Transport Infrastructure to Enable Housing Supply Report

INVESTIGATION AREA: WESTERN SYDNEY (DEERUBBIN, GANDANGARA and THARAWAL LAND)

Prepared for Infrastructure Australia

30 October 2025

We acknowledge the Traditional owners and Custodians of the Western Sydney area. We acknowledge their continuing connection to the land through culture and community, and we pay our respects to Elders past, present and future.

Image: Transport for NSW, https://www.transport.nsw.gov.au/projects/current-projects/

Program: Consult Australia Future Leaders
Project: Transport infrastructure to enable housing supply

Meet the ConnectCo Team

Ewa Bundz *Associate Structural Engineer at WSP* *Chartered Structural Engineer with over nine years' experience delivering complex bridge and transport infrastructure projects across Australia. Specialising in structural design, multidisciplinary coordination, and safety-in-design. With expertise in both technical delivery and digital engineering tools, they are committed to creating efficient, sustainable transport solutions.*	*Joaquin Reyes* *Senior Structural Engineer at Geotron* *If numbers could talk, Joaquin would speak their language. Former long-time resident of Western Sydney. With over 11 years' experience across multiple sectors and roles, including work on multiple Western Sydney transport infrastructure projects such as the North-West Metro and station multi-storey car parks. University Medal graduate. Well and truly a nerd.*	*Nick Larin* *Senior Electrical Engineer at Arcadis* *Chartered Electrical Engineer with over ten years' experience spanning transport, education and commercial sectors. With a commitment to fostering a collaborative team environment, Nick continuously seeks opportunities for innovation, focusing on digital solutions and sustainable design practices to meet evolving project demands.*
Aline Carvalhaes *Senior Civil Engineer and Group Manager at Northrop* *Chartered Civil Engineer with over seven years of experience delivering projects in the built environment across Australia.*	*Brian Carolan* *Associate Water Engineer at Jacobs* *Chartered Civil Engineer with experience across Australia, Ireland, the UK, and India. Specialises in project management, water supply, and water resources, delivering sustainable infrastructure solutions in diverse settings.*	*We would also like to acknowledge and extend our gratitude to our group mentor – Rowenna Walker – for her invaluable guidance and support for us in this project.*

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Project Aim

To develop a data-informed methodology that identifies and quantifies key areas of housing growth and assesses the adequacy and capacity of major transport infrastructure across Western Sydney. The aim is to generate insights that support strategic infrastructure investment decisions by identifying gaps between housing demand and transport capacity over a 10-year and 20-year horizon.

Alignment with Infrastructure Australia's Master Plan

This project directly supports **Infrastructure Australia's (IA) strategic objective** of enabling well-located housing supply through the provision of **fit-for-purpose, timely, and coordinated transport infrastructure investment**. It aligns with IA's remit under the *Infrastructure Australia Act 2008* to:

- **Audit the adequacy and capacity** of nationally significant infrastructure,
- **Identify infrastructure gaps and investment priorities**, and
- **Advise government on enabling infrastructure to unlock growth**.

Specifically, this project contributes to the objectives outlined in IA's core products such as the **Infrastructure Priority List**, **National Infrastructure Plan**, and **Annual Budget Statement** by:

- Applying a **data-informed approach** to quantify housing growth and infrastructure need,
- Identifying **spatial gaps** where current or planned transport infrastructure may fall short of supporting housing targets (e.g., under the **National Housing Accord**, which aims to deliver 1.2 million new homes by 2029),
- Offering **insights into prioritisation** of infrastructure investments to improve connectivity, access to jobs, and long-term liveability.

The project also supports IA's broader focus on **enabling infrastructure,** as outlined in the **2023 Infrastructure Policy Statement** and is consistent with federal initiatives like the **Housing Support Program** and **National Urban Policy (2024)**.

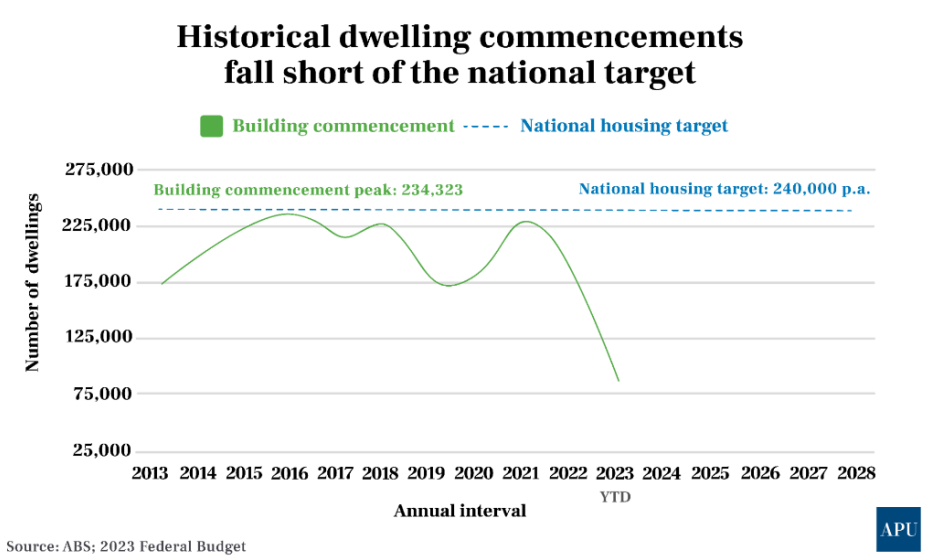
Ultimately, this work helps IA build a **robust national view of infrastructure-readiness for housing growth**, ensuring federal investments are aligned with areas of highest need and opportunity.

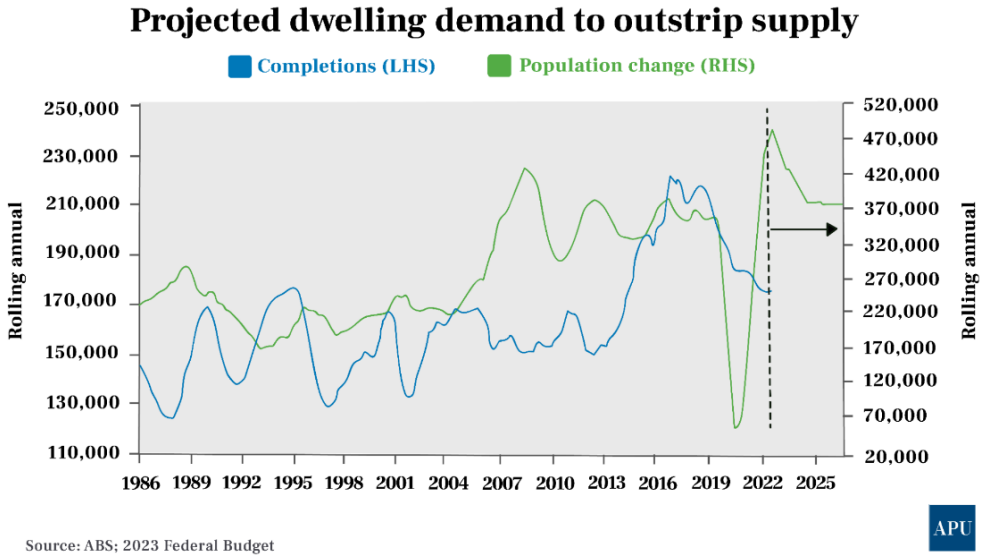
Chapter 1: Background – Australia's Housing Crisis

1.1 National Context

Australia is facing a **significant housing supply and affordability crisis**, which has intensified in recent years due to a combination of economic, demographic, and structural factors. Rapid population growth, supply-side constraints, construction sector pressures, and limited infrastructure coordination have all contributed to a worsening shortage of accessible, affordable, and well-located housing.

In response to this growing challenge, the Australian Government, through the **National Housing Accord (2022)**, has committed to delivering **1.2 million new well-located homes over five years from mid-2024**. However, forecasts from the National Housing Supply and Affordability Council (NHSAC) suggest that demand will fall short of this target, with approximately **871,000 households** expected to form in that timeframe. This mismatch between target and anticipated delivery reveals a deepening crisis that requires urgent, coordinated, and evidence-based intervention.





Source: https://australianpropertyupdate.com.au/apu/adding-fuel-to-the-fire-how-the-australian-government-is-stoking-the-flames-of-the-housing-crisis

1.2 Key Drivers of the Crisis

Several key factors are driving Australia's current housing challenges:

- **Insufficient supply of housing stock**: New housing construction has not kept pace with population growth, particularly in major urban and suburban centres.
- **Poorly sequenced enabling infrastructure**: A lack of transport, utilities, and social infrastructure has delayed or prevented new housing developments in high-growth areas.
- **Construction sector constraints**: Rising material costs, labour shortages, and planning delays have constrained delivery capacity.
- **Geographic and economic imbalances**: Most new housing is not located where it is most needed — near jobs, schools, services, and public transport — leading to affordability and access issues.
- **Rising cost of living and mortgage stress**: Inflationary pressures and interest rate increases have made both home ownership and rental unaffordable for a growing segment of the population.

1.3 Strategic Importance of Enabling Infrastructure

The delivery of new homes alone is not sufficient to address the crisis — these homes must be **connected to transport and essential services** to be viable and liveable. This is the core concept of **enabling infrastructure**.

Enabling infrastructure, particularly **high-capacity transport infrastructure (e.g., heavy rail, light rail, rapid bus networks, and major arterial roads)**, plays a critical role in unlocking housing supply. Without timely infrastructure investment, new dwellings remain unviable or isolated, and growth is shifted away from priority areas.

1.4 ConnectCo's Role

Infrastructure Australia (IA), as the Commonwealth Government's independent advisor, is tasked with **identifying gaps in infrastructure provision**, particularly where these gaps **impede housing growth**. IA's work — including the **Infrastructure Priority List**, **Infrastructure Plan**, and **performance audits** — provides a national evidence base to inform investment and planning decisions.

This project supports IA's strategic mandate by:

- Identifying fast-growing housing areas across an area with high forecasted growth - **Western Sydney**,
- Quantifying the **scale of housing growth relative to transport infrastructure**, and
- Highlighting **gaps where infrastructure delivery is not aligned with housing needs**.

Chapter 2: Methodology Overview

This study applies a structured and evidence-based methodology to analyse population and housing growth in Western Sydney, along with the adequacy of existing and future transport infrastructure to service the growing demand. The approach combines demographic analysis, spatial mapping, and infrastructure evaluation to identify relationships between housing supply, population change, and transport capacity, accessibility and overall adequacy. Each stage builds upon the previous to create a comprehensive and data-driven picture of growth patterns and infrastructure needs across the region, enabling data-informed recommendations to Infrastructure Australia. In turn, this will aid State and Federal governments to address identified gaps in the adequacy of transport infrastructure.

“In 20 years’ time, will Western Sydney need another metro line into Sydney CBD to cope with the demands of increased population and housing growth?”. “Will new employment, cultural and commercial hubs emerge, requiring new high-capacity transport routes”. “Do we need to increase the frequency of services on existing lines to cope with future increased patronage?” To help answer questions such as these, in tandem with in-depth desktop research of publicly available information, *an analysis of actual historical Opal Card data* was used to assess the current and future performance of the passenger rail and Metro network servicing Western Sydney. This intensive data analysis methodology was adopted to provide original insights that have guided our ultimate recommendations.

Overview of following report sections:

Chapter 3: Review of Western Sydney LGAs

The analysis begins with a review of twelve Local Government Areas (LGAs) that make up Western Sydney. This provides a baseline understanding of demographic profiles, economic conditions, land use, and existing urban structure. The review also establishes key differences between mature inner LGAs and outer-growth areas that are undergoing rapid urban expansion.

Chapter 4: Population Growth Predictions

Population forecasts from state and national planning agencies are analysed to identify areas of high growth and emerging population corridors. This step establishes the expected rate and scale of change to 2035, allowing for comparison between LGAs and recognition of areas where growth will place the greatest pressure on housing and transport networks.

Chapter 5: Housing Growth Predictions

Projected dwelling supply and residential development trends are examined to estimate housing capacity and timing. The assessment considers existing housing stock, recent approvals, and forecast completions. This stage enables comparison between current supply and expected future demand, highlighting where housing growth may outpace infrastructure delivery.

Chapter 6: Demographic Raw Data

Insights from our analysis of available demographic data enabled us to establish a baseline of “current demand” of population, housing, travel patterns/destinations, etc amongst Western Sydney LGA’s. Available forecasted demographic data also enabled us to determine population and housing “future demand” for 10-year (2036) and 20-year (2046) projected scenarios.

Chapter 7: Workplaces and Travel Patterns

Employment concentrations and travel behaviours are assessed to understand workforce distribution and commuting flows across the region. This analysis identifies where people live versus where they work, and how this relationship is expected to evolve as new employment centres, such as those linked to the Western Sydney Airport, develop.

Chapter 8: Existing Road Network

The current road network is evaluated to determine its capacity, connectivity, and role in supporting both housing and economic activity. This stage examines the strengths and weaknesses of the existing transport grid, identifying areas with congestion, limited accessibility, or inadequate connections between growth centres.

Chapter 9: Future Road Expansion

The review then considers planned and proposed road network improvements designed to support future population and housing growth. These include arterial expansions and regional connections aimed at improving east–west mobility and access to new employment precincts. The purpose is to assess whether planned upgrades align with identified growth areas.

Chapter 10: Existing Public Transport

The accessibility and service levels of the existing public transport network—rail and bus—are examined to determine coverage and capacity across LGAs. This analysis identifies disparities in access between inner and outer regions and highlights reliance on private vehicles in areas with limited service.

Chapter 11: Future Public Transport

Future transport initiatives are then considered to assess their ability to meet growing travel demand. These include planned improvements to rail, metro, and bus systems that will strengthen regional connectivity and support the shift towards more sustainable travel modes. The analysis focuses on accessibility improvements expected by 2035.

Chapter 12: Detailed Opal Data Assessment of Current and Future Rail Network Performance

A detailed analysis assessed current Sydney Trains and Metro capacity for Western Sydney LGAs into Sydney CBD during the morning peak using Opal data, quantifying congestion, frequency, demand, and seating/crush capacity. Future adequacy for 2036 and 2046 was projected based on demographic growth and added capacity from Metro South West and Metro West extensions.

Chapters 13 & 14: Gap Analysis and Recommendations

Finally, findings are synthesised to identify critical mismatches between housing growth and infrastructure provision. The gap analysis highlights priority areas where transport investment is required to sustain expected growth and where planning coordination could enhance outcomes. Recommendations are then developed to support balanced, evidence-based planning for Western Sydney's future.

Data Considerations, Limitations and Assumptions

This analysis draws on publicly available data from the ABS, NSW Department of Planning and Environment, Infrastructure Australia, and Transport for NSW, alongside local planning documents. While these sources provide a reliable foundation, several limitations exist.

Differences in data years, formats, and spatial scales required standardisation and may affect accuracy. Most forecasts are limited to 2035, and infrastructure project data reflect current planning stages, which may change over time. Public transport usage data and intermodal freight statistics remain incomplete, constraining some aspects of accessibility assessment.

Assumptions were made to estimate population and housing growth where recent data were unavailable. The analysis should therefore be interpreted as indicative and strategic rather than predictive. Despite these constraints, the integrated approach provides a robust framework for understanding growth dynamics and infrastructure readiness across Western Sydney.

The websites profile.id.com.au and forecast.id.com.au were used to obtain demographic estimates and projected forecasts. These are compiled and generated from Australian Bureau of Statistics (ABS) Census data / interim census years' data estimates, along with other sources and methods known to Profile ID. *The ConnectCo team have assumed that the data presented and forecasted by Profile ID is accurate/reasonable*. It is outside the scope of this present study to challenge the technical minutiae of demographic statistics and forecasts. For certain data categories for some LGA's (e.g. some/all data re population and residential dwelling forecasts for Blue Mountains, Hawkesbury, Wollondilly, and more notably Canterbury-Bankstown and Penrith), Profile / Forecast ID did not provide all the data/forecasts as provided for other LGA's. In these cases, we have either left the data blank, or extrapolated the data based on that LGA's 2006-2024 averaged growth rate. These are clearly marked in our data files which are available to IA should they wish to interrogate our analysis in more detail.

The NSW Government Transport Open Data Hub's "ROAM" Rail Opal Assignment Model data for 8-9am on Wednesday 5th March 2025 was selected as the "typical present day" data sample that formed the basis of our detailed train and metro network data analysis. Why was this date selected as the basis of our assessment of the network's current adequacy and capacity? A review of TfNSW Near Real Time "NRT" data indicates that March is one of the busiest months of the year to catch public transport. We note that March is a time when schools, universities and most workers have returned to work/study after the start of the year holiday period. Given the increase of working from home (WFH) post COVID government lockdowns, Mondays and Fridays are generally the most common WFH days, suggesting Tuesdays, Wednesdays and Thursdays as busier days for commuting to work. 8-9am was selected as it represents the busiest "peak hour", with the network most heavily utilised at this time of day.

