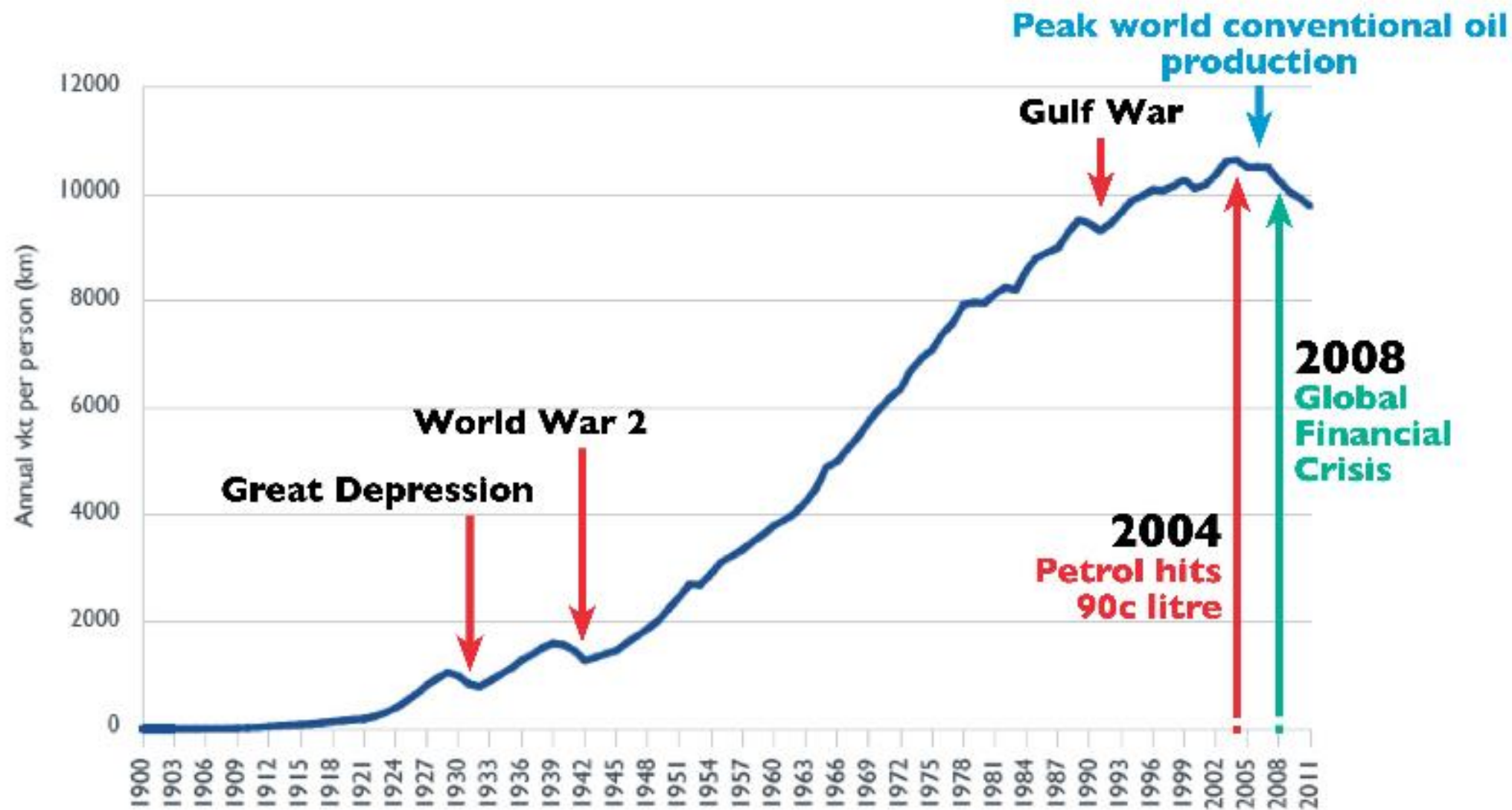
## Growth by mode

	↑ 24%	Train trips
	↑ 19%	Bus trips
	↑ 5%	Vehicle trips
	↑ 21%	Total public transport

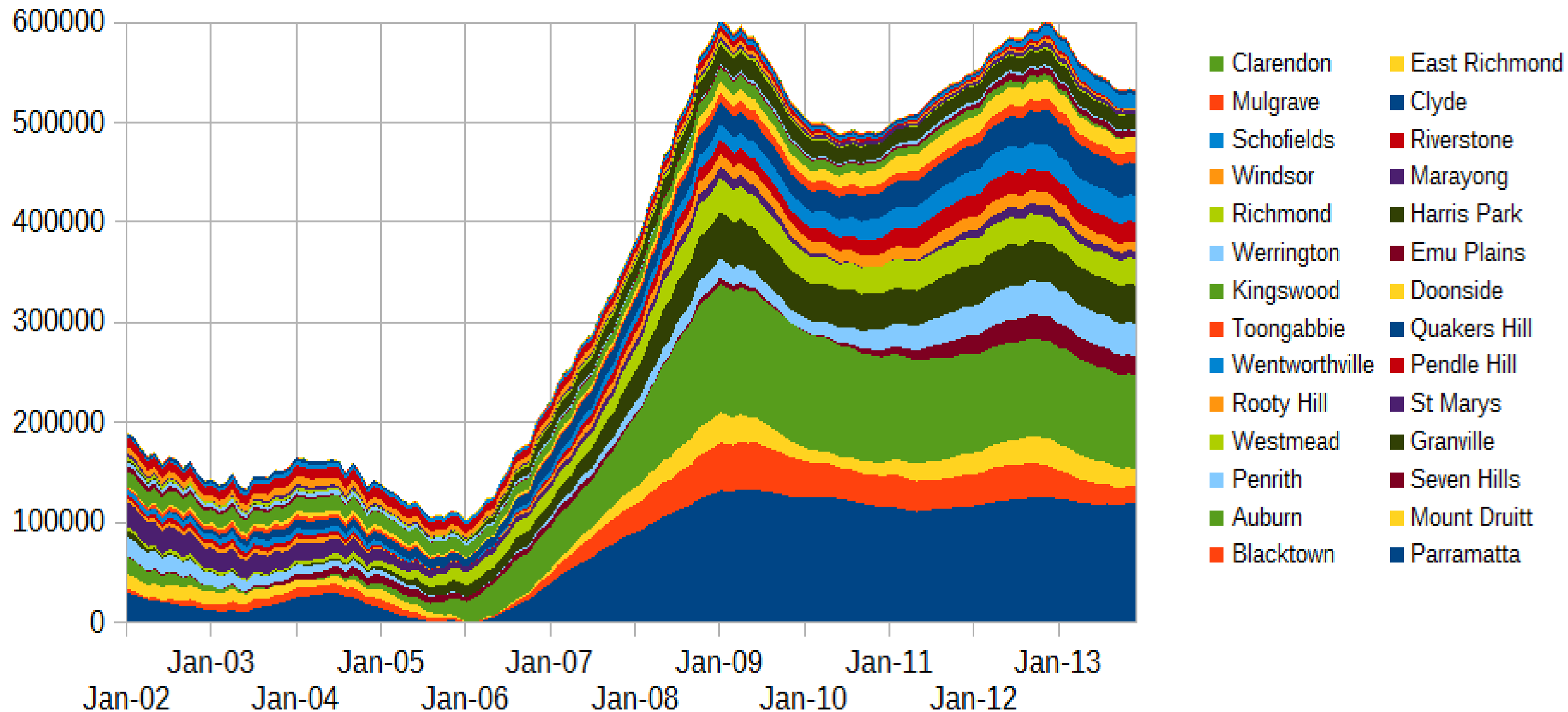
Household Travel Survey Report: Sydney 2012/13