While the distribution of commuters to various workplace destinations is evolving, our detailed data analysis focused on the commute into Sydney CBD since it remains the most significant “choke point” in the network and generally presents a “worst case” view on the whole network’s performance. Whilst we have adopted a nuanced approach to scaling up future demand in proportion to differences in growth rates amongst the various Western Sydney LGA’s, and whilst we have also allowed for the additional capacity provided by the Metro South West extension to Bankstown and the Metro West line to Westmead, our forecast modelling of the train and metro network servicing Western Sydney has not allowed for drastic changes in distribution of commuters to different workplace destinations. Further details re calculations and assumptions are noted in the relevant section of the report.

Due to time constraints, we acknowledge that we did not repeat our analysis of the current performance of the train and metro network for other dates. We note that this exercise would be interesting to compare results of the network’s performance over a range of dates. It would similarly be interesting to repeat this forecasting exercise after the results of the 2026 Census are released. For our present study, we were limited by the results of the 2021 Census which was taken during a "Lockdown" period and therefore not indicative of normal work and travel patterns, and the results of the 2016 Census which are now quite dated.

The source ROAM data is available via the link below. We note that our data analysis files are also available to IA should they wish to interrogate our analysis in more detail.

https://opendata.transport.nsw.gov.au/data/dataset/roam-rail-opal-assignment-model

We did consider alternative approaches to assessing the performance of the transport network, e.g. rather than focussing on the AM-peak, change the timeframe to daily or greater time frames. However, following a review of previous literature and considering the real lived experience of a commuter, spreading passenger demand out over greater time frames “flattens the curve” quite unrealistically. The AM-peak generally represents the most “stressed” condition of the transport network, more so than the PM-peak since the time band that commuters leave the office is typically stretched versus the more typical 8.30am or 9am start times. The detail available in the ROAM data meant that this detailed approach was possible.

ConnectCo has made all reasonable inquiries that it believes is necessary in preparing this report, but it cannot be certain that all information material to the preparation of this report has been provided to it as there may be information that is not publicly available at the time of its inquiry.

Further, no responsibility is accepted by ConnectCo for any errors, including errors in data supplied or estimated for the purpose of this report.

ConnectCo’s data analysis files are available to view or download via the links below:

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https://docs.google.com/spreadsheets/d/1icnzb0oQRpDtw3_X6JG1Z5l4O5i16TRA/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true

https://docs.google.com/spreadsheets/d/1dnlYMbhsjts0Afm1HUaQ0OqG9GViXK4d/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true

Chapter 3: Profile of Western Sydney LGAs

The estimated resident population of Greater Sydney was approximately 5.56 million as of June 2024 [1], while the population of the Western Sydney constitutes for over half of that population. It is also the fastest growing region in NSW.

This chapter provides a comparative overview of the 13 local government areas (LGAs) within Western Sydney. These areas are diverse in terms of population size, housing growth, infrastructure access, and socioeconomic indicators — making them ideal for assessing the alignment between housing growth and transport infrastructure capacity.

Western Sydney represents the most dynamic and heterogeneous region within Greater Sydney, encompassing a continuum of urban forms — from the dense inner LGAs near Parramatta to the emerging growth corridors stretching toward Camden and Wollondilly. The diversity in settlement patterns, demographic composition, and infrastructure provision reflects the different stages of urban maturity across the region.

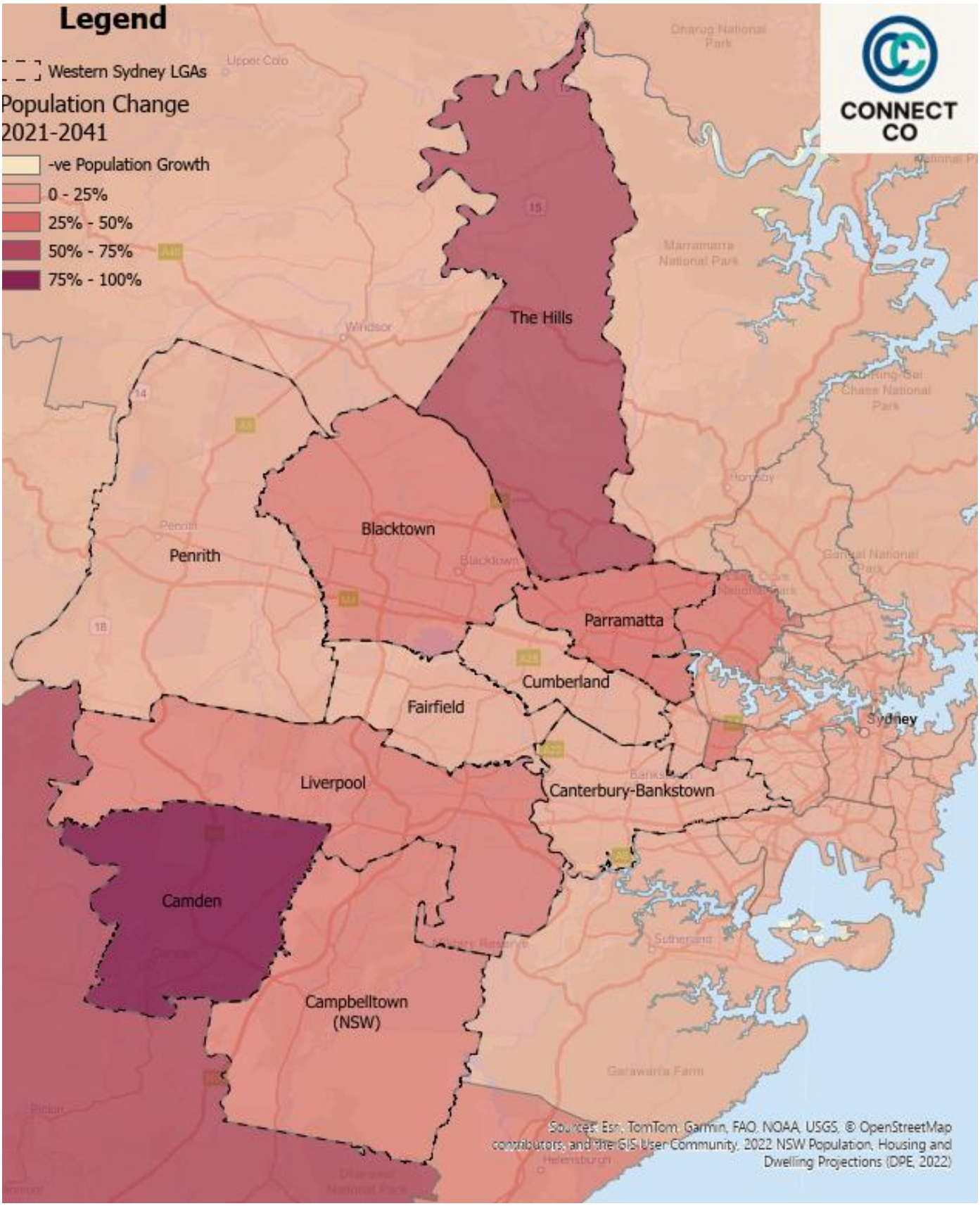

Figure 3 Sydney - LGA Project Population Growth by 2041. Source:
https://portal.data.nsw.gov.au/arcgis/rest/services/NSW_LGA_Projected_Population_at_2041/MapServer

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Spatial and Economic Diversity

The central corridor, anchored by **Parramatta**, **Cumberland**, and **Canterbury-Bankstown**, forms the established urban spine of Western Sydney. These LGAs exhibit high population density, mature infrastructure, and strong employment bases. They function as key transit and commercial hubs that connect the outer suburbs to Greater Sydney's eastern employment markets.

In contrast, the **outer growth LGAs**—including **Camden**, **Liverpool**, **Penrith**, and **Blacktown**—are characterised by rapid housing expansion and emerging town centres. These areas are experiencing significant population influx, driven by greenfield developments and relative housing affordability. However, infrastructure provision often lags behind growth, creating challenges in maintaining accessibility and liveability.

Socioeconomic Patterns

Socioeconomic conditions vary sharply across the region. Inner LGAs tend to have higher rental proportions and greater cultural diversity, reflecting their established urban fabric and concentration of migrant communities. Outer LGAs, while younger on average, exhibit higher home ownership and lower socio-economic indices due to the prevalence of new mortgage-based households. The contrast between high-density renewal areas and expanding suburban estates highlights the need for tailored infrastructure strategies.

Transport Accessibility

Transport accessibility aligns closely with historical rail infrastructure. LGAs such as **Parramatta**, **Cumberland**, and **Canterbury-Bankstown** enjoy strong public transport networks, while the newer growth areas in **Camden**, **Wollondilly**, and parts of **Blacktown** remain heavily car-dependent. This imbalance underscores the importance of future public transport investment to connect outer communities to key employment nodes and educational facilities.

Growth Frontiers and Constraints

The **southern corridor**—comprising **Camden**, **Campbelltown**, and **Wollondilly**—is poised for the most intense future growth, influenced by proximity to the **Western Sydney Airport** and **Bradfield City Centre**. Meanwhile, the **north-west corridor**, including **The Hills Shire**, **Hawkesbury**, and **Blacktown**, continues to evolve with metro access and expanding business parks. Conversely, **Blue Mountains** and **Fairfield** exhibit slower growth trajectories due to geographic or land-use constraints, focusing instead on sustainability and urban renewal.

Strategic Implications

Together, these LGAs form an interdependent metropolitan ecosystem where housing, employment, and infrastructure must advance in parallel. The challenge lies in achieving balance: enabling housing delivery in high-growth corridors while upgrading transport capacity in areas already under pressure. Strategic investment decisions must therefore recognise the differing starting points and growth drivers across Western Sydney to ensure equitable, long-term regional development.

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Table 1 **Summary Table –Current population – Key growth indicators (2024 Estimates)**

LGA [source]	Population (2024 est.)	Median Age	% Renters	Public Transport Access	Housing Growth Potential
Blacktown [2]	439000	34	33	Moderate (heavy rail corridors; coverage gaps in new estates)	Very High
Blue Mountains [3]	80000	45	21	Moderate (intercity rail spine; dispersed settlements)	Low
Camden [4]	140000	33	24	Low (limited high-capacity Public Transport)	Extremely High
Campbelltown [5]	180000	35	33	Moderate (heavy rail to CBD; coverage varies)	High
Canterbury-Bankstown [6]	410000	36	36	High (Bankstown line / Metro conversion)	Medium-High
Cumberland [7]	250000	34	41	High (multiple rail lines)	Low-Medium
Fairfield [8]	211000	39	36	Moderate (rail + buses; crowding)	Low - Moderate
Hawkesbury [9]	69000	39	23	Low-Moderate (Richmond branch; car-oriented)	Medium
Liverpool [10]	251000	34	34	Moderate-High (heavy rail; future Metro/airport links)	Very High
Parramatta [11]	292000	35	44	Very High (heavy rail + light rail + Metro)	High
Penrith [12]	257000	35	32	Moderate (heavy rail; motorway access)	High
The Hills Shire [13]	190000	38	20	High (Sydney Metro Northwest)	Medium
Wollondilly [14]	60000	37	16	Low (limited high-capacity Public Transport)	High

Sources:

[1] https://profile.id.com.au/australia/about?WebID=260)
[2] https://profile.id.com.au/blacktown/
[3] https://profile.id.com.au/cws/about?WebID=110
[4] https://profile.id.com.au/cws/about?WebID=120
[5] https://profile.id.com.au/campbelltown
[6] https://profile.id.com.au/canterbury-bankstown
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[11] https://profile.id.com.au/parramatta/
[12] https://profile.id.com.au/cws/about?WebID=200
[13] https://profile.id.com.au/the-hills/
[14] https://profile.id.com.au/wollondilly/

Chapter 4: Population Density and Growth Dynamics in Western Sydney

Western Sydney, encompassing 13 Local Government Areas (LGAs), represents the demographic heart of Greater Sydney. Together, these LGAs accommodate over half of the metropolitan population, reflecting both the historical westward expansion of the city and its ongoing role as the primary region for accommodating Sydney's population growth.

Population Density and Settlement Patterns

The average population density across the Western Sydney LGAs is approximately **1,350 persons per square kilometre**, although this figure conceals considerable variation between the established inner areas and the outer growth corridors. The **highest densities** are found in **Canterbury-Bankstown** and **Cumberland** (around 3,500 persons/km^2 each), followed by **Parramatta** (~3,300), **Fairfield** (~2,100), and **Blacktown** (~1,800).

While **Blacktown**'s density is relatively high, it is not driven by vertical development but by extensive suburban subdivisions. These areas feature detached housing on compact lot sizes — a characteristic typology of Western Sydney's greenfield estates. This low- to mid-rise horizontal form of development has resulted in substantial population concentration without the urban scale typically associated with high-density regions.

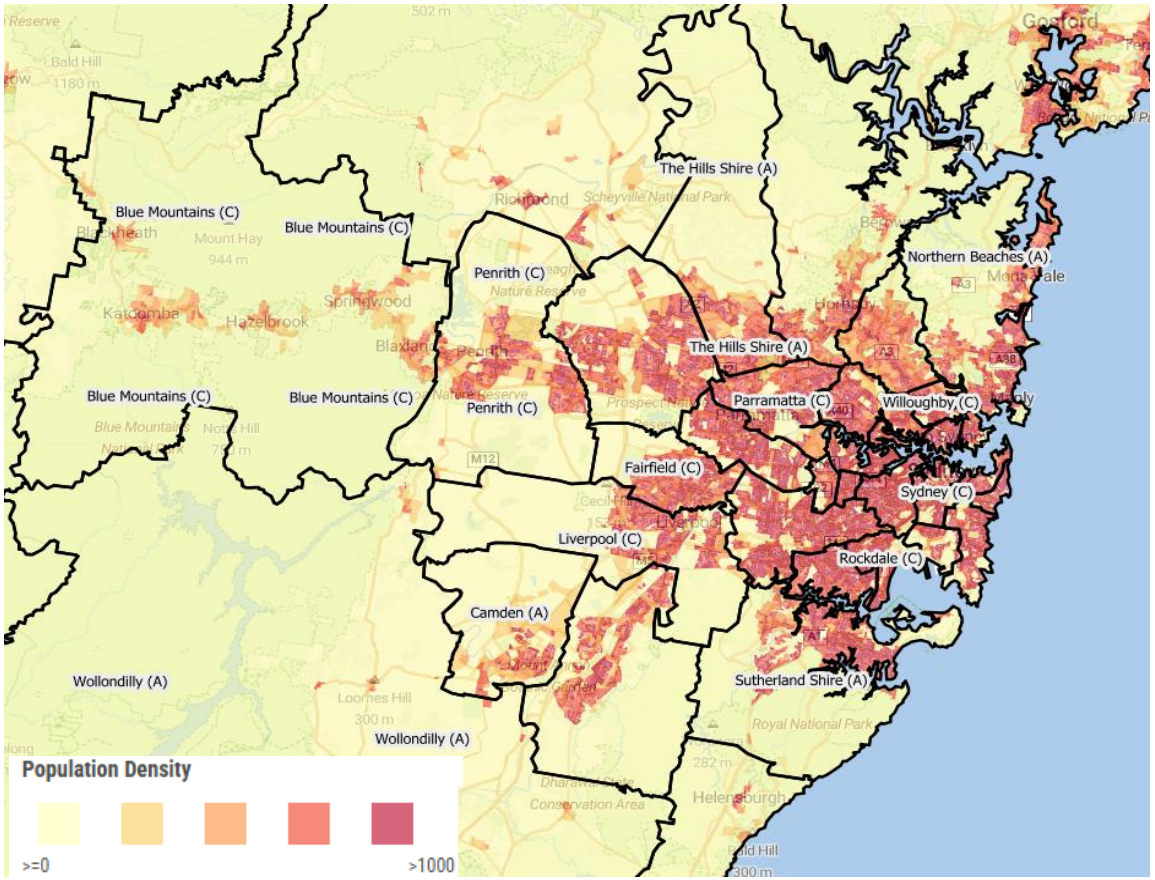

Figure 4 Greater Sydney population density (source: https://mangomap.com/franchise-demo/maps/88272/NSW-Population-Map#)

This settlement pattern reflects a broader Western Sydney trend: growth is predominantly accommodated through suburban expansion rather than inner-city densification. In contrast, the inner LGAs, such as **Cumberland** and **Canterbury-Bankstown**, exhibit mature urban fabrics where redevelopment and infill provide the limited capacity for further population increase.

Population Growth Dynamics

Population growth across Western Sydney is shaped by a complex interplay of **land supply**, **migration**, and **infrastructure investment**. LGAs with significant undeveloped land and strong planning frameworks—such as **Camden**, **Liverpool**, and **Wollondilly**—are currently experiencing the most rapid increases in population. Their inclusion within state-designated **Growth Areas**, combined with major transport and employment initiatives like the **Western Sydney Aerotropolis**, has made them focal points for residential expansion and urban development.

Blacktown and **Penrith** represent a hybrid growth pattern, combining **greenfield expansion** at the urban fringes with **urban renewal** around established transport nodes. This dual dynamic allows for continued population growth while enhancing connectivity and density near rail corridors and emerging centres. Similarly, **Parramatta** continues to strengthen its role as Sydney's "second CBD," with rapid residential and commercial development supported by major transport investments such as the Parramatta Light Rail and Sydney Metro West.