## Australian trend in vehicle kilometres travelled per person



# Change in Monthly Patronage (12 month Average) Western Line













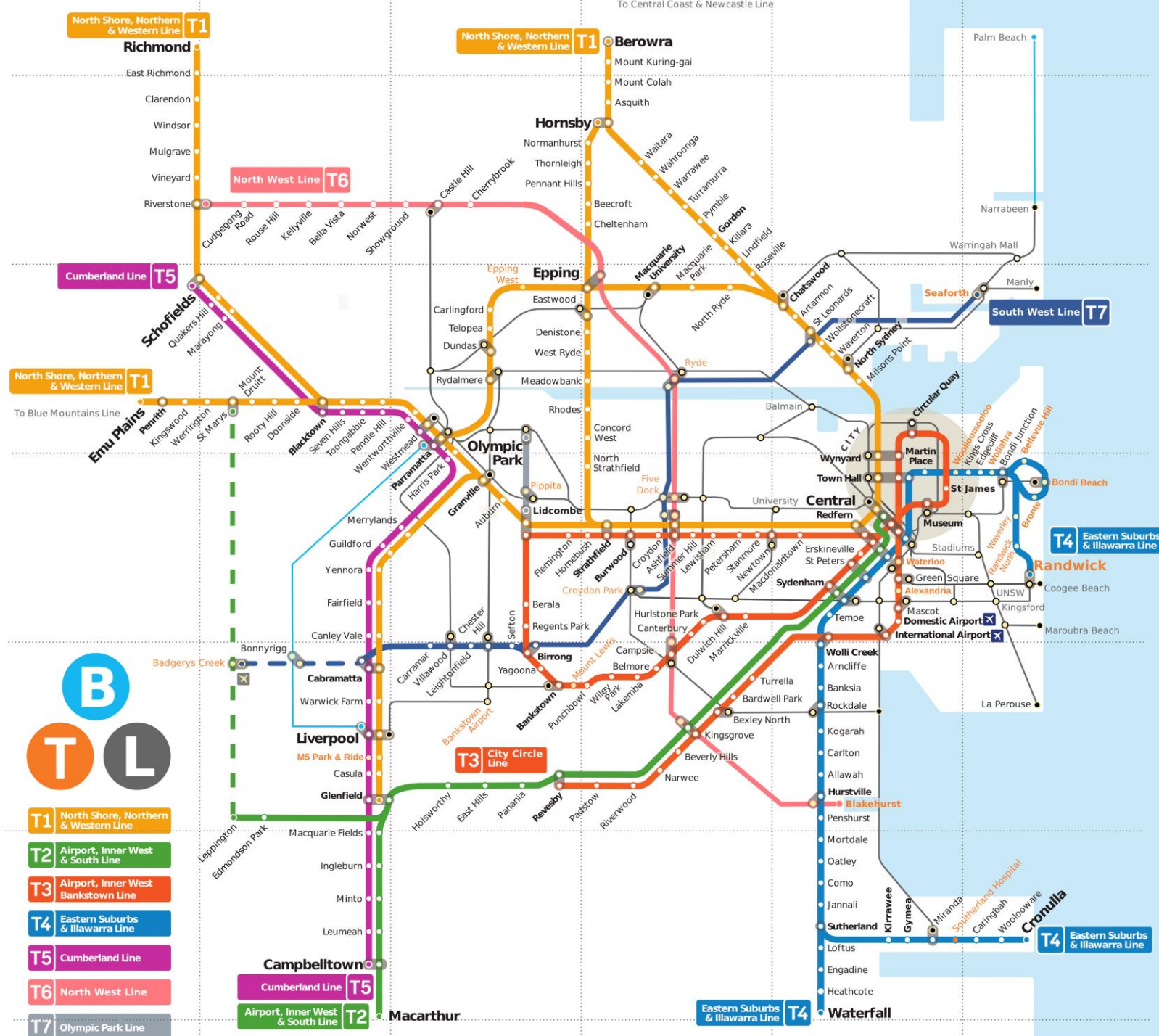
# High Capacity Transport



# Capacity vs Cost

Type	Persons	Persons/Lane/Hour
Private Car	1.2	2,400 (Actually 1,440)
Bus	50	1,500
Articulated (Bendy) Bus	100	3,000
Light Rail 45m	250	7,500
North West Rail Link Train	900	27,000
Sydney Train	1,200	36,000

Type	Km
Light Rail Extension	\$40,000,000
Underground Railway Tunnel	\$250,000,000
Surface Toll Road	\$90,000,000
Twin 3 Lane Toll Road Tunnel	\$500,000,000







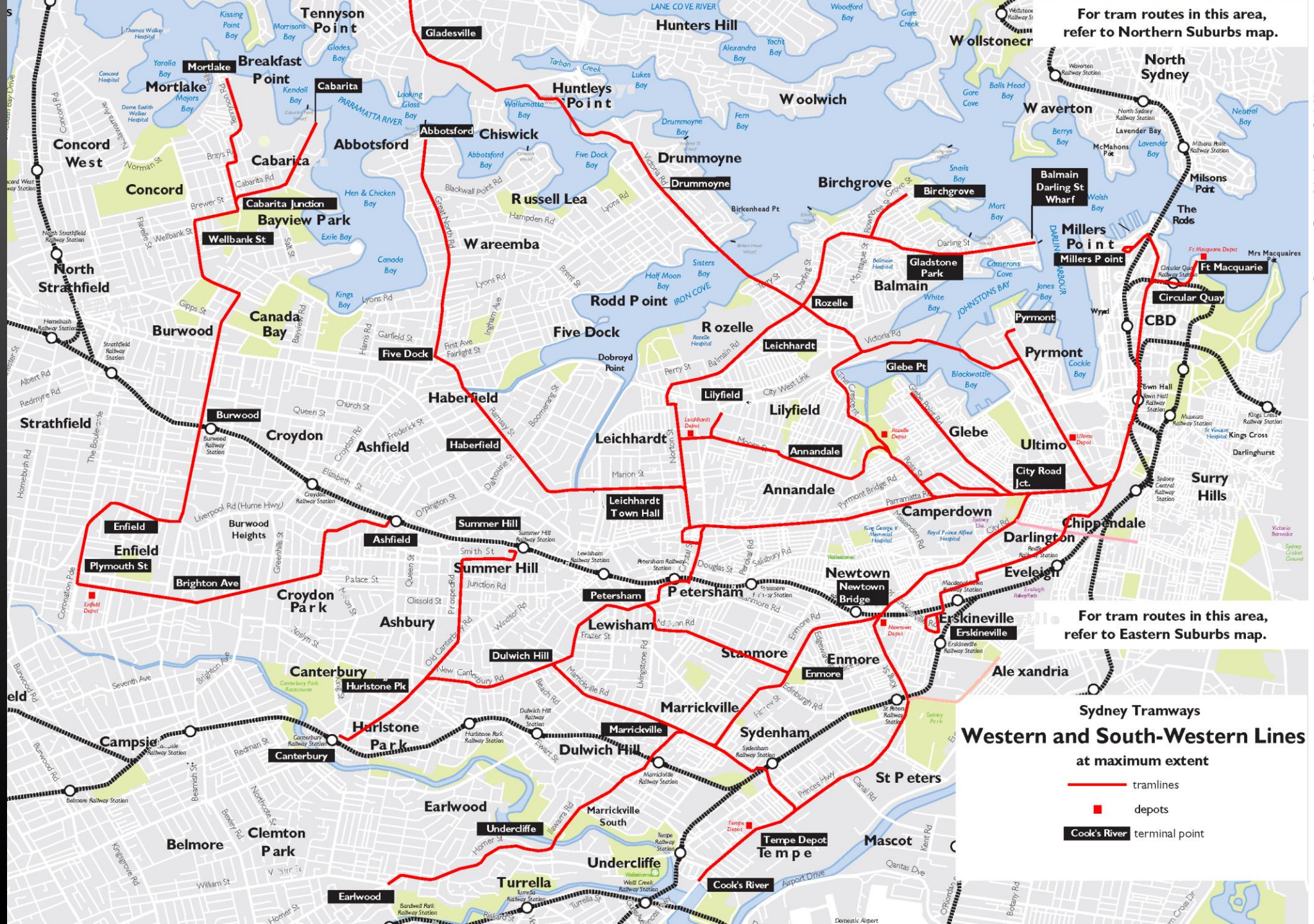




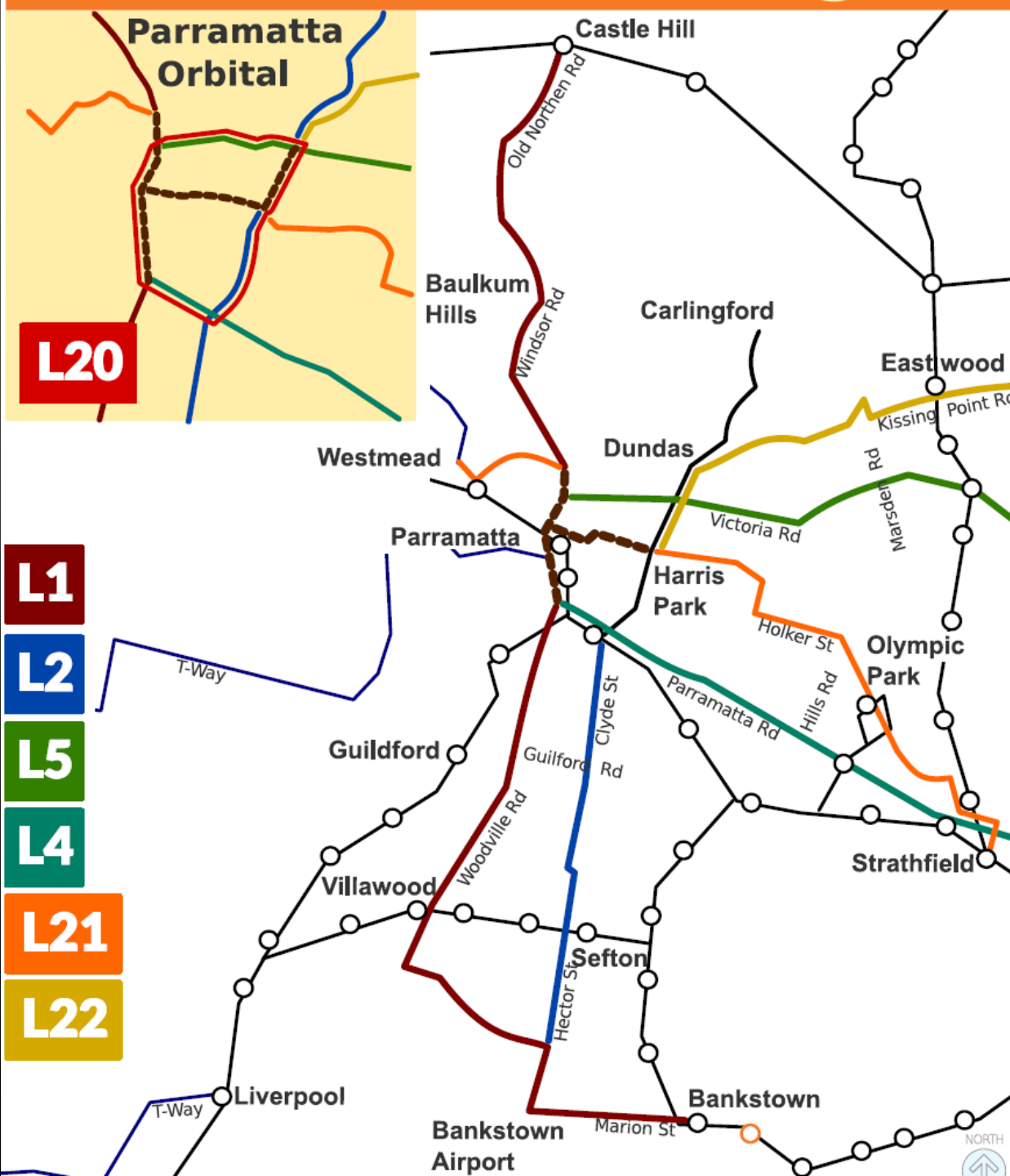


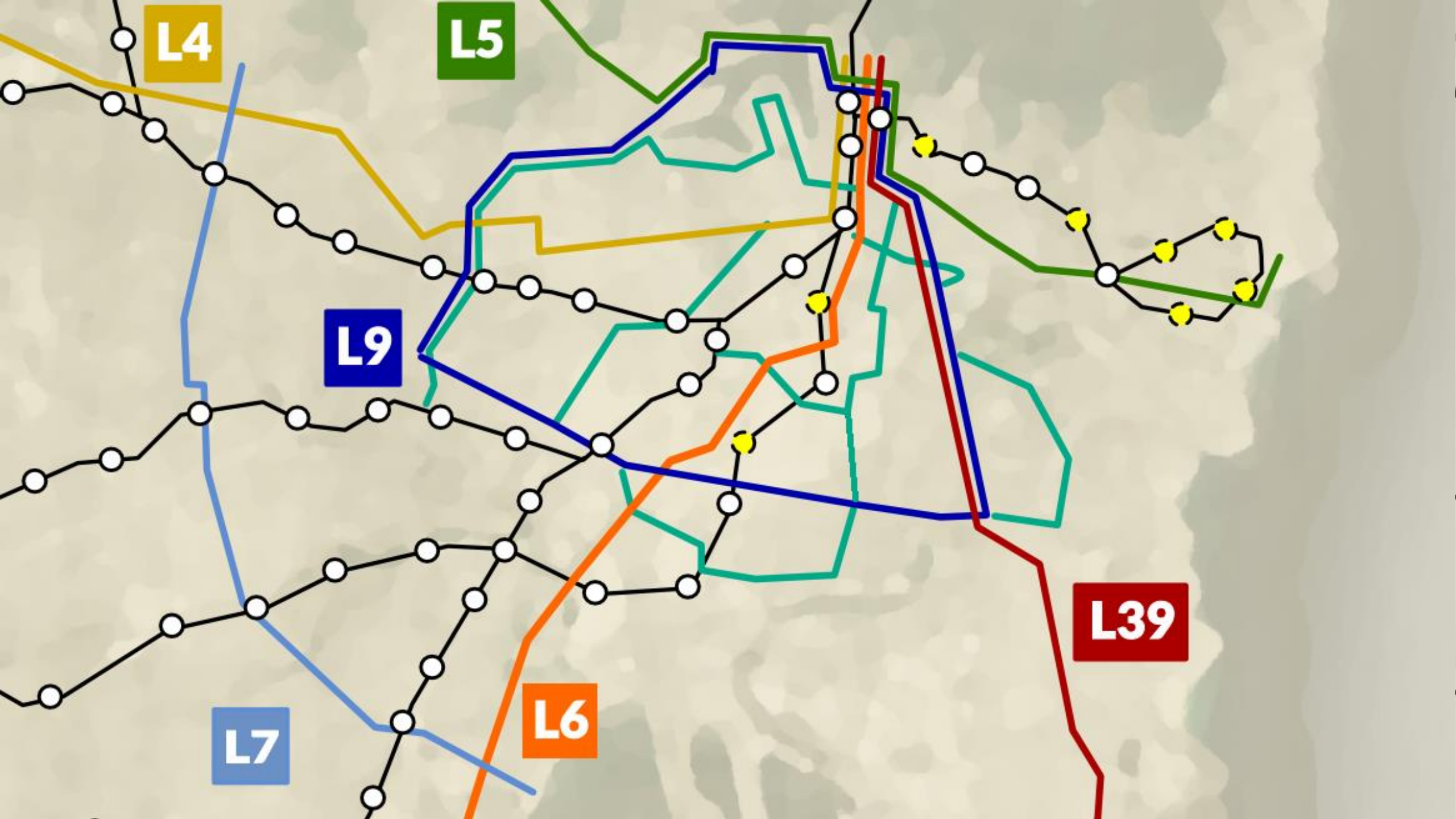














Ecotransit Sydney

Mathew Hounsell

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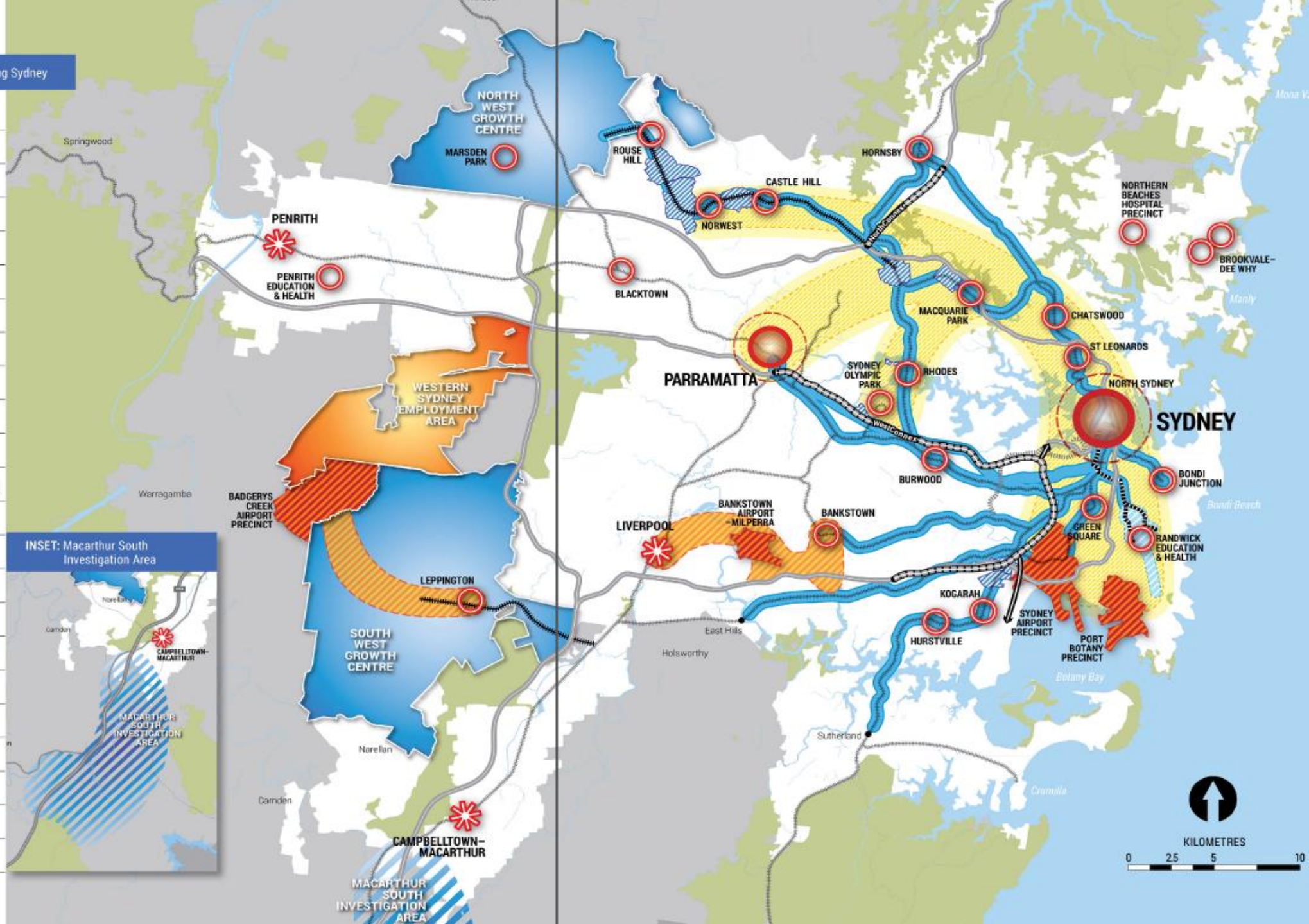
# The Plan For Growing Sydney





FIGURE 2: A Plan for Growing Sydney

-  CBD
-  Regional City Centre
-  Strategic Centre
-  Growth Centre – future urban development
-  Urban Investigation Area – potential growth centre
-  Priority Precinct – major urban renewal
-  Urban Renewal Corridor
-  Local renewal opportunities yet to be identified
-  Western Sydney Employers Area
-  Global Economic Corridor
-  Transport Gateway – airports and ports
-  Enterprise Corridor – attracting new economic activity
-  Metropolitan Urban Area
-  Metropolitan Rural Area
-  Parks & Reserves
-  Waterway
-  Rail Network – existing network
-  Rail Network Extension – under construction
-  Inner West Light Rail – existing
-  CBD & South East Light Rail – under construction
-  Motorway – existing network
-  Motorway Expansion – proposed
-  Proposed Motorway Extension









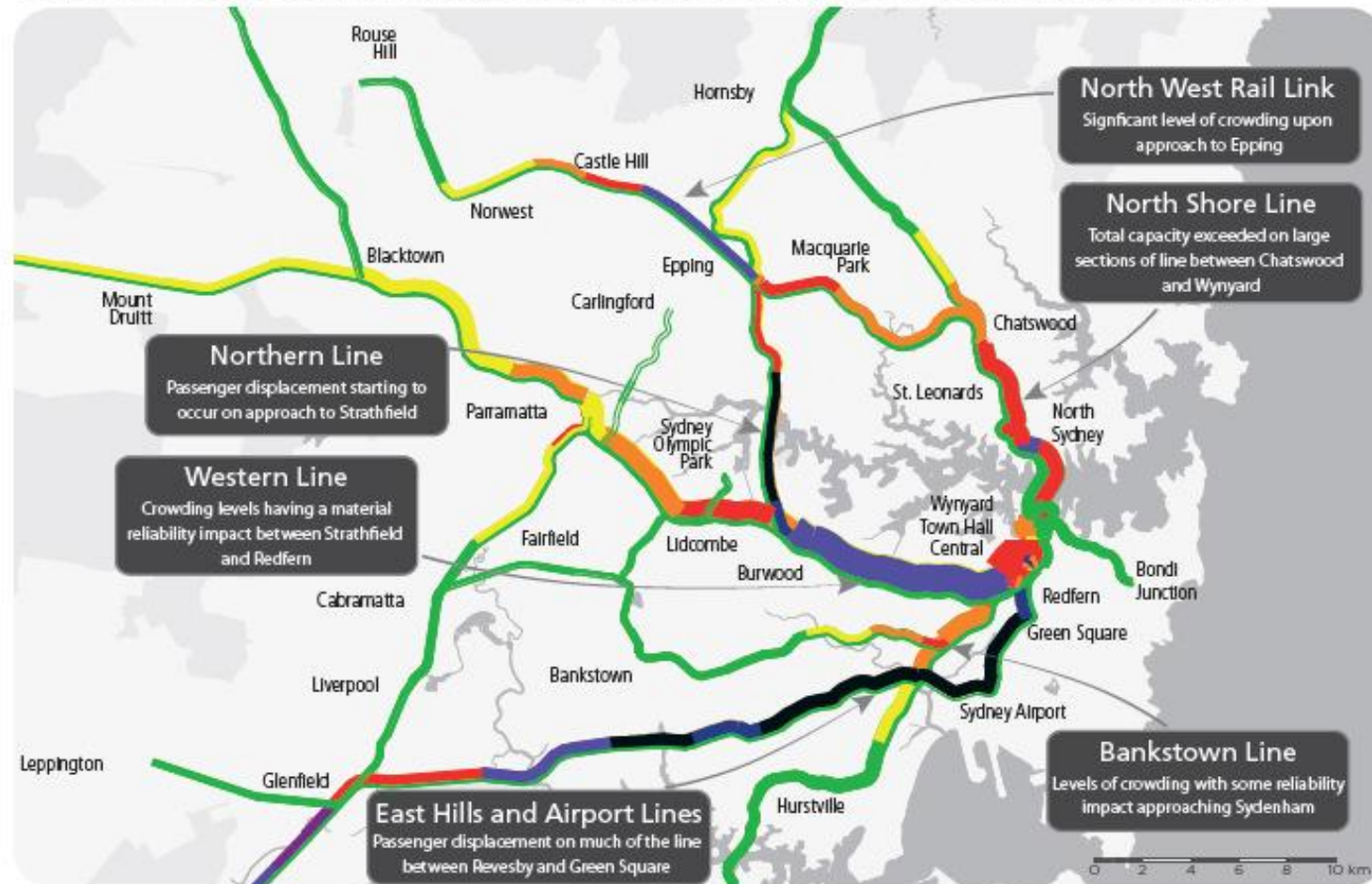
# Expectations

## Extra Persons per Precinct:

- ▶ Parramatta Road corridor - 80,000
- ▶ Bays Precinct - 36,000
- ▶ Evenleigh - 50,000+
- ▶ Waterloo - 40,000
- ▶ Green Square - 50,000
- ▶ Mascot - 20,000+
- ▶ Olympic Park - 20,000+
- ▶ Parramatta - 20,000+
- ▶ Granville - ?

# Heavy Rail





Crowding Level		Description of crowding for double deck trains
<span style="color: green;">■</span>	Very Low	Passengers are mostly seated
<span style="color: yellow;">■</span>	Low	Seated capacity is reached and people start to stand
<span style="color: orange;">■</span>	Moderate	Standing space approaching full for reliable running
<span style="color: red;">■</span>	High	Crowding with some reliability impact
<span style="color: blue;">■</span>	Very High	Crowding starting to have material reliability impact
<span style="color: brown;">■</span>	Passenger displacement	Additional passengers are unable to board the train

Note: The above passenger crowding levels are based on total capacity (including both seated and standing passengers). This is a more generally accepted measure internationally rather than expressing capacity on the basis of seating alone.