In contrast, **Blue Mountains** experiences very limited growth due to its extensive environmental protections and national park coverage. **Fairfield** and **Cumberland**, already highly urbanised, have minimal remaining land supply and therefore focus on small-scale infill and redevelopment. **Hawkesbury** and **The Hills Shire** show moderate growth, driven by targeted releases in precincts like **Box Hill** and **North Kellyville**, though physical constraints such as floodplains and topography limit further expansion.

Summary and Implications

Western Sydney's demographic landscape is defined by clear spatial contrasts: dense, transit-accessible inner LGAs; rapidly expanding suburban growth corridors; and environmentally constrained outer fringes. The region's average density and population growth are therefore unevenly distributed, with housing supply and infrastructure delivery often advancing at different paces.

Areas where **land availability**, **infrastructure provision**, and **planning coordination** align are achieving the highest growth outcomes. Conversely, regions with limited capacity or constrained infrastructure networks are experiencing slower change. This divergence underscores the need for integrated planning that aligns **housing development**, **transport access**, and **service delivery** to ensure that Western Sydney's growth remains both sustainable and equitable.

Table 2 **Population growth predictions**

LGA	2024 Estimated Population	2036 Projected Population	2046 Population Forecast	Projected Growth (%)	Priority Level	Growth Drivers / Comments
Blacktown	439,000	506,588	572,860	28.8	Very High	Strong infill and urban renewal; ongoing medium-high density developments near transport hubs
Blue Mountains	80,000	81,177*	83,133*	3.5	Low	Limited developable land due to national park; minimal greenfield expansion
Camden	140,000	187,961	257,172	51.5	Extremely High	Significant greenfield expansion; major master planned estates in South West Growth Area
Campbelltown	180,000	220,037	242,238	12.2	High	Urban renewal and moderate greenfield; expansion in south-east precincts
Canterbury-Bankstown	410,000	443,138	N/A	10.9	Medium-High	Urban infill and higher density redevelopment; key strategic centres growth
Cumberland	250,000	302,453	340,122	7.1	Low-Medium	Infill development; transit-oriented development near Parramatta Road and rail corridors
Fairfield	211,000	221,014	229,231	4.4	Low-Moderate	Limited greenfield; some infill and medium density redevelopment
Hawkesbury	69,000	73,793*	78,320*	8.3	Medium	Greenfield developments in North West Growth Area; floodplain constraints in parts
Liverpool	251,000	316,961	352,811	24.7	Very High	Major greenfield expansion in Western Sydney Aerotropolis precinct; significant urban growth
Parramatta	292,000	349,591	412,627	14.1	High	High-density infill near Parramatta CBD; transit-oriented development
Penrith	257,000	272,223*	314,801*	15.9	High	Mixed greenfield and infill in North West Growth Area; urban renewal near Penrith CBD
The Hills Shire	190,000	273,482	326,725	16.9	Medium	Greenfield estates in North Kellyville and Box Hill; moderate infill
Wollondilly	60,000	87,245	N/A	26.2	High	Significant greenfield development; part of South West Growth Area

*Due to insufficient data population growth calculated based on the linear projection based in the current population growth.

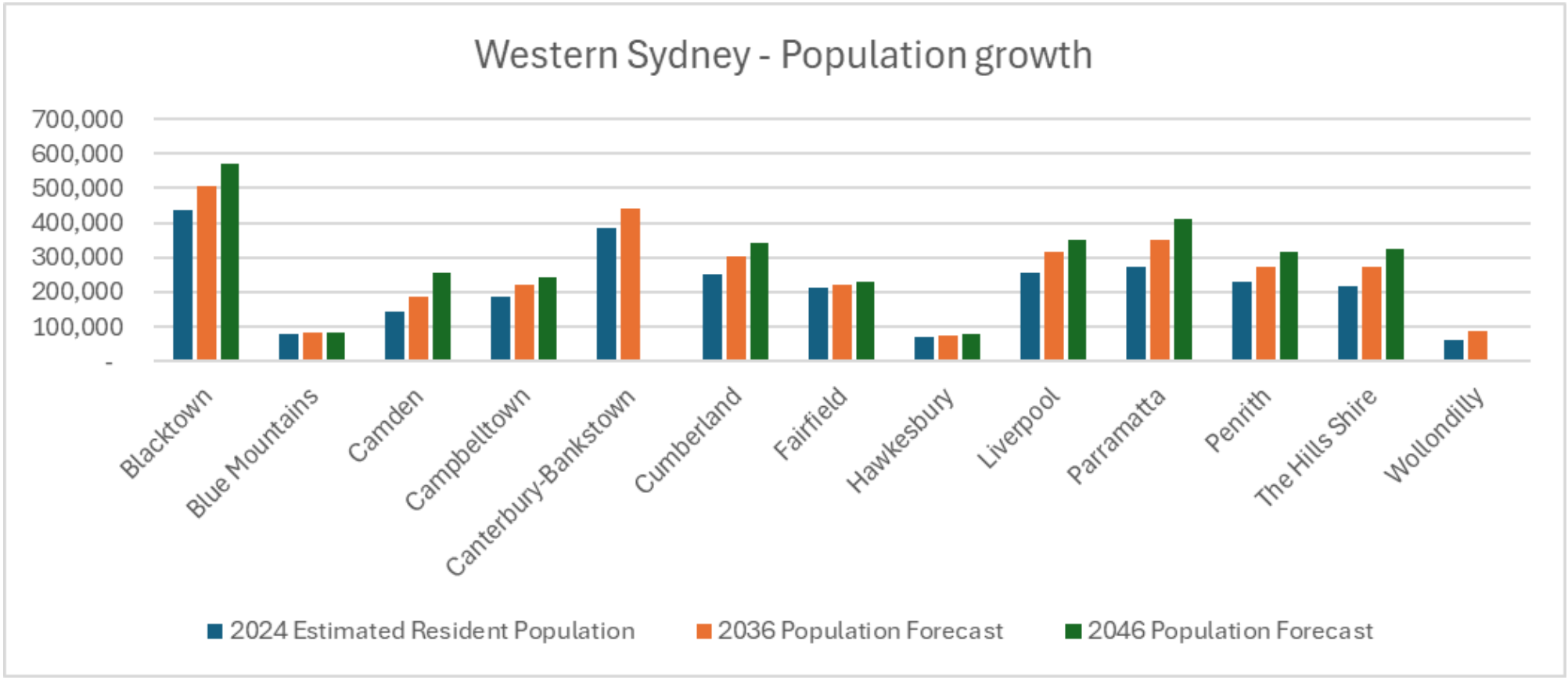

Figure 5 Western Sydney - Population growth diagram

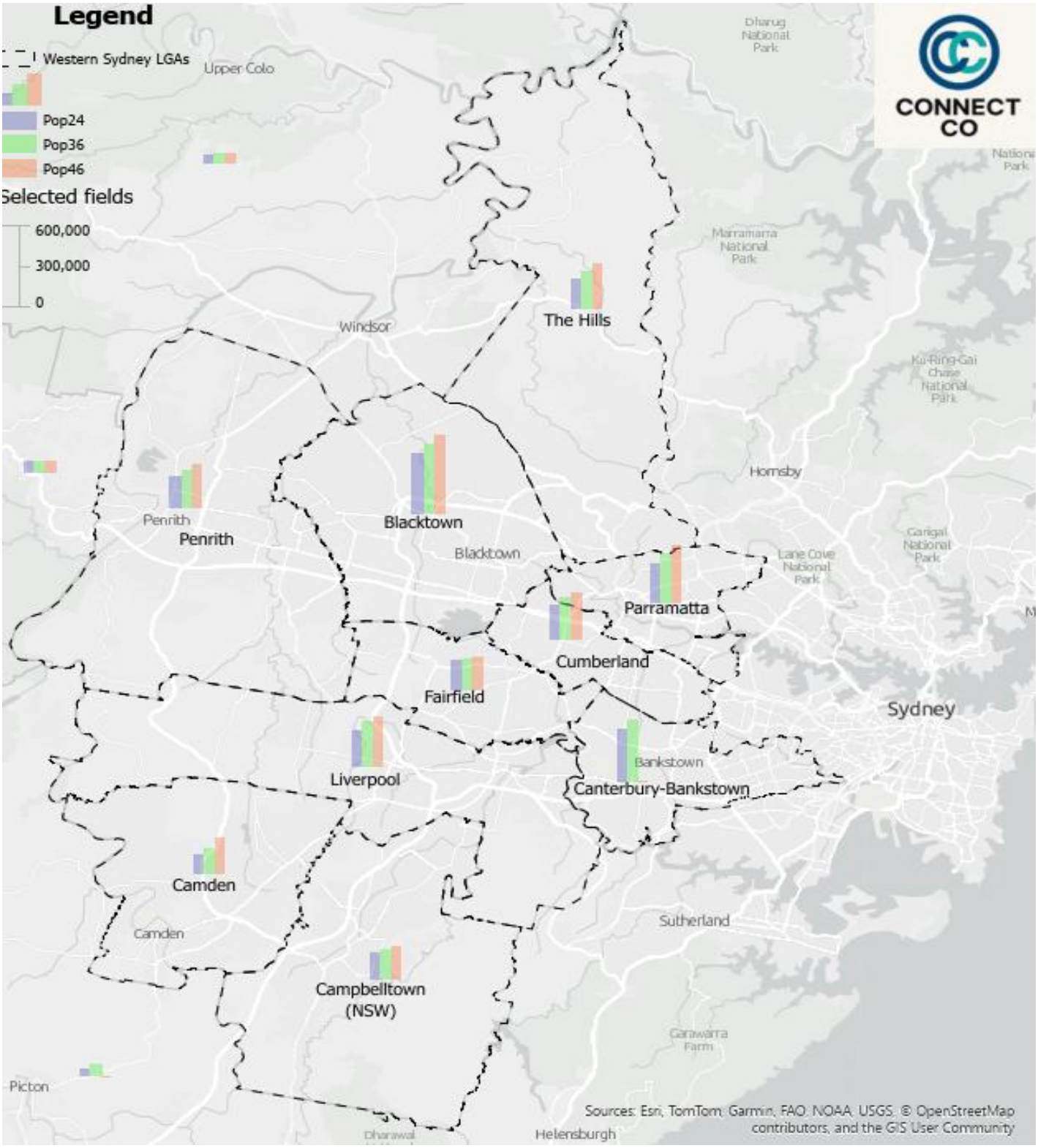

Figure 6 Western Sydney - Population growth map

Chapter 5: Housing growth and predictions

Overview

Housing development across Western Sydney mirrors the region's broader demographic and spatial dynamics — with significant variation in both scale and typology between inner-metropolitan LGAs and emerging greenfield growth areas. Current and forecast dwelling numbers from 2025 to 2046 indicate that growth is strongest where new land release, planning frameworks, and infrastructure investment converge. The data also reveal a gradual shift from detached dwellings toward medium- and high-density forms, especially around established centres and transport corridors.

Regional Patterns of Growth

Across the thirteen Western Sydney LGAs, total residential dwellings are projected to increase substantially between **2025 and 2046**, with the region's housing stock expanding by more than 30 percent overall. Growth trajectories, however, are uneven.

- **Blacktown** and **Canterbury-Bankstown** currently lead in total housing numbers (approximately 147,000 and 142,000 dwellings in 2025 respectively) and are forecast to remain dominant through steady but moderate growth. By 2036, these LGAs will add roughly 30,000 and 18,000 dwellings, reflecting ongoing infill and suburban intensification.
- **Camden** stands out as the region's fastest-growing LGA, with total dwellings forecast to double from about 46,000 in 2025 to over 90,000 by 2046. This reflects its role in the South-West Growth Area, driven by large master-planned communities and the Western Sydney Aerotropolis.
- **Wollondilly**, while smaller in absolute terms, will also see substantial proportional growth, with dwelling numbers increasing by nearly 70 percent by 2046.
- **Parramatta**, **Liverpool**, and **The Hills Shire** form the core of mid-tier growth, each expected to gain between 20,000 and 30,000 dwellings by 2036. These LGAs combine redevelopment around key transport hubs with new suburban precincts, reinforcing their strategic importance in Sydney's multi-centric structure.
- **Fairfield**, **Cumberland**, and **Campbelltown** show slower housing growth, limited by existing urban saturation and reliance on infill rather than new land supply.
- **Blue Mountains** and **Hawkesbury** maintain the lowest projected dwelling increases due to geographic and environmental constraints.

Dwelling Typologies and Urban Form

Western Sydney remains predominantly **low-rise**, with detached houses representing about **75 to 80 percent** of total dwellings. However, recent trends signal a gradual transition toward higher-density forms in established centres.

- The share of **medium- and high-density dwellings** averages **25 percent region-wide**, led by **Parramatta (63 %)**, **Cumberland (49 %)**, and **Canterbury-Bankstown (46 %)** — all areas undergoing significant apartment and townhouse development.
- By contrast, **Camden**, **Wollondilly**, and **The Hills Shire** maintain the lowest densities, with detached housing exceeding 90 percent of the total stock. These LGAs represent Sydney's contemporary suburban frontier, characterised by compact-lot subdivisions rather than vertical density.
- **Liverpool** and **Fairfield** show balanced housing diversity, each with roughly 30 percent of their dwellings in medium- and high-density formats.

This spatial variation reflects the interplay between land economics, planning frameworks, and market demand — with denser housing emerging where public transport access and employment proximity support higher land values.

Population–Housing Relationship

The correlation between population size and dwelling counts remains strong, though the number of persons per dwelling varies between inner and outer LGAs. Denser LGAs like **Parramatta** and **Cumberland** accommodate more residents per square kilometre due to apartment living and smaller household sizes, while outer LGAs such as **Camden** and **Wollondilly** have fewer persons per household but much higher land consumption.

The **average population density** of **~1,350 persons/km^2** across Western Sydney highlights the contrast between inner-city compactness and suburban sprawl. For example, **Blacktown's** density of around 1,800 persons/km^2 arises not from towers but from tight suburban layouts, illustrating the region's horizontal growth model.

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Key Insights

1. **Camden and Wollondilly** are projected to experience the highest percentage growth in dwellings and population, positioning them as the next major residential frontiers.
2. **Blacktown, Liverpool, and Parramatta** continue to absorb large absolute increases, reflecting their centrality to both housing and transport networks.
3. **Fairfield, Blue Mountains, and Hawkesbury** will see minimal new housing supply, reinforcing the region's spatial imbalance.
4. The overall trend suggests a **progressive diversification of dwelling types**, with gradual densification around key transport and employment centres and suburban expansion elsewhere.

Conclusion

Housing growth in Western Sydney through to 2046 will be driven by a mix of **greenfield expansion** and **urban renewal**, underpinned by strategic infrastructure delivery. The challenge for planners and policymakers will be to balance this growth with equitable access to transport, services, and employment — ensuring that the region's expanding population is supported by infrastructure that keeps pace with its housing supply.