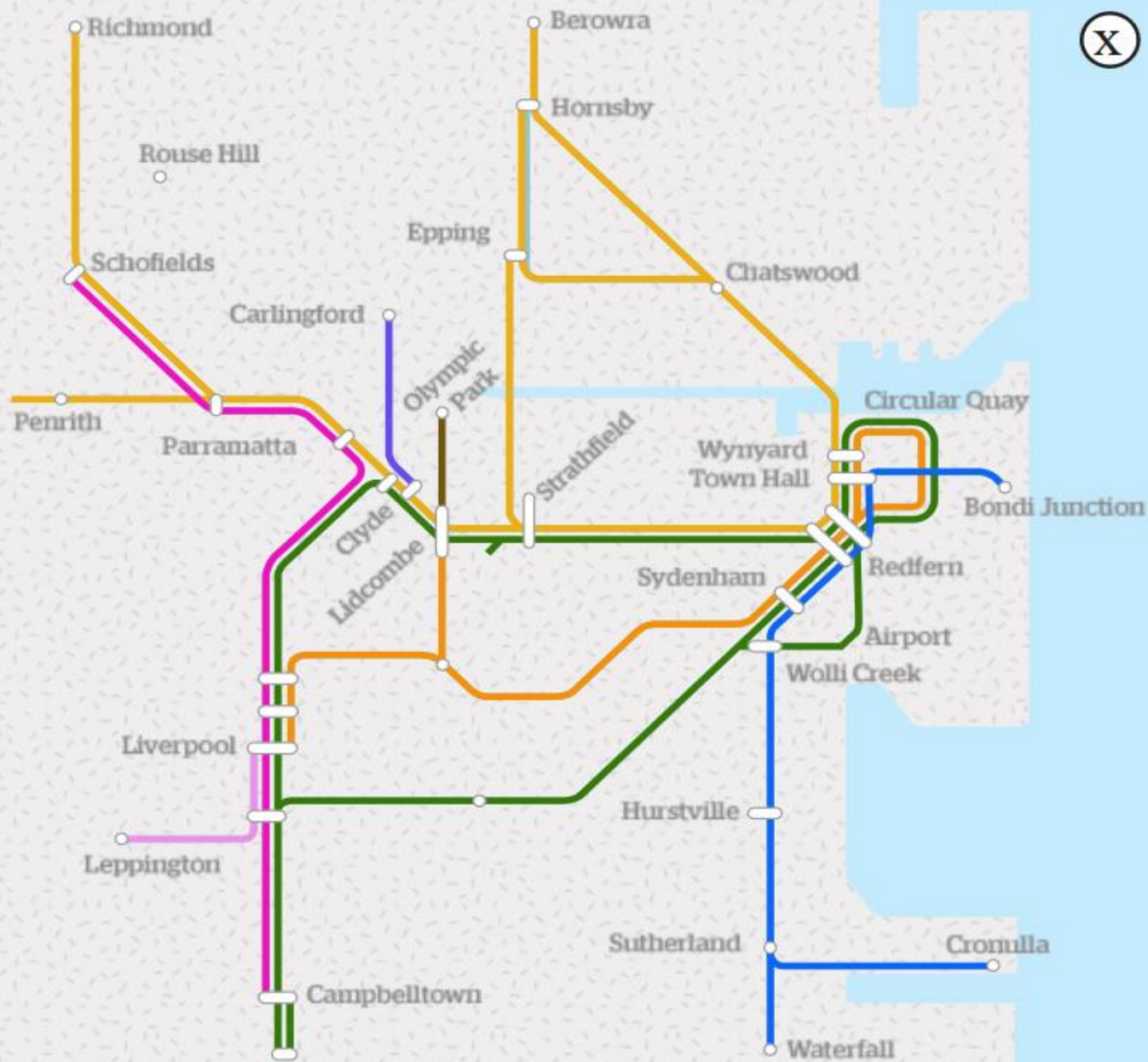
# Sydney's rail future

Possible changes



## THE CURRENT RAIL SYSTEM









- T1** North Shore, Northern and Western lines
- T2** Airport, Inner West and South line
- T3** Bankstown line
- T4** Eastern Suburbs and Illawarra line
- T5** Cumberland line
- T6** Carlingford line
- T7** Olympic Park line
- SW** South-West Rail link

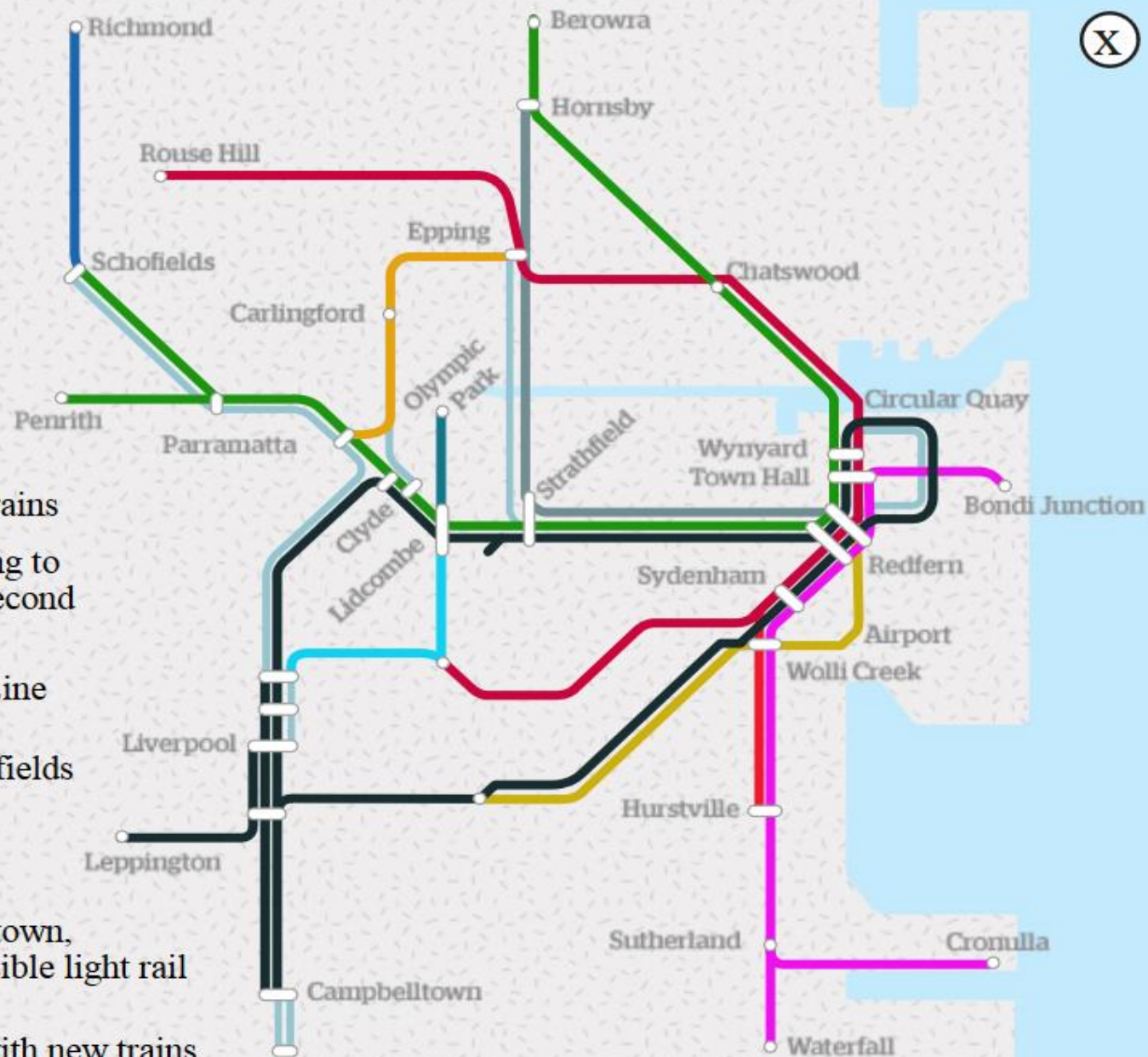




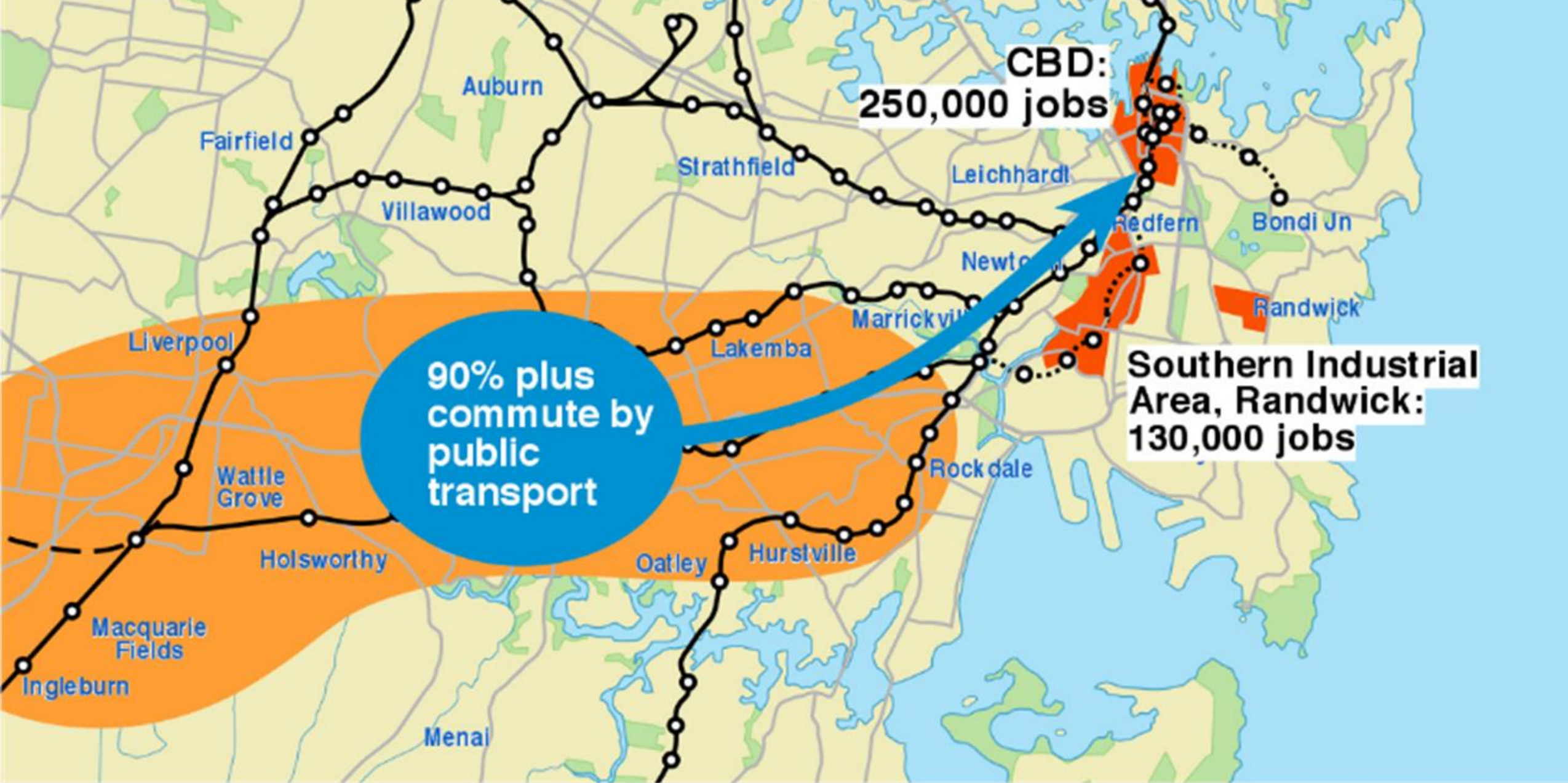
# Sydney's rail future

## Possible changes

-  Campbelltown, East Hills and Inner West Line
-  Northern Line, services terminate at Central
-  Western and North Shore Line, using high capacity new trains
-  North West Rail Link, connecting to Bankstown and Hurstville via second harbour crossing
-  Illawarra and Eastern Suburbs Line
-  Richmond Line, shuttle to Schofields
-  Parramatta to Epping, probably light rail
-  Shuttle services between Bankstown, Lidcombe and Cabramatta, possible light rail
-  Airport Line, shuttle services between Revesby and Central with new trains
-  Olympic Park shuttle