LGA	Housing Stock 2024 (est.)	New Dwelling Approvals (annual avg.)	Density (Dwellings/Ha)	Growth 2016-2024 (%)	Projected Growth 2024-2035 (%)	Infill vs Greenfield (%)
Blacktown	145000	2800	18	25	29	40 / 60
Blue Mountains	31000	200	4	1	3	90 / 10
Camden	46000	3500	12	87	57	15 / 85
Campbelltown	67000	1200	14	15	14	30 / 70
Canterbury-Bankstown	137000	1800	20	14	11	70 / 30
Cumberland	87000	1000	22	14	8	80 / 20
Fairfield	70000	600	17	6	4	75 / 25
Hawkesbury	26000	300	6	3	9	40 / 60
Liverpool	86000	2600	15	23	26	25 / 75
Parramatta	102000	2200	28	22	15	85 / 15
Penrith	89000	1800	16	25	17	45 / 55
The Hills Shire	65000	1200	12	12	18	35 / 65
Wollondilly	21000	700	8	22	27	20 / 80

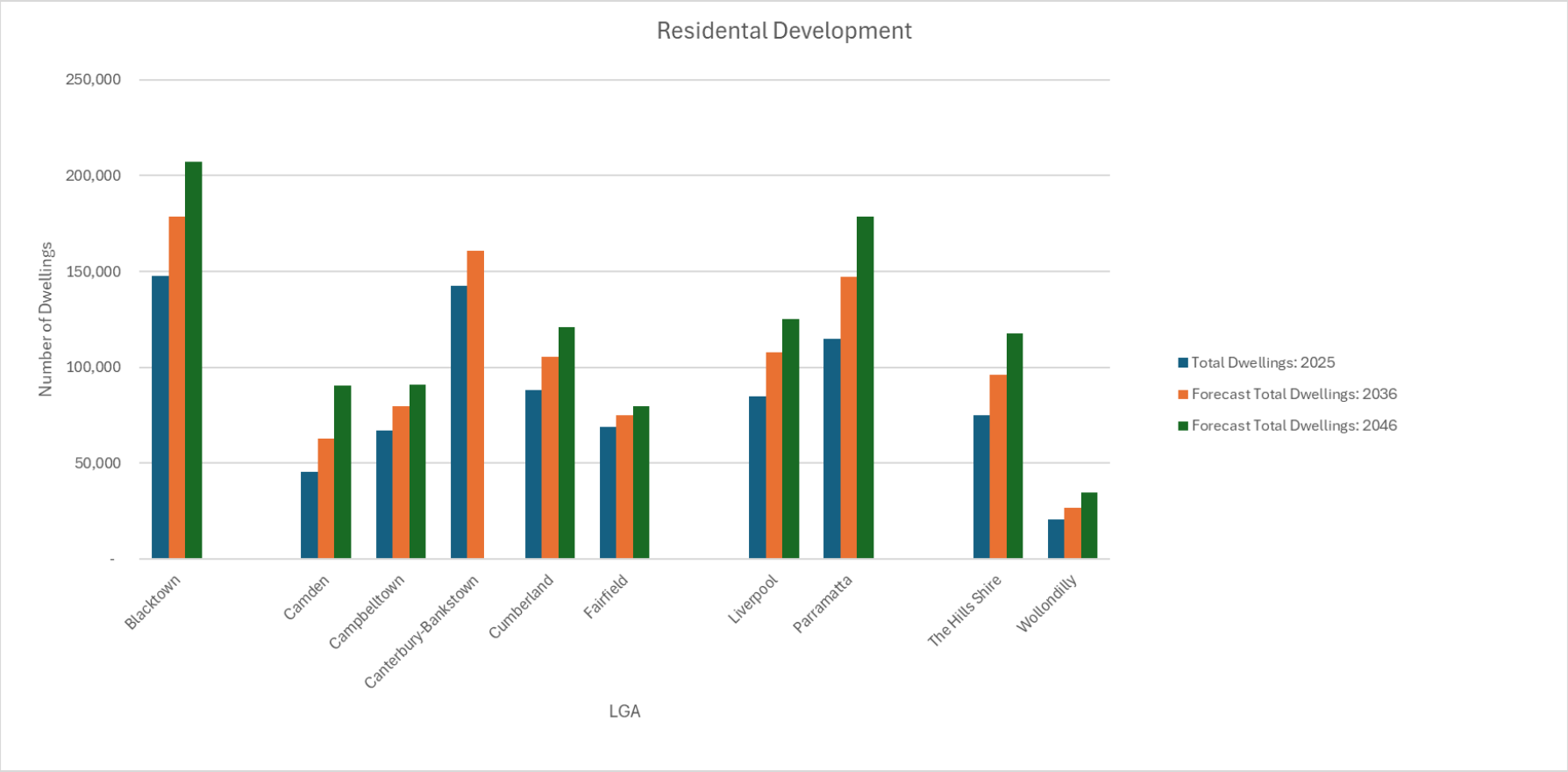

*Figure 7 Western Sydney – Housing growth diagram (*Blue Mountains, Hawkesbury and Penrith data not available)*

Source: https://forecast.id.com.au/blacktown/residential-development https://forecast.id.com.au/camden/residential-development https://forecast.id.com.au/campbelltown/residential-development https://forecast.id.com.au/canterbury-bankstown/residential-development https://forecast.id.com.au/cumberland/residential-development	https://forecast.id.com.au/fairfield/residential-development https://forecast.id.com.au/liverpool/residential-development https://forecast.id.com.au/parramatta/residential-development https://forecast.id.com.au/the-hills/residential-development https://forecast.id.com.au/wollondilly/residential-development

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This report will focus on the following areas:

1. **Western Sydney Aerotropolis and Surrounding Area:**
   - **Suburbs/Precincts**: **Leppington, Oran Park, Austral, and Bringelly**.
   - **Drivers**: The construction of the airport, new road networks (e.g., M12 motorway), and future Sydney Metro - Western Sydney Airport line.
2. **North West Growth Area:**
   - **Suburbs/Precincts: Rouse Hill, Box Hill, Riverstone, Schofields, and Marsden Park.**
   - **Drivers:** The development is largely driven by the Sydney Metro Northwest line, which has significantly improved connectivity to the rest of Sydney.
3. **South West Growth Area:** Similar to the North West, this is another significant corridor with a focus on greenfield development.
   - **Suburbs/Precincts: Leppington, Oran Park, Catherine Field, and parts of Liverpool.**
   - **Drivers:** The South West Rail Link has been a major enabler, and future road upgrades and proximity to the Aerotropolis are further accelerating development.
4. **Parramatta and Central River City:**
   - **Suburbs/Precincts: Parramatta, Camellia, Rosehill, and the Parramatta Road Growth Corridor.**
   - **Drivers**: The development of Parramatta Square, major infrastructure projects e.g. Sydney Metro West and Parramatta Light Rail.
5. **Penrith and the Western Parkland City:**
   - **Suburbs/Precincts: Penrith, St Marys, and surrounding suburbs.**
   - **Drivers**: The area's proximity to the new airport, major road networks (M4), and its own local economy, which includes a growing health and education precinct, make it a focal point for development.

These areas are located in the following LGAs:

- Camden Council
- Liverpool Council
- The Hills Shire Council
- Blacktown Council
- City of Parramatta Council
- Penrith City Council

Chapter 6: Demographic Raw Data

This chapter presents the raw demographic data (in tabular and graphical formats) and corresponding source references of said data, that was used to facilitate our descriptive assessment of the characteristics and growth of the 13 Western Sydney LGA's. Growth rates (in relative and in absolute magnitudes) have also been calculated and presented in this section.

This data was also used to establish a baseline of "current demand" of population, housing, etc amongst Western Sydney LGA's, and the forecasted data also enabled us to determine population and housing "future demand" for 10-year (2036) and 20-year (2046) projected scenarios. These numbers were used as inputs in our forecast assessment of the train and Metro network presented in Chapter 12.

The following key statistics are presented in this section for each of the 13 Western Sydney LGAs:

1. 2024 Estimated Resident Population
2. 2036 and 2046 Population Forecasts
3. Forecast Residential Development (Total Dwellings): 2025, 2036 and 2046
4. 2021 Census % Dwelling Types
5. 2024 Estimated Resident Population Density (persons per square km)
6. 2016 Census % of LGA Main Method Travel to Work
7. 2021 Census Residents' Place of Work

We note the following demographic characterisation of key LGAs:

1. Blacktown and Canterbury-Bankstown: big LGAs with modest future growth
2. Parramatta, Liverpool and The Hills: medium sized LGAs with high growth
3. Camden: modest sized LGA with fastest rate of growth

Should the reader wish to interrogate the demographic data and our corresponding calculations in further detail, you may download our file from the link below.

https://docs.google.com/spreadsheets/d/1icnzb0oQRpDtw3_X6JG1Z5l4O5i16TRA/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true

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	Ref 1	Ref 2	Ref 2		
LGA	2024 Estimated Resident Population	2036 Population Forecast	2046 Population Forecast	Ref 1	Ref 2
Blacktown	438,843	506,588	572,860	https://profile.id.com.au/blacktown/population-estimate	https://forecast.id.com.au/blacktown/population-summary
Blue Mountains	78,891	81,177	83,133	https://profile.id.com.au/cws/population-estimate?WebID=110	Extrapolation based on 2006-2024 average growth rate of 0.24%
Camden	141,133	187,961	257,172	https://profile.id.com.au/cws/population-estimate?WebID=120	https://forecast.id.com.au/camden/population-summary
Campbelltown	188,303	220,037	242,238	https://profile.id.com.au/campbelltown/population-estimate	https://forecast.id.com.au/campbelltown/population-summary
Canterbury-Bankstown	385,242	443,138	-	https://profile.id.com.au/canterbury-bankstown/population-estimate	https://forecast.id.com.au/canterbury-bankstown/population-summary
Cumberland	252,399	302,453	340,122	https://profile.id.com.au/cumberland/population-estimate	https://forecast.id.com.au/cumberland/population-summary
Fairfield	212,210	221,014	229,231	https://profile.id.com.au/fairfield/population-estimate	https://forecast.id.com.au/fairfield/population-summary
Hawkesbury	68,704	73,793	78,320	https://profile.id.com.au/cws/population-estimate?WebID=170	Extrapolation based on 2006-2024 average growth rate of 0.60%
Liverpool	254,905	316,961	352,811	https://profile.id.com.au/liverpool/population-estimate	https://forecast.id.com.au/liverpool/population-summary
Parramatta	274,956	349,591	412,627	https://profile.id.com.au/parramatta/population-estimate	https://forecast.id.com.au/parramatta/population-summary
Penrith	228,661	272,223	314,801	https://profile.id.com.au/cws/population-estimate?WebID=200	Extrapolation based on 2006-2024 average growth rate of 1.46%. Calculated population estimates are likely overestimated.
The Hills Shire	215,612	273,482	326,725	https://profile.id.com.au/the-hills/population-estimate	https://forecast.id.com.au/the-hills/population-summary
Wollondilly	59,782	87,245	-	https://profile.id.com.au/wollondilly/population-estimate	https://forecast.id.com.au/wollondilly

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	Ref 3	Ref 3	Ref 3	
LGA	Forecast Residential Development (Total Dwellings): 2025	Forecast Residential Development (Total Dwellings): 2036	Forecast Residential Development (Total Dwellings): 2046	Ref 3
Blacktown	147,575	178,396	207,214	https://forecast.id.com.au/blacktown/residential-development
Blue Mountains	-	-	-	Data not available
Camden	45,552	62,926	90,379	https://forecast.id.com.au/camden/residential-development
Campbelltown	66,802	79,456	90,872	https://forecast.id.com.au/campbelltown/residential-development
Canterbury-Bankstown	142,547	160,903	-	https://forecast.id.com.au/canterbury-bankstown/residential-development
Cumberland	88,139	105,367	121,002	https://forecast.id.com.au/cumberland/residential-development
Fairfield	69,018	74,938	79,701	https://forecast.id.com.au/fairfield/residential-development
Hawkesbury	-	-	-	Data not available
Liverpool	84,618	107,803	125,035	https://forecast.id.com.au/liverpool/residential-development
Parramatta	114,875	147,297	178,655	https://forecast.id.com.au/parramatta/residential-development
Penrith	-	-	-	Data not available
The Hills Shire	74,776	95,976	117,452	https://forecast.id.com.au/the-hills/residential-development
Wollondilly	20,822	26,849	34,892	https://forecast.id.com.au/wollondilly/residential-development

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	Ref 4	Ref 4	Ref 4	Ref 4	Ref 5		
LGA	2021 Census % Dwelling Type: Separate House	2021 Census % Dwelling Type: Medium Density	2021 Census % Dwelling Type: High Density	2021 Census % Dwelling Type: Medium & High Density	2024 Estimated Resident Population Density (persons per square km)	Ref 4	Ref 5
Blacktown	79.8	13.9	6.0	19.9	1,837.00	https://profile.id.com.au/blacktown/dwellings	https://profile.id.com.au/blacktown
Blue Mountains	91.6	7.2	0.8	8.0	55.11	https://profile.id.com.au/blue-mountains/dwellings	https://profile.id.com.au/blue-mountains
Camden	92.0	7.3	0.1	7.4	700.10	https://profile.id.com.au/camden/dwellings	https://profile.id.com.au/camden
Campbelltown	76.8	18.8	4.3	23.1	604.50	https://profile.id.com.au/campbelltown/dwellings	https://profile.id.com.au/campbelltown
Canterbury-Bankstown	53.1	27.3	18.8	46.1	3,494.00	https://profile.id.com.au/Canterbury-Bankstown/dwellings	https://profile.id.com.au/canterbury-Bankstown
Cumberland	50.3	23.1	25.9	49.0	3,468.00	https://profile.id.com.au/Cumberland/dwellings	https://profile.id.com.au/cumberland
Fairfield	70.7	18.7	9.8	28.5	2,090.00	https://profile.id.com.au/fairfield/dwellings	https://profile.id.com.au/fairfield
Hawkesbury	85.8	12.4	0.7	13.1	24.75	https://profile.id.com.au/hawkesbury/dwellings	https://profile.id.com.au/hawkesbury
Liverpool	70.4	14.0	15.2	29.2	833.50	https://profile.id.com.au/liverpool/dwellings	https://profile.id.com.au/liverpool
Parramatta	36.3	18.3	44.9	63.2	3,279.00	https://profile.id.com.au/parramatta/dwellings	https://profile.id.com.au/parramatta
Penrith	76.3	15.8	7.5	23.3	564.80	https://profile.id.com.au/penrith/dwellings	https://profile.id.com.au/penrith
The Hills Shire	79.6	10.8	9.3	20.1	558.10	https://profile.id.com.au/the-hills/dwellings	https://profile.id.com.au/the-hills
Wollondilly	94.2	4.8	-	4.8	23.39	https://profile.id.com.au/wollondilly/dwellings	https://profile.id.com.au/wollondilly

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	Ref 6	Ref 6	Ref 6	
LGA	2016 Census % of LGA Main Method Travel to Work: Train	2016 Census % of LGA Main Method Travel to Work: Bus	2016 Census % of LGA Main Method Travel to Work: Car as driver	Ref 6 (note: 2016 Census results used to avoid unusual results of 2021 COVID Lockdown Census)
Blacktown	15.7	4.0	60.7	https://profile.id.com.au/blacktown/travel-to-work
Blue Mountains	11.3	0.4	60.6	https://profile.id.com.au/blue-mountains/travel-to-work
Camden	7.3	0.8	70.3	https://profile.id.com.au/camden/travel-to-work
Campbelltown	17.2	1.2	61.4	https://profile.id.com.au/campbelltown/travel-to-work
Canterbury-Bankstown	19.6	2.3	57.3	https://profile.id.com.au/Canterbury-Bankstown/travel-to-work
Cumberland	23.3	2.3	54.0	https://profile.id.com.au/Cumberland/travel-to-work
Fairfield	12.8	1.9	63.9	https://profile.id.com.au/fairfield/travel-to-work
Hawkesbury	4.9	0.5	69.4	https://profile.id.com.au/hawkesbury/travel-to-work
Liverpool	12.0	1.9	65.0	https://profile.id.com.au/liverpool/travel-to-work
Parramatta	21.5	5.9	51.4	https://profile.id.com.au/parramatta/travel-to-work
Penrith	10.3	1.0	66.5	https://profile.id.com.au/penrith/travel-to-work
The Hills Shire	3.8	12.2	62.1	https://profile.id.com.au/the-hills/travel-to-work
Wollondilly	4.0	0.3	70.4	https://profile.id.com.au/wollondilly/travel-to-work

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	Ref 7	Ref 7	Ref 7	Ref 7	Ref 7	Ref 7	
LGA	2021 Census Residents' Place of Work #1 outside own LGA (LGA)	Residents' Place of Work #1 outside own LGA (Number of People)	2021 Census Residents' Place of Work #2 outside own LGA (LGA)	Residents' Place of Work #2 outside own LGA (Number of People)	2021 Census Residents' Place of Work #3 outside own LGA (LGA)	Residents' Place of Work #3 outside own LGA (Number of People)	Ref 7
Blacktown	Sydney	20,421	Parramatta	18,313	The Hills Shire	13,754	https://profile.id.com.au/blacktown/residents
Blue Mountains	Penrith	6,227	Sydney	2,598	Blacktown	1,954	https://profile.id.com.au/blue-mountains/residents
Camden	Campbelltown	8,278	Liverpool	6,197	Sydney	4,624	https://profile.id.com.au/camden/residents
Campbelltown	Liverpool	8,014	Sydney	7,915	Camden	5,043	https://profile.id.com.au/campbelltown/residents
Canterbury-Bankstown	Sydney	24,583	Inner West	6,645	Parramatta	5,930	https://profile.id.com.au/Canterbury-Bankstown/residents
Cumberland	Sydney	12,728	Parramatta	11,852	Blacktown	5,029	https://profile.id.com.au/cumberland/residents
Fairfield	Liverpool	6,394	Sydney	5,621	Cumberland	5,253	https://profile.id.com.au/fairfield/residents
Hawkesbury	Blacktown	3,938	Penrith	3,057	The Hills Shire	2,353	https://profile.id.com.au/hawkesbury/residents
Liverpool	Sydney	9,389	Fairfield	7,647	Canterbury-Bar	6,789	https://profile.id.com.au/liverpool/residents
Parramatta	Sydney	23,585	Ryde	9,905	Cumberland	6,350	https://profile.id.com.au/parramatta/residents
Penrith	Blacktown	14,939	Parramatta	7,328	Sydney	6,517	https://profile.id.com.au/penrith/residents
The Hills Shire	Sydney	14,099	Parramatta	9,743	Blacktown	7,941	https://profile.id.com.au/the-hills/residents
Wollondilly	Camden	3,820	Campbelltown	3,086	Liverpool	1,483	https://profile.id.com.au/wollondilly/residents