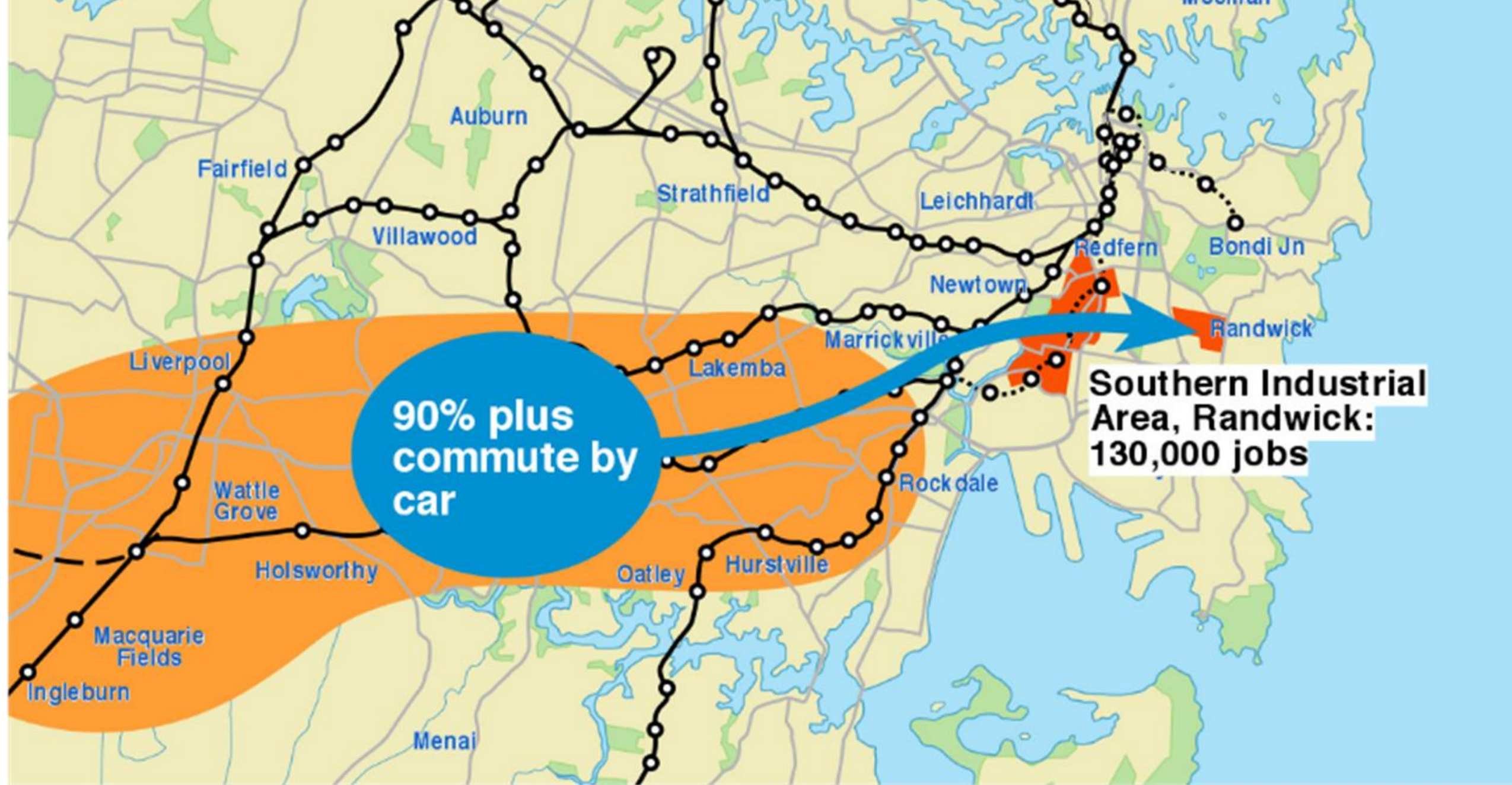






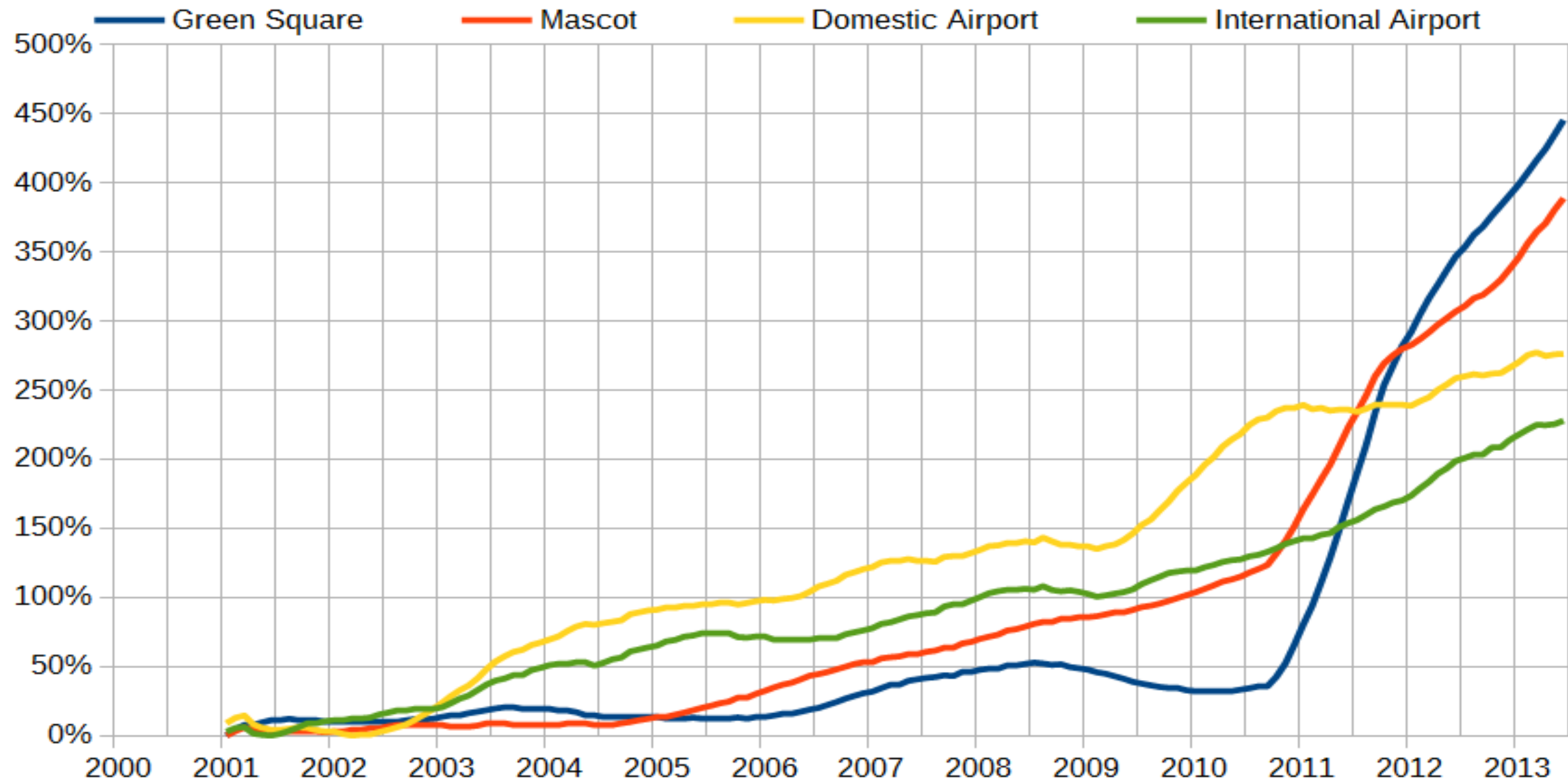
**South-West Sydney's greatest commuter problem:**





**South-West Sydney's greatest commuter problem:**

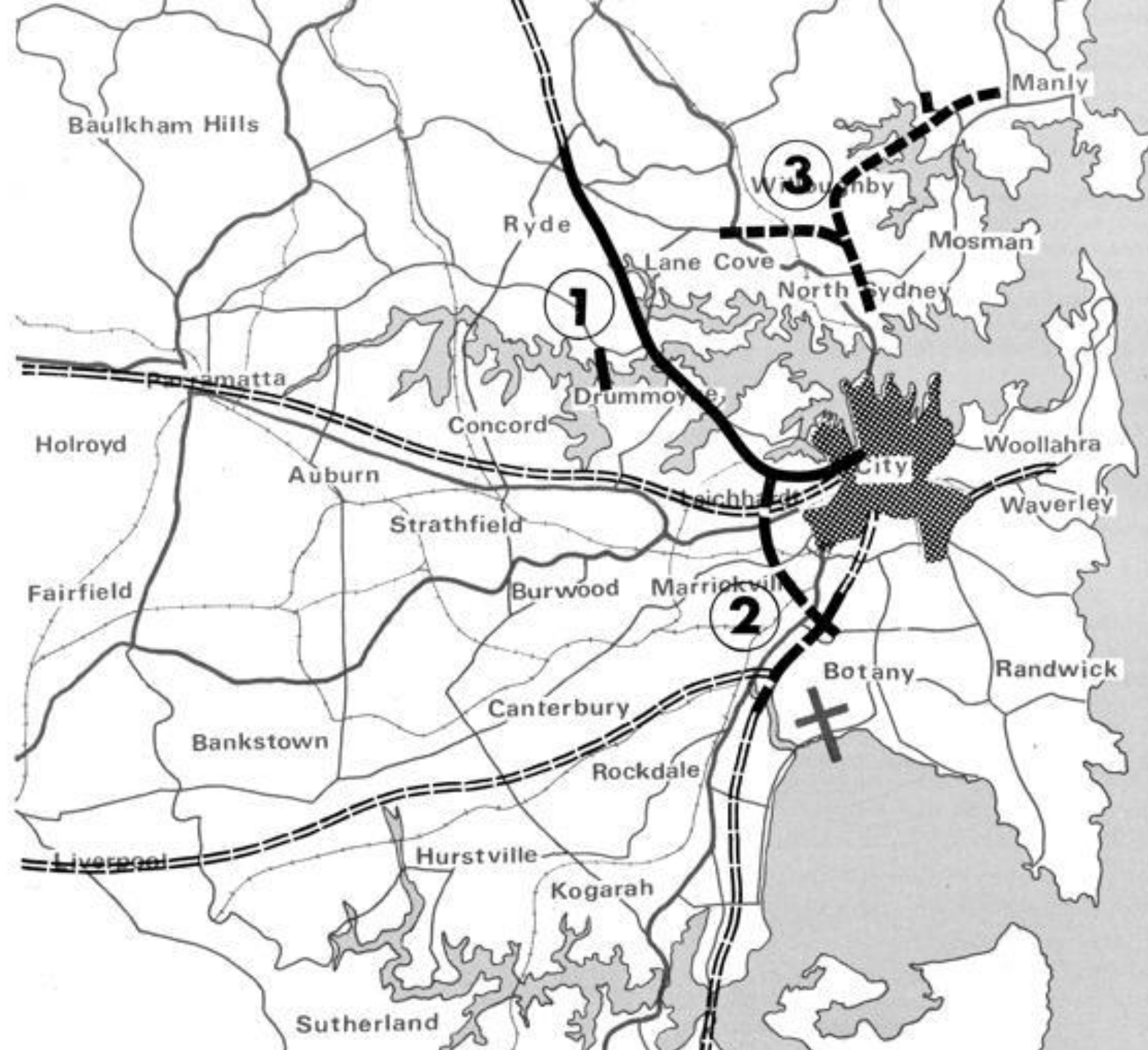
## Passenger Journeys - 12 Month Average





The background features a dark grey gradient on the left and a series of overlapping, semi-transparent green triangles on the right, creating a modern, geometric aesthetic.