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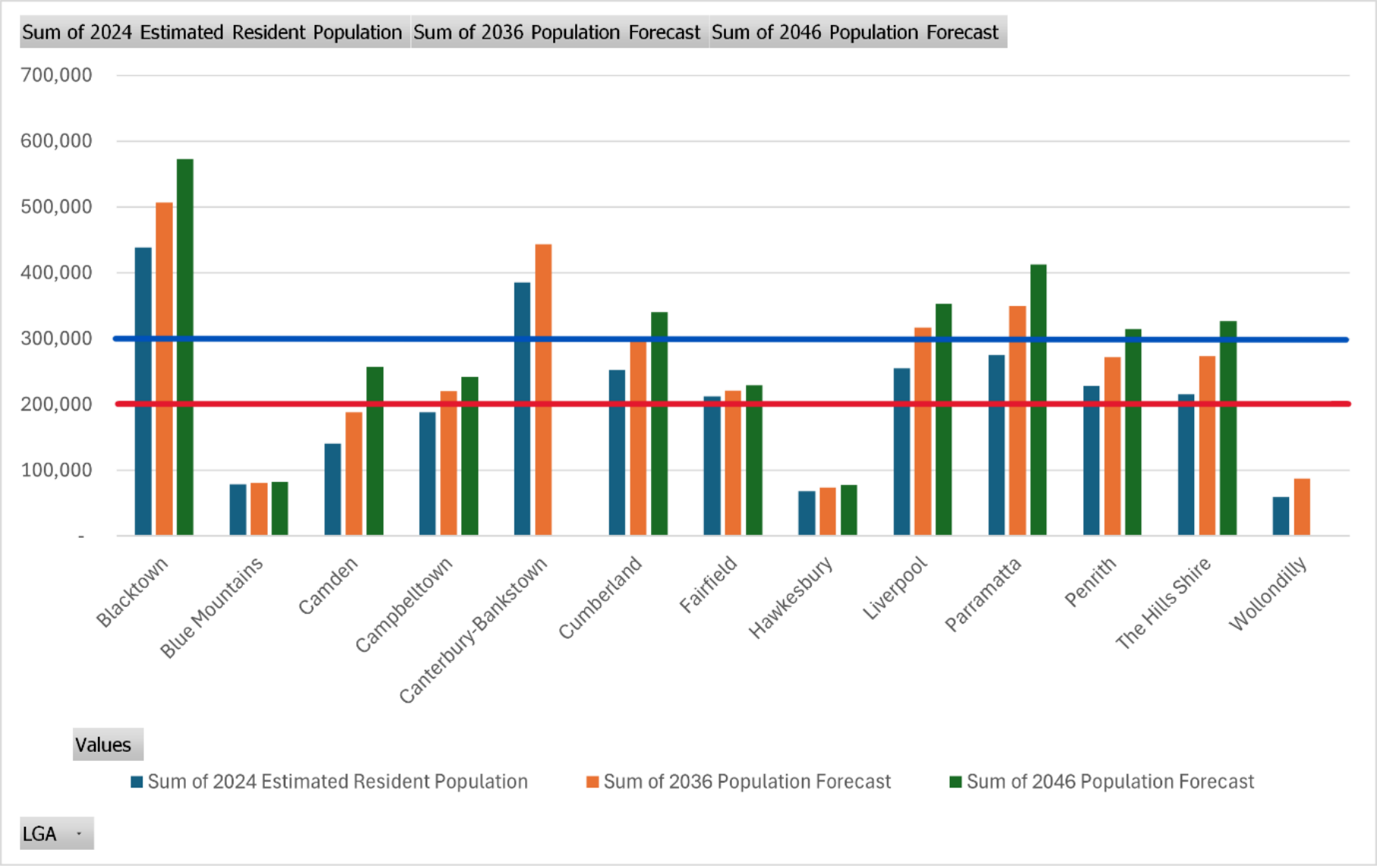

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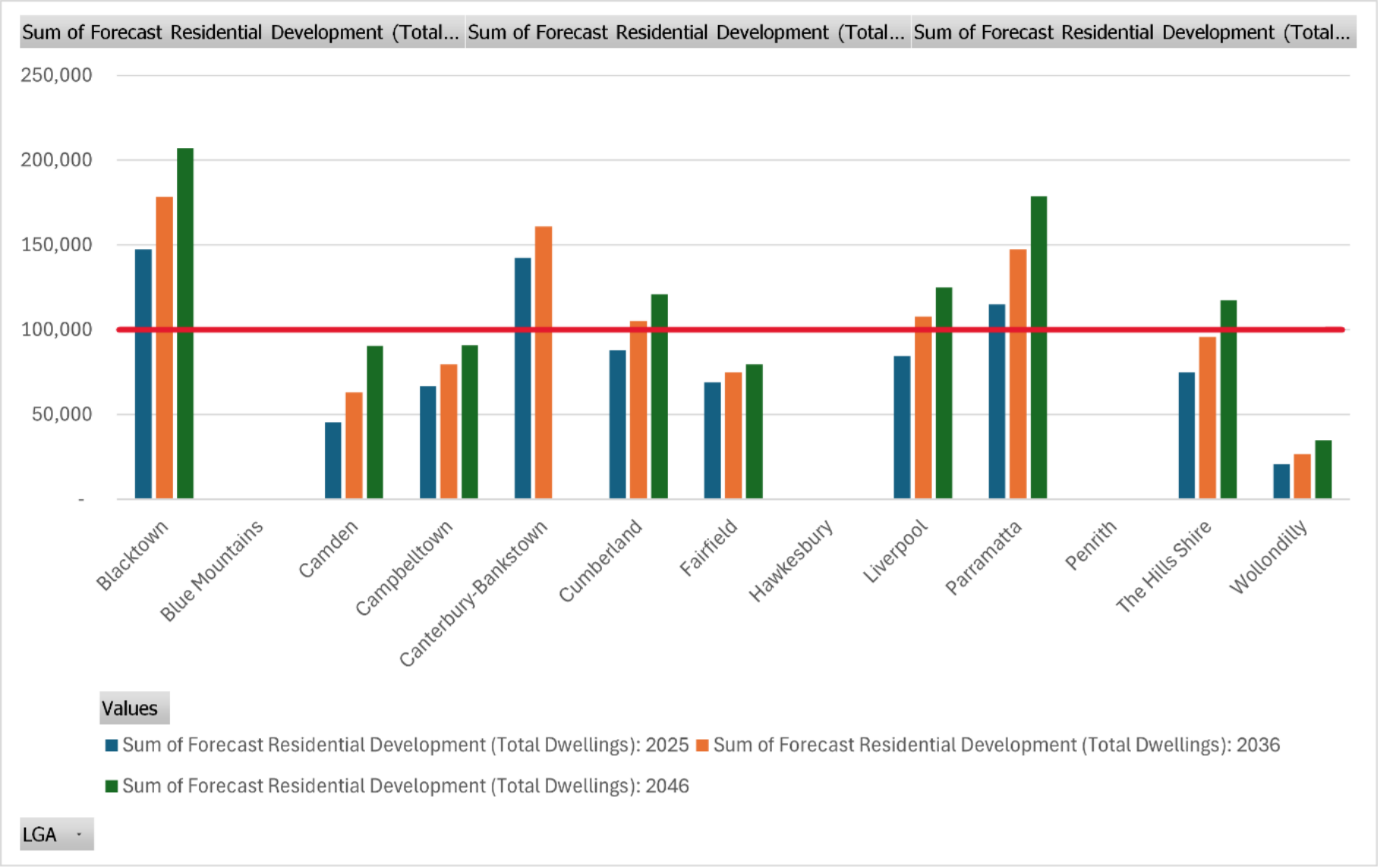

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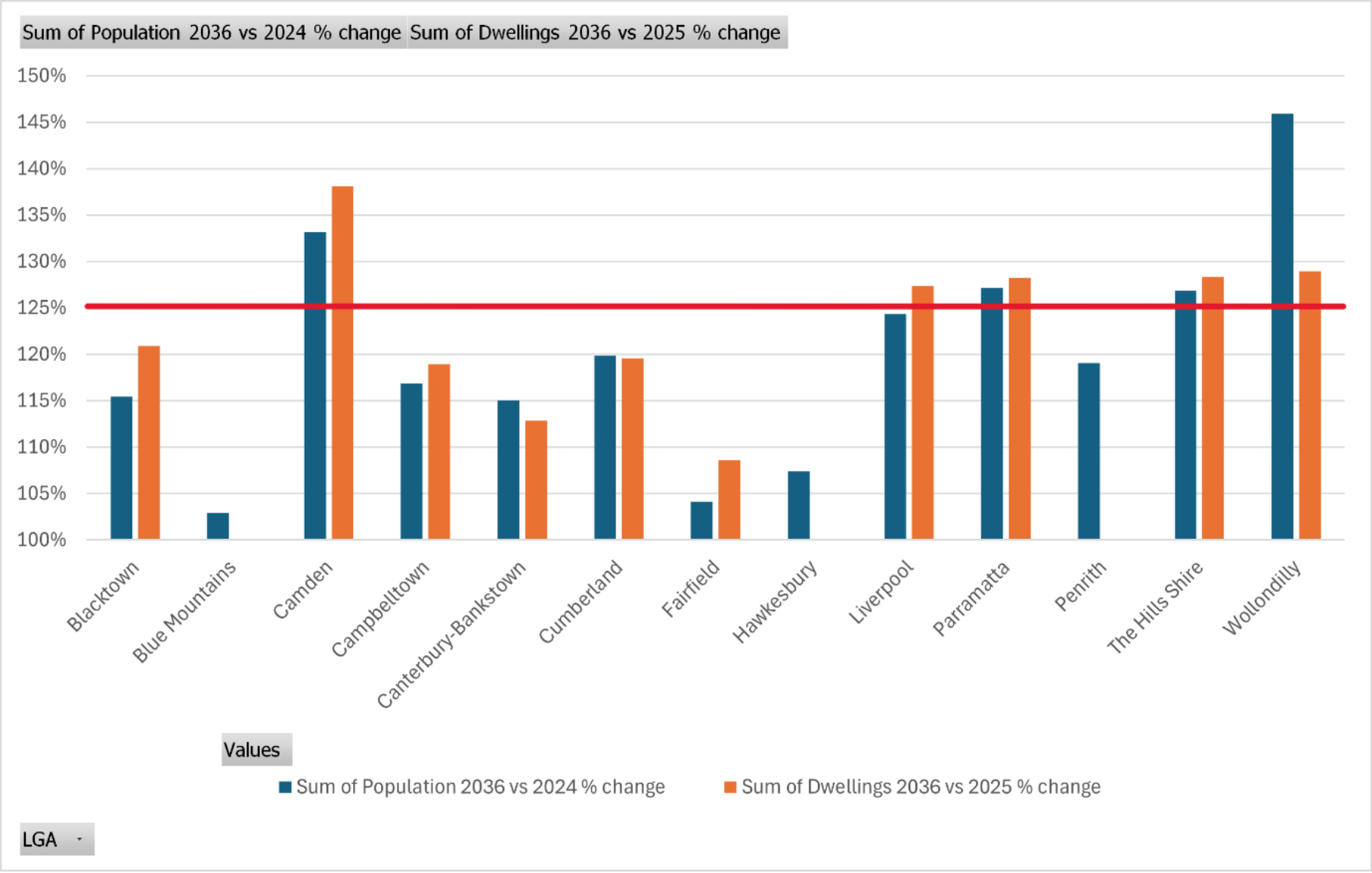

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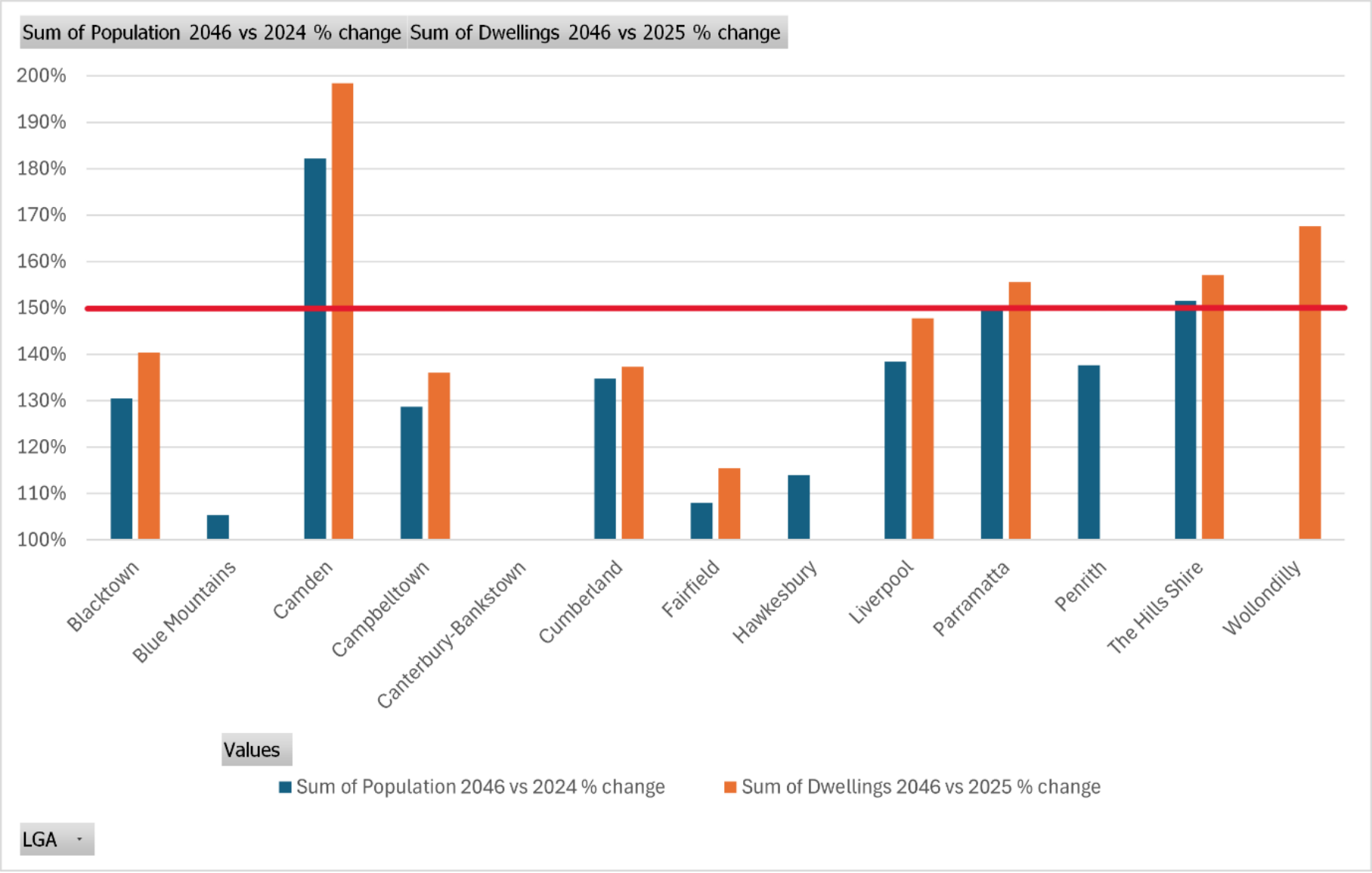

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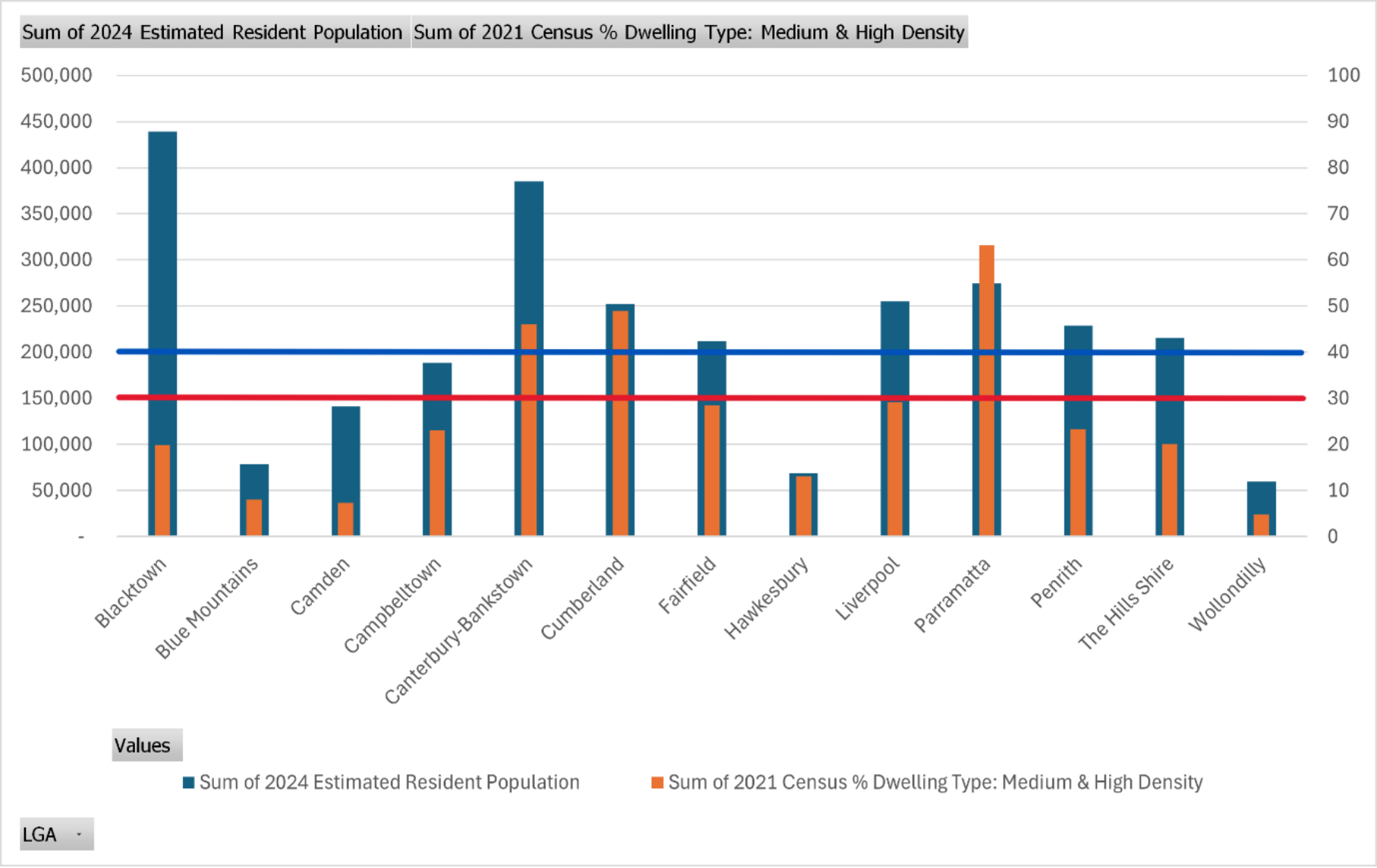

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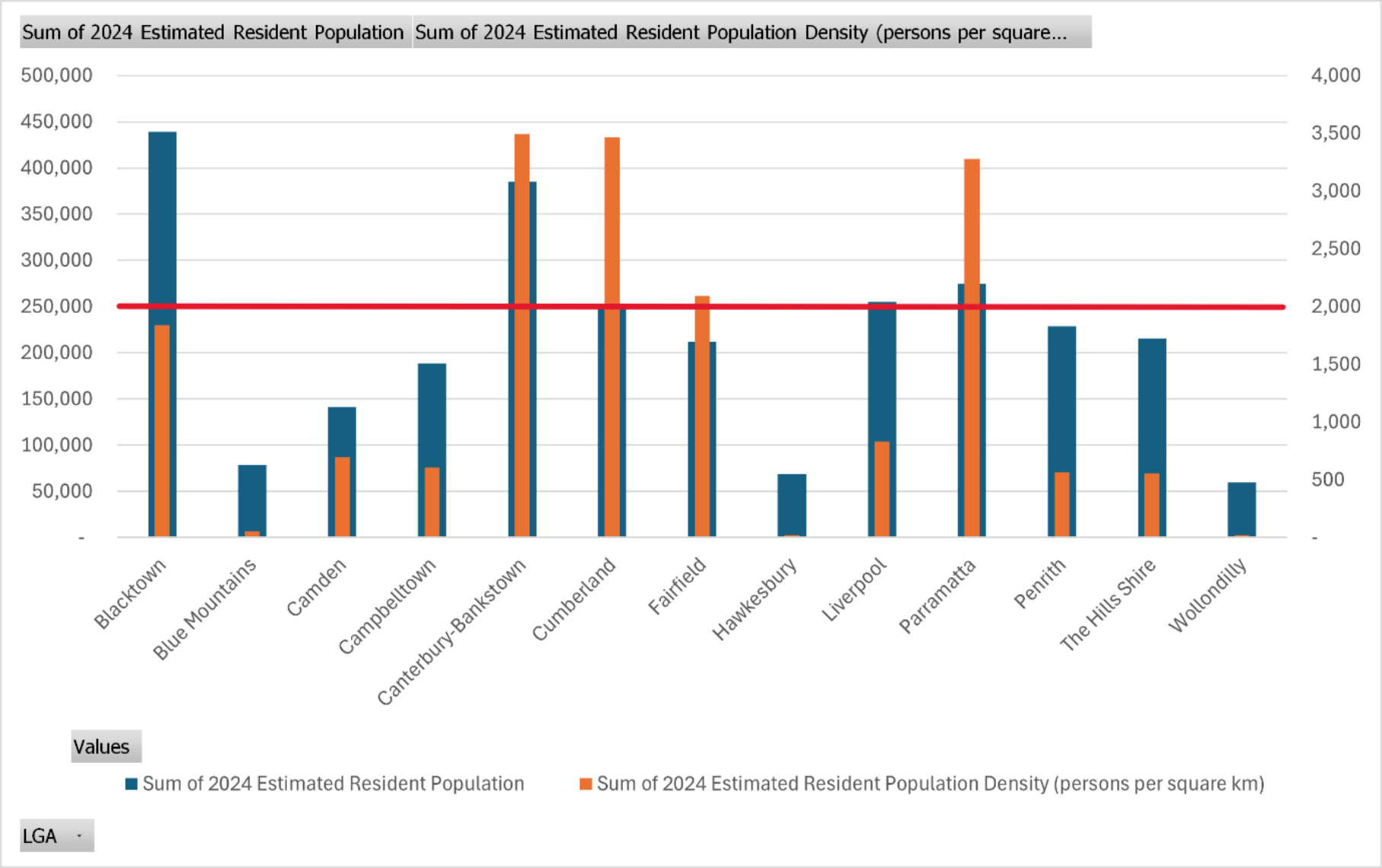

Chapter 7: Workplaces, Workforce, and Travel Patterns in Western Sydney

Introduction

Western Sydney is at the centre of Australia's urban and economic transformation. Over the past decade, the region has shifted from a predominantly residential landscape into one of the country's most dynamic employment and innovation zones. This evolution is underpinned by sustained population growth, decentralisation of key industries, and the strategic rollout of transport and infrastructure investments. Understanding how workplaces are distributed, how the workforce is evolving, and how residents travel to work is essential for aligning housing development with accessibility and liveability objectives.

The Western Sydney region—comprising LGAs such as Blacktown, Parramatta, Liverpool, Camden, Campbelltown, Penrith, Cumberland, Fairfield, The Hills Shire, Hawkesbury, Canterbury-Bankstown, and Wollondilly—currently houses over 2.5 million residents and provides around 900,000 jobs*.

Key sectors underpinning the regional economy include **health and education**, **industrial and logistics**, and **emerging Aerotropolis-related industries** linked to Western Sydney International Airport. Looking ahead, total employment across Western Sydney is projected to exceed **1.1 million jobs by 2036**, representing an increase of more than **200,000 positions** from 2021 levels. This growth will be concentrated in strategic employment precincts such as **the Western Sydney Aerotropolis**, **Parramatta CBD**, and **Liverpool's health and innovation precincts**, which together form the backbone of the NSW Government's "Metropolis of Three Cities" vision. **

**630,000–700,000 jobs in 2021 baseline as per Western Sydney Transport Infrastructure Panel (WSTIP) Report (2023)*

***https://www.planning.nsw.gov.au/plans-for-your-area/a-metropolis-of-three-cities*

Current Workforce and Employment Distribution

Western Sydney's workforce is diverse and geographically dispersed, reflecting both its spatial scale and varied economic base. The region's current employment composition can be summarised across five major categories:

Health and Education Precincts

Health care and social assistance form Western Sydney's largest employment sector, reflecting both population-driven service demand and the clustering of major health precincts.

- Westmead Health and Innovation District employs around 18,000 people across medical, research, and educational institutions. *
- Liverpool Hospital and Health Precinct supports approximately 15,000 workers, expanding with new university partnerships.**
- South Western Sydney Local Health District (Nepean, Campbelltown, Bankstown-Lidcombe, and Blacktown hospitals) currently employs over 17,000 people***. Blacktown Hospital and Clinical School form part of the District's health facilities and specialist services. The expansion of Blacktown Hospital will make it the third-largest public hospital in NSW, generating more than 5,000 new jobs.

Figure 8 Westmead Hospital source: https://www.wslhd.health.nsw.gov.au/Westmead-Hospital

By 2035, the hospital and health sector in Western Sydney is expected to support 50,000–60,000 jobs, with many located along rail or metro corridors. Hospitals together contribute an additional 15,000–20,000 workers.

Sources:

*https://www.westmeadhealthprecinct.com/about-us

** https://www.pwc.com.au/agendas/cities/reimagining-liverpool-aug17.pdf

*** https://www.swslhd.health.nsw.gov.au/pdfs/WorkforcePlan-2028.pdf

Commercial and Administrative Centres

Western Sydney's major CBDs are experiencing rapid growth as new commercial cores emerge outside of Sydney's traditional central business district.

- Parramatta CBD acts as Sydney's "second CBD," with more than 60,000 workers in finance, government, and professional services. Currently Greater Paramatta is a region with 5th largest office space in Sydney.*
- Liverpool CBD hosts 30,000+ jobs, expected to double through the Liverpool Innovation Precinct and Metro connectivity.**
- Norwest Business Park (The Hills Shire) accommodates around 30,000 jobs, focused on corporate offices, technology, and retail.***

Figure 9 Parramatta CBD Expansion source: https://parramattatimes.com.au/news/after-nine-years-govt-approves-councils-plan-for-parramatta-cbd-expansion/

These centres are becoming magnets for white-collar employment, reshaping Western Sydney's role in Greater Sydney's economic geography. *Together, these commercial centres will provide 80,000–100,000 jobs, balancing the pull of the Sydney CBD.*

* https://www.planning.nsw.gov.au/sites/default/files/2024-04/central-city-district-plan.pdf

**Liverpool Economic Development Strategy 2019-2029

***Precinct Plan, Norwest Strategic Centre, the Hills Shire Council

Industrial and Logistics Hubs

The logistics and warehousing economy underpins much of Western Sydney's employment base.

- Smithfield–Wetherill Park, Australia's largest industrial estate, employs more than 20,000 workers.*
- A key component of this network is Western Sydney's **intermodal freight system**, which enhances supply chain efficiency and supports industrial employment growth. **Moorebank Intermodal Precinct (Liverpool LGA)** – The Australian Government states the interstate terminal/precinct will support **~6,800 ongoing jobs** once fully operational (in addition to ~1,300 construction jobs).**
- The precinct at Badgerys Creek, which is connected to the forthcoming Western Sydney International Airport and the Aerotropolis, is also expected to support between **9,000 and 11,000 jobs**, focused on advancing manufacturing and technology industries.***

Figure 10 Moorebank Intermodal Terminal source: https://au.esr.com/properties/moorebank-intermodal-precinct/

Total future employment in industrial, logistics, and intermodal sectors *across Western Sydney is projected to exceed* ***35,000 jobs by 2036****.**

Sources:

*https://www.fairfieldcity.nsw.gov.au/Business/Place-Management/Parks-Place/Smithfield-Wetherill-Park-Industrial-Estate

**https://www.infrastructure.gov.au/department/media/news/interstate-terminal-commissioned-australias-largest-logistics-hub
***Western Sydney Aerotropolis Precinct Plan

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****https://www.planning.nsw.gov.au/sites/default/files/2023-03/broader-western-sydney-employment-area-delivering-new-jobs-to-western-sydney.pdf

Aerotropolis and Airport

The Western Sydney International (Nancy-Bird Walton) Airport, under construction, and the adjacent Aerotropolis precincts represent the region's most significant long-term employment engine.

- The airport alone is forecast to employ 10,000 to 17,000 staff by its opening in the mid-2020s mostly comprised from construction workers and core airport staff late 2026 when airport is open.*
- The Western Sydney Aerotropolis Plan estimates that the Aerotropolis Core could accommodate 50,000 to 60,000 jobs.**
- The broader Aerotropolis precincts may generate 100,000 jobs in logistics, advanced manufacturing, defence, and agribusiness by mid-century.***

* *Western Sydney Airport Labour Market Analysis,* Western Sydney Unit, August 2017

** NSW Department of Planning, Housing and Infrastructure. (2024). *Western Sydney Aerotropolis Precinct Plan – Amendment 2*.

*** Western Parkland City Authority. (2024). *Bradfield City Centre Master Plan*. NSW Government

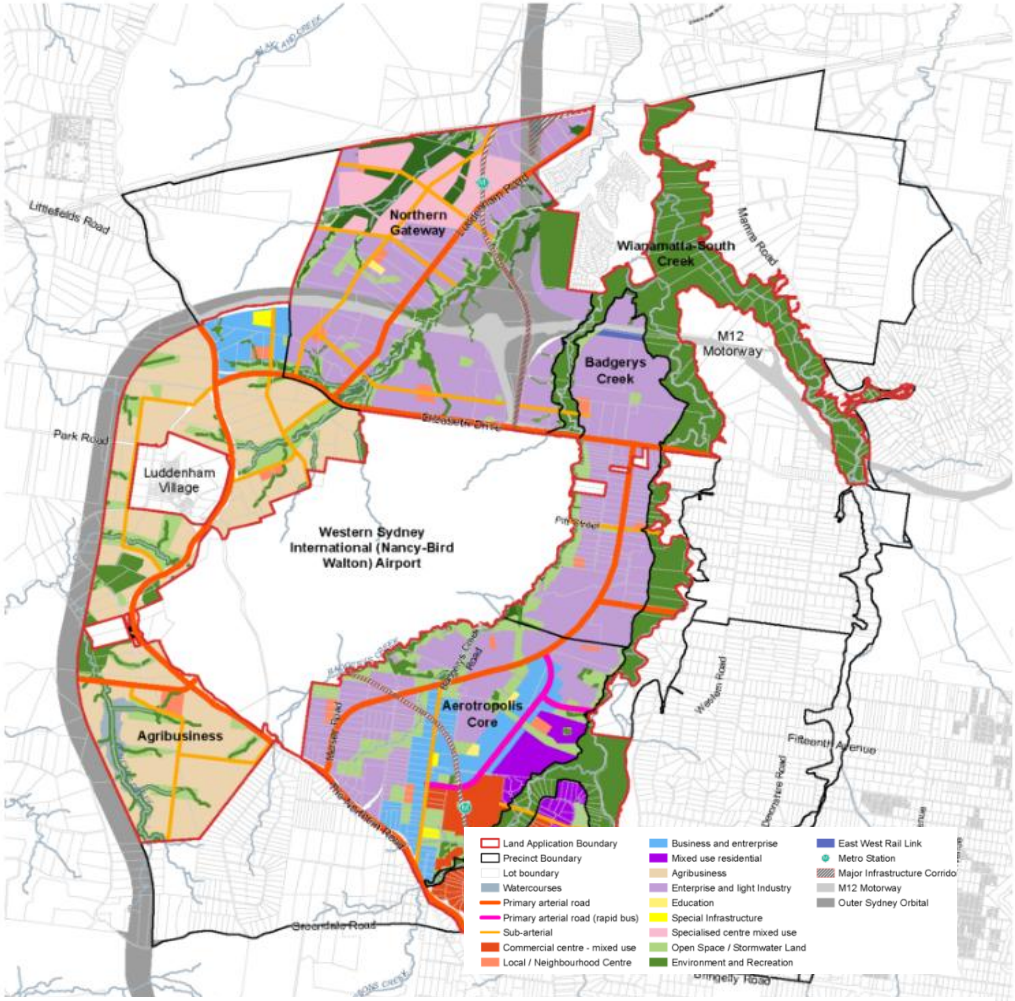

Figure 11 Aerotropolis and airport Western Sydney Aerotropolis Precinct Plan, Department of Planning, Housing and Infrastructure, September 2024

Bradfield City Centre

At the heart of the Aerotropolis lies the **Bradfield City Centre**, envisioned as Western Sydney's premier smart city and innovation hub. Planned and delivered by the **Western Parkland City Authority**, Bradfield will occupy approximately **100 hectares** and is expected to generate **17,000 direct jobs*** by 2056.
The city will focus on high-value industries such as:

- Advanced manufacturing and robotics
- Research and development in defence and aerospace
- Digital technologies and circular economy initiatives

*Western Parkland City Authority. (2024). *Bradfield City Centre Master Plan*. NSW Government

Figure 12 Bradfield City Centre – visualisation source: https://www.nsw.gov.au/about-nsw/precinct-development/delivering-bradfield-city-centre

Bradfield is designed as a **zero-carbon, highly connected urban centre**, with seamless links to the **Metro Western Sydney Airport line**, the **M12 Motorway**, and nearby logistics and industrial estates. Its development embodies the "30-minute city" principle—placing jobs, services, and transport within half an hour for residents across the Western Parkland City.

Education and Research

Educational institutions such as Western Sydney University (WSU), University of Sydney (Camden Campus), and TAFE NSW collectively employ around 20,000 workers and shape the region's human capital base. WSU's multiple campuses serve as innovation anchors that align closely with nearby health and business precincts.

Collectively, education adds another 20,000–25,000 jobs to the regional economy.

Current Travel Patterns and Mode Share

The spatial structure of Western Sydney has traditionally been radial, with most transport corridors directed toward the Sydney CBD. However, the majority of Western Sydney residents now work locally or within adjacent LGAs, creating polycentric commuting patterns.

Mode Share Trends (2021 Census)

- Around 60–70% of employed residents commute by private car (driver or passenger).
- Public transport mode share averages 10–15%, concentrated in LGAs with strong rail access such as Parramatta, Cumberland, and Canterbury-Bankstown.
- Walking and cycling remain under 3%, reflecting the low-density built form.
- Post-pandemic, work-from-home rates surged to 25–30%, particularly among white-collar workers in Parramatta and The Hills.

This data illustrates both progress toward decentralised employment and ongoing dependence on road-based travel, especially for outer growth LGAs such as Camden, Wollondilly, and Hawkesbury.