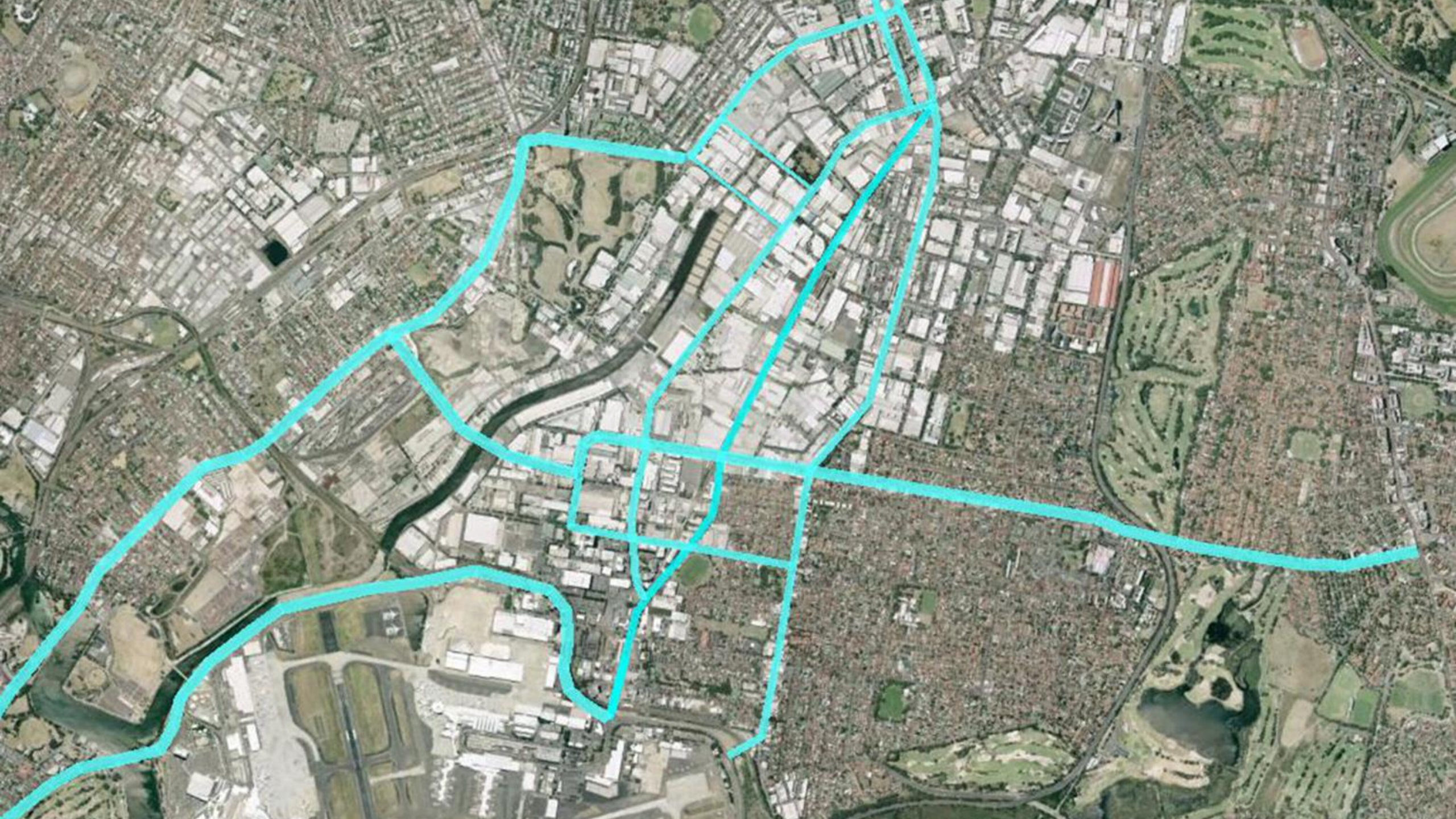
# Westconnex
















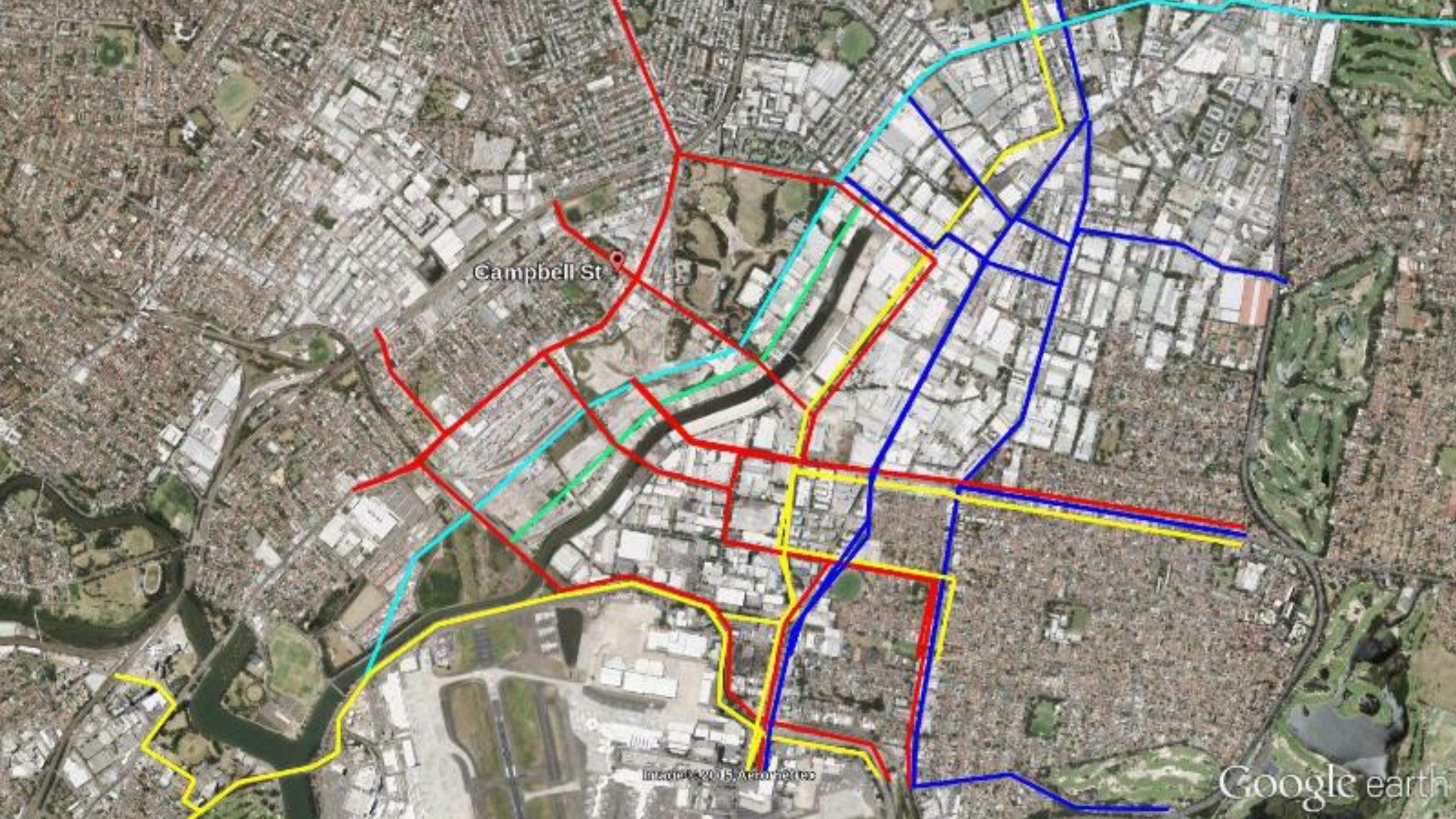
Campbell St

This is an aerial photograph of a city, likely San Francisco, showing a dense urban grid. Overlaid on the map are three distinct colored lines: red, yellow, and blue. The red line starts in the upper left, follows a path through the city, and ends in the lower right. The yellow line starts in the lower left, follows a path through the city, and ends in the upper right. The blue line starts in the upper right, follows a path through the city, and ends in the lower left. The lines appear to be part of a larger network or system. The text 'Campbell St' is visible in the upper left quadrant, and 'Google earth' is in the bottom right corner.

lines of 100 ft. wide road

Google earth



An aerial photograph of a city area, likely San Francisco, showing a dense urban grid. Overlaid on the map are several thick, colored lines: red, yellow, blue, cyan, and green. A red dot is placed on a street labeled 'Campbell St'. The lines appear to represent different transit routes or zones. The map is oriented with North at the top.

Campbell St

lines on 6/6/2011 5:15 AM on the map

Google earth