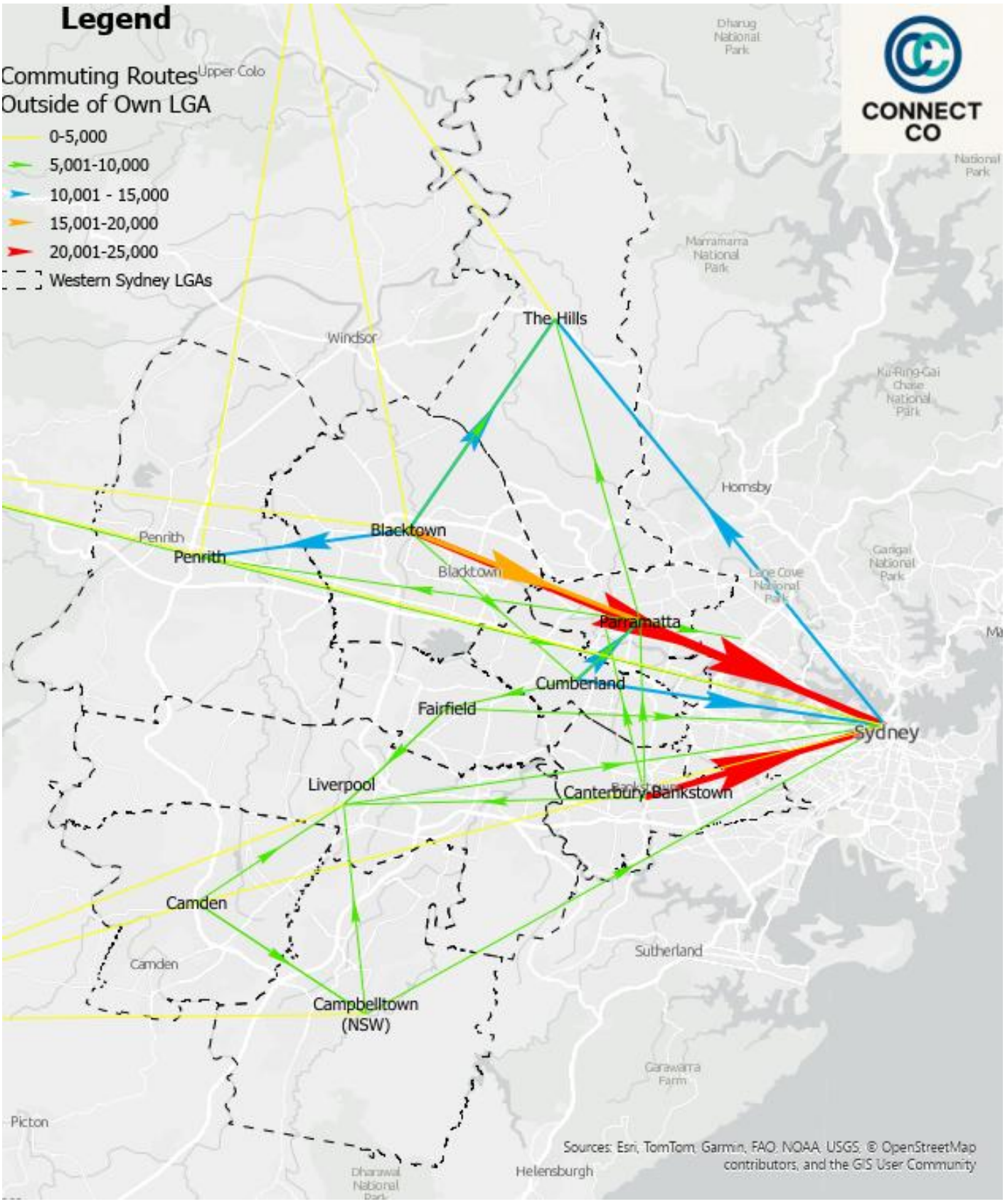

Figure 13 Current Travel Trends, top 3 commuting routes for Western Sydney residents, as per census 2021

Future Shifts

- Polycentric commuting: With Parramatta, Liverpool, Norwest, and the Aerotropolis becoming employment hubs, lateral commuting within Western Sydney will grow, reducing reliance on Sydney CBD jobs.
- Persistent car use in greenfields: Camden, Wollondilly, and Hawkesbury residents will remain car-dependent, as public transport coverage will lag behind housing growth.
- Transit uptake in inner hubs: Parramatta, Liverpool, Bankstown, and Norwest will see increased rail and metro commuting due to Sydney Metro West, Metro Southwest, and Aerotropolis rail connections.
- Industrial precincts remain car-dominated: Logistics jobs in Smithfield, Wetherill Park, and Eastern Creek will rely on cars and trucks due to dispersed job sites and shift-based work.
- Healthcare commuting: Hospitals will attract large commuting flows, but 24/7 operations mean that car use will remain significant unless 24-hour transport services expand.

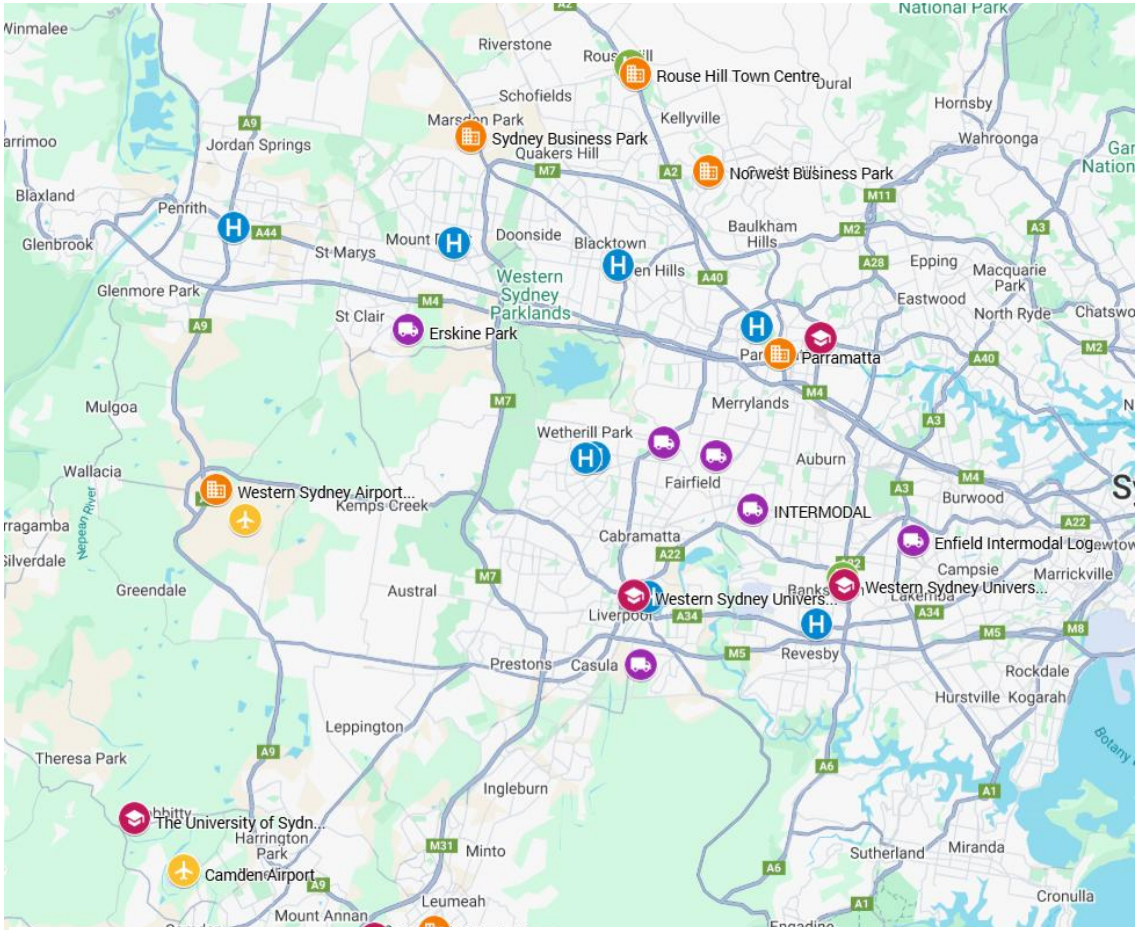

Figure 14 Major Western Sydney Work Hubs

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Future Workforce and Travel Dynamics

Projected Workforce Growth

By 2035, Western Sydney's total employment base is expected to grow from roughly **900,000 to 1.1 million jobs**, driven by:

- Expansion of the Aerotropolis (up to **50,000 jobs by 2035**)
- Growth in health and education employment (to **60,000+ jobs**)
- Doubling of jobs in Parramatta and Liverpool CBDs
- Strong industrial growth linked to motorway and freight upgrades

This growth will rebalance Sydney's metropolitan employment geography, reducing dependence on the eastern CBD and creating more local opportunities.

Future Travel Patterns

The region's **polycentric model** will deepen as new job nodes emerge:

- **Lateral travel corridors** (east–west and north–south) will become more critical than CBD-oriented routes.
- **Public transport use** is expected to increase with the rollout of Sydney Metro West, Metro Southwest, and Western Sydney Airport Metro.
- **Road-based commuting** will remain dominant in industrial and logistics precincts.
- **Active and micro-mobility options** may grow within dense mixed-use centres like Parramatta, Liverpool, and Penrith.

Travel-to-work distances are likely to shorten as more residents find employment in nearby centres, supporting Infrastructure Australia's *30-minute city* objective.

Conclusion

By 2035, Western Sydney is projected to host over half a million jobs across health, logistics, commercial, education, and aviation sectors. This will reshape commuting, with fewer trips to Sydney CBD and more polycentric flows within the region. However, without significant transport investment, car dependency will remain entrenched, especially in greenfield growth areas. To ensure liveability and economic inclusion, planning must prioritise integrated housing, job, and transport strategies, ensuring that Western Sydney evolves into a well-connected and sustainable multi-centred metropolis.

Sector / Precinct	2025 Workforce Estimate	2035 Projected Workforce	Key Growth Drivers
Health Precincts (Westmead, Liverpool, Nepean, Campbelltown, Bankstown, Blacktown)	42,000	60,000	Major hospital redevelopments, health research precincts, ageing population, regional healthcare demand
Commercial Centres (Parramatta, Liverpool, Norwest, Campbelltown)	90,000	140,000	Expansion of Parramatta CBD, new government offices, commercial investments, mixed-use developments
Industrial & Logistics (Smithfield-Wetherill Park, Eastern Creek, Marsden Park, Kemps Creek, Ingleburn)	75,000	120,000	Freight and logistics expansion, M12 Motorway, intermodals, industrial infill, e-commerce warehousing
Western Sydney Airport & Aerotropolis (including Bradfield City Centre)	2,500	80,000 (100,000 new jobs by 2056 and 200,000 new jobs in the broader Western Parkland City)	Airport operations, Aerotropolis industries (aerospace, defence, agribusiness, advanced manufacturing)
Education & Research (WSU, TAFE, University of Sydney Camden)	20,000	25,000	Growth of education precincts, research partnerships, and new campuses supporting industry clusters
TOTAL	**252,000**	**425,000**	

Chapter 8: Existing Road Network and Capacity in Western Sydney

Western Sydney's road network forms the backbone of its transport system, supporting over two million residents across the region's rapidly expanding local government areas (LGAs). Major arterial corridors such as the **M4 Western Motorway**, **M7 Westlink**, **M5 Motorway**, and **Great Western Highway (A32)** act as primary conduits for east–west and north–south connectivity. Together, they provide essential links between residential, industrial, and commercial areas, connecting the western growth centres with Sydney's global economic hubs in Parramatta and the CBD.

Current Structure and Function

The M4 corridor serves as the key east–west route, connecting Penrith and Parramatta to Sydney's central areas, while the M7 and M5 provide vital freight and commuter connections to southern and northern districts. Supporting arterials such as **The Northern Road**, **Camden Valley Way**, and **Bringelly Road** link emerging residential zones like Oran Park, Leppington, and Austral with employment hubs and industrial estates.

However, the network was largely designed for dispersed, low-density development patterns of the late 20th century. The recent shift toward high-growth urbanisation—particularly in **Liverpool, Camden, and Campbelltown**—has resulted in increased vehicle volumes that far exceed original design capacities. The **2023 Traffic Modelling Report for Sydney** highlights that peak hour congestion has intensified on all major routes, with average travel times between Penrith and Parramatta exceeding 60 minutes during the morning commute.

Network Performance and Inadequacies

While the existing roads facilitate regional mobility, their **capacity and efficiency are increasingly constrained** by population growth, freight demand, and a car-dependent urban form. Western Sydney's public transport network, though expanding, remains limited relative to housing growth, further entrenching reliance on private vehicles.

Congestion hotspots are common along the **M4**, **M5**, and **M7 corridors**, where freight and commuter traffic merge. The **Great Western Highway** remains the only east–west connection between Penrith and the Blue Mountains, resulting in heavy bottlenecks. Similarly, the **Hume Motorway (M31)**, which links Camden and Campbelltown to the broader network, experiences periodic saturation during peak freight operations.

The region's industrial and logistics estates—particularly **Eastern Creek**, **Smithfield-Wetherill Park**, and **Erskine Park**—further compound road usage due to 24-hour freight operations. Despite the establishment of key intermodal terminals at Moorebank and St. Marys, heavy vehicle traffic remains highly concentrated along arterials rather than distributed through dedicated freight corridors.

Image: Transport for NSW, https://www.transport.nsw.gov.au/projects/current-projects/

Accessibility and Equity

Accessibility across the road network varies significantly by location. Inner LGAs like **Cumberland** and **Parramatta** benefit from multi-route redundancy, while outer LGAs such as **Wollondilly** and **Hawkesbury** rely heavily on single arterial roads, making them vulnerable to congestion and disruption. Low connectivity in peri-urban areas reduces access to employment, healthcare, and education, reinforcing transport disadvantage.

The overall road system thus remains both **foundational and fragile**—a critical enabler of Western Sydney's economy but one that is increasingly under strain. Its inadequacies underscore the urgent need for infrastructure expansion and reconfiguration aligned with forecast housing and employment growth.

Chapter 9: Future Road Corridors and Network Expansion

The next decade will witness transformative changes to Western Sydney's road infrastructure, driven by the dual imperatives of accommodating population growth and supporting the **Western Sydney Aerotropolis**. The **Western Sydney Infrastructure Plan (WSIP)**, valued at over $4 billion, underpins this evolution through a coordinated program of road upgrades, new motorway links, and strategic corridors connecting to the **Western Sydney International (Nancy-Bird Walton) Airport**.

Planned Corridors and Strategic Upgrades

Key new corridors include:

- **M12 Motorway**: Providing a direct, high-capacity link between the M7 and the Western Sydney Airport, reducing travel time from Liverpool to the Aerotropolis to under 20 minutes.
- **The Northern Road Upgrade**: Now largely complete, this corridor has been widened to four lanes and integrated with smart motorway systems to facilitate efficient freight and commuter flows.
- **Bringelly Road Upgrade**: Enhancing connectivity between Camden, Oran Park, and Leppington, serving as a southern access route to the Aerotropolis.
- **Outer Sydney Orbital (M9)**: A long-term corridor connecting the Central Coast to the Southern Highlands, designed to relieve freight congestion on the M7 and support intermodal operations at St. Marys and Moorebank.

- **Werrington Arterial Extension and Mamre Road Upgrade**: Providing access to the Mamre Road Precinct—one of Sydney's fastest-growing industrial logistics hubs.

These projects collectively reconfigure the network into a **polycentric, multi-access system** that supports decentralised economic activity around Parramatta, Liverpool, and Bradfield City Centre.

Integration with Economic Precincts

The **Bradfield City Centre Master Plan** envisions a multimodal transport hub seamlessly linked with the M12, M7, and future M9 corridors. This connectivity is vital for supporting the projected **200,000 jobs** across the Aerotropolis and surrounding industrial zones. Similarly, the **Western Sydney Freight Line**—a future dedicated rail freight corridor—will complement new road investments by diverting heavy vehicles from the motorway network.

Anticipated Outcomes and Challenges

By 2036, the expanded road network is expected to reduce average inter-regional travel times by 15–20%, while improving access to the airport and major employment hubs. However, the challenge remains in ensuring that infrastructure delivery aligns with the rapid pace of housing development.

The **Traffic Modelling Report** indicates that without sustained investment in public transport alternatives, road demand will continue to grow by 3–4% annually, eroding the benefits of new corridors. Therefore, strategic integration with future **Metro lines** and **bus rapid transit (BRT)** systems will be crucial for maintaining network balance.

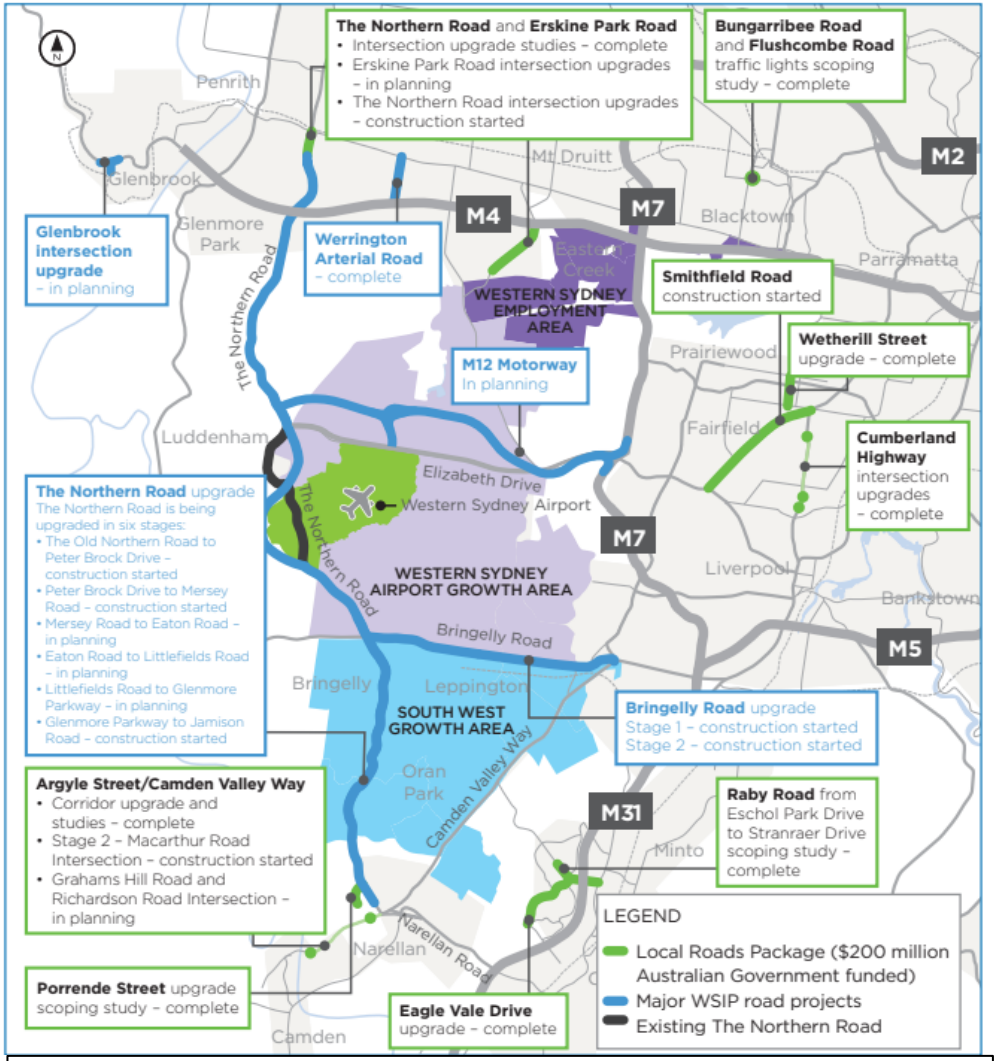

Figure 15. Major Western Sydney Infrastructure map source: https://www.infrastructure.gov.au/infrastructure-transport-vehicles/road-transport-infrastructure/western-sydney-infrastructure-plan

Conclusion

The emerging network represents a historic reconfiguration of Western Sydney's transport landscape. It is designed not merely to alleviate current bottlenecks but to **shape future patterns of growth**, supporting the region's evolution into a self-sustaining metropolitan engine. However, achieving this vision will require continuous monitoring, data-driven planning, and coordinated delivery across all levels of government to ensure that **road and housing growth evolve in tandem**.

Chapter 10: Existing Public Transport Network in Western Sydney

The public transport network across Western Sydney currently comprises a mix of heavy rail, bus, and emerging light rail corridors that connect residential, employment, and educational centres to Sydney's CBD and regional nodes. Despite its extensive reach, the network remains inadequate in addressing the growing population and the spatial distribution of employment. Accessibility varies significantly across LGAs, reflecting a legacy of radial transport planning focused on the Sydney CBD rather than polycentric growth.

Figure 16 Existing Sydney Trains and Sydney Metro lines (Western Sydney) source: https://nsw-transport.net/network-maps/metro-train-maps/

Existing Rail Network

The heavy rail network is the backbone of public transport in Western Sydney, served primarily by the **T1 Western Line**, **T2 Inner West & Leppington Line**, **T5 Cumberland Line**, and **T8 Airport & South Line**. These lines provide connections between Parramatta, Blacktown, Penrith, Liverpool, Campbelltown, and the Sydney CBD. The **T1 Western Line** is the most heavily utilised corridor, carrying more than 200,000 passengers daily between Parramatta and the CBD . Despite high ridership, capacity constraints—particularly during peak hours—limit efficiency and reliability.

The **T2** and **T5** lines provide important cross-regional connections between Liverpool, Campbelltown, and Parramatta but suffer from limited frequency and slower travel times. Meanwhile, Western Sydney's outer LGAs, including Camden, Hawkesbury, and Wollondilly, remain underserved, relying predominantly on private vehicles or low-frequency bus services. According to Transport for NSW open data, only **38%** of Western Sydney residents live within a 1 km radius of a train station, compared to over **70%** in the Eastern and Inner West LGAs.

Existing Metro Network

Since the first section opened in 2019, the Metro network has continued to grow, integrating into and expanding the public transport network in Sydney.

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Currently the **M1** line (Sydney Metro northwest) runs from Tallawong through the city terminating at Sydenham. The final stage of this line is expected to open in the coming months, running through converted heavy rail stations to the new termination of Bankstown. Approximately 215,000 people take the Sydney Metro every day, as of late 2024 and early 2025.

Two other metro lines are currently under construction; those of **Sydney Metro West** and the **Western Sydney Airport** line from St Marys station South to Bradfield.

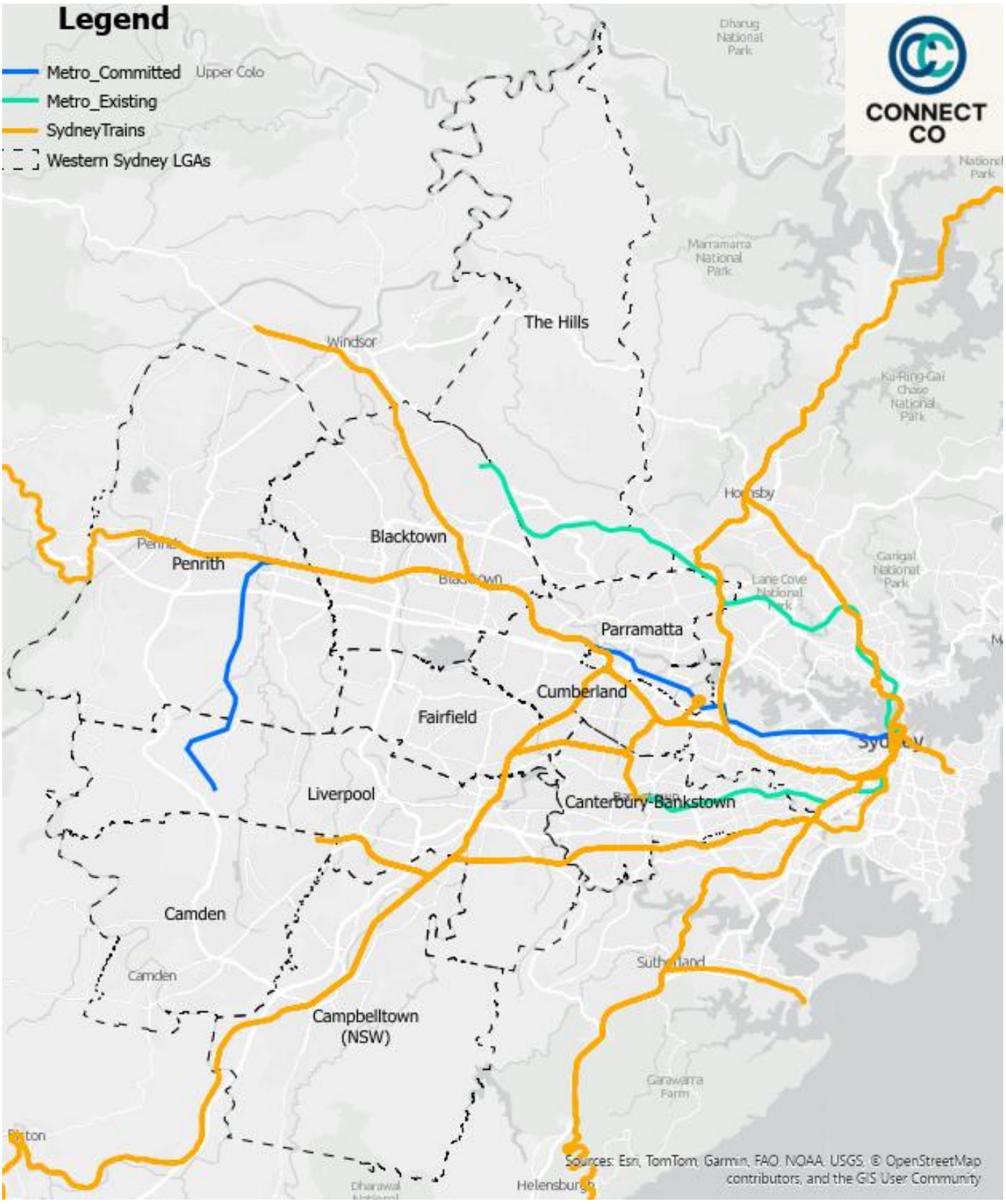

Figure 17 Existing Sydney Trains and Metro lines. Source: https://www.data.nsw.gov.au/data/dataset/2-sydney-train-routes/resource/6144a4d0-cdb2-4115-96d3-4476b5e1f11b

Gaps in Existing Rail Networks

As noted above, much of Western Sydney is underserved by the existing heavy rail and metro networks, despite development in the metro space. This lack of coverage is highlighted in the image below. The existing heavy rail is depicted in light grey with the metro lines (current and under construction) depicted in colour. It is observed that large sections of Western Sydney are not currently serviced by traditional rail or Metro.

Bus Services and Connectivity

Buses serve as the principal mode of public transport for most outer-suburban LGAs such as Camden, Wollondilly, and parts of the Hills Shire. The **Bus Transitway (T-way)** systems between **Liverpool–Parramatta** and **Blacktown–North-West T-Way** have improved travel times, yet their reach is limited to a few strategic corridors. Service frequencies outside peak hours remain low, and many routes terminate at rail stations, further entrenching the need for multi-leg trips.

The 2023 **Traffic Modelling Report for Sydney** identifies significant congestion along major arterials—especially the Great Western Highway, Hume Highway, and Cumberland Highway—caused in part by the limited modal shift from private car use to public transport .

Accessibility and Demand Patterns

Accessibility analysis shows that transport equity across Western Sydney is highly uneven. High-access areas such as **Parramatta**, **Penrith**, and **Liverpool** benefit from established rail hubs, while LGAs such as **Camden**, **Hawkesbury**, and **Wollondilly** remain transport-poor. The **Public Transport Accessibility Index (PTAI)** for Western Sydney LGAs averages 0.42 (on a scale of 0 to 1), significantly below the Sydney average of 0.68. This low accessibility correlates with higher car ownership rates—averaging **1.8 vehicles per household**—and longer commute times exceeding **50 minutes** in some growth corridors.

Key Challenges

The major inadequacies of the existing public transport system include:

- Overreliance on radial routes leading to the CBD, with limited east-west connectivity between regional centres.
- Insufficient high-capacity transit options for outer growth LGAs.
- Lack of integration between bus, rail, and emerging active transport networks.
- Limited frequency and reliability in off-peak and cross-regional services.

These gaps constrain access to jobs, education, and essential services and undermine the region's transition towards a **polycentric city model** envisioned in the **Western Sydney District Plan (2018)**.

Capacity, Congestion, and Future Infrastructure

Public transport capacity is generally defined by the **maximum number of passengers per hour per direction (PPHPD)** a line can carry. For these Western Sydney LGAs, the capacity is delivered by the following systems:

1. Heavy Rail (Sydney Trains - T-Lines)

- **Capacity:** The conventional Sydney Trains network provides the backbone. Capacity is constrained by the maximum train length, frequency, and network bottlenecks (particularly into the Sydney CBD). The **T1 Western Line (Penrith/Blacktown to City)** is a major bottleneck corridor, with Penrith City Council noting its **current capacity as "not satisfactory"** during peak.
- **Demand/Utilisation:** Demand is high for commutes to the Parramatta and Sydney CBDs. The 2021 Census data shows a **reduction in train usage** across many LGAs compared to 2016 (e.g., Blacktown: −15,658 persons, City of Parramatta: −16,122 persons), largely due to the increase in **working from home** post-COVID.
- **LGAs Covered:** Penrith, Blacktown, Liverpool, Parramatta.

2. Metro Rail (Sydney Metro)

- **Capacity:** The Sydney Metro network is designed for high-frequency, high-capacity, automated operation, with an ultimate design capacity of over **40,000 PPHPD**—significantly more than a conventional train line.
- **The Hills Shire:** Directly benefits from the **Sydney Metro Northwest** (operational), providing high capacity and reliability, which explains the high proportion of residents who have access to this modern system.
- **Parramatta:** Will benefit from the **Sydney Metro West** (under construction), which will **double rail capacity** between Parramatta and the Sydney CBD. This is the single biggest future capacity boost for the entire region.
- **Camden/Liverpool:** Will be served by the future **Sydney Metro to Aerotropolis/Macarthur** (planned/advocacy), which is crucial for delivering fixed-rail capacity to these rapidly growing, car-dependent LGAs.

3. Light Rail / Bus Rapid Transit (BRT)

- **Capacity:** The capacity of light rail and BRT is generally lower than heavy rail/metro but significantly higher than mixed-traffic buses.
    - **Light Rail:** Parramatta Light Rail (Stage 1 is operational) provides a **new, high-frequency, high-capacity circulation system** for Parramatta CBD, connecting to surrounding areas like Westmead and Carlingford.

The table below summarises the key public transport infrastructure available in each of the studied LGAs:

Local Government Area (LGA)	Key Public Transport Infrastructure (Excl. Local Bus)	General Accessibility & Current Capacity Status	Public Transport Demand (2021 Census)
City of Parramatta	Heavy Rail: Parramatta Station (Major Interchange: T1, T2, T5 Lines, Intercity). Light Rail: Parramatta Light Rail Stage 1 (Opened Dec 2024: Westmead to Carlingford). Ferry: Parramatta RiverCat services.	High Capacity & Multimodal Hub: Parramatta is a major transport interchange, offering high-capacity rail to the Sydney CBD, and cross-regional links via T5. NEW ADDITION: The new Light Rail provides high-frequency, local/regional capacity to key precincts (Westmead, Carlingford, Rosehill). The system is designed to enable a significant shift away from car travel within the CBD and its surrounds.	Highest Mode Share (7.2% of residents used public transport to work). This is significantly higher than other Western Sydney LGAs, reflecting its role as a transport hub and its higher-density population.
Camden Council	Train: Leppington Station (T2/T5 Sydney Trains Terminus).	NEW RAIL ANCHOR: Leppington Station is a critical rail anchor for the rapidly growing North Ward of Camden. The primary challenge is connecting the remaining, vast, and rapidly developing areas to this single rail access point.	Very Low (2.1% of residents used public transport to work). This figure reflects the historical lack of infrastructure outside the immediate station catchment.

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Liverpool City Council	Train: Liverpool Station (Major Interchange: T2/T3/T5), Leppington Station (T2/T5 Terminus), Glenfield Station (Interchange).	High Accessibility in Core Suburbs: Liverpool is a key rail hub. Capacity challenges are seen in road congestion and a lack of rapid north-south/east-west connections to new employment centres like the Aerotropolis.	Low (3.7% of residents used public transport to work). Reliance on the private car is still high, a trend Council seeks to reverse with new infrastructure.
Penrith City Council	Train: Penrith Station (Major Interchange: T1 Western/Blue Mountains Line, Intercity Services).	Good Mainline Rail Capacity: Penrith is a Metropolitan Centre with high-capacity rail to Blacktown, Parramatta, and the Sydney CBD. CHALLENGE: Significant areas north and south of the main train line are car-dependent. Growth areas around the Aerotropolis are disconnected from the existing network.	Low (3.1% of residents used public transport to work). The largest mode shift was from driving and the train to working from home (26.3% in 2021).
The Hills Shire Council	Metro: Sydney Metro Northwest (Multiple Stations: Tallawong to Chatswood).	Excellent/Future-Proofed Capacity: The LGA is anchored by Australia's first fully automated metro line. The system has an ultimate capacity of up to 20 trains per hour in each direction. CHALLENGE: Areas not serviced by the Metro are reliant on a changing bus network, which often serves as a feeder to the stations.	Low/Moderate (5.7% of residents used public transport to work). This is the highest mode share among the Western Sydney LGAs before Parramatta, directly attributable to the high capacity and fast journey times of the Metro.

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Sydney Trains: T1, T2, and T5 Lines Comparison:

Line	Annual Patronage (FY 2024–25)	Peak Hour Service Frequency (Trains Per Hour)	Typical Train Size	Crowding/Load Factor (Pre-Metro Relief)
T1 Western	86.7 Million (Highest on Network)	High (12-16 tph on shared tracks)	8-Car (Double-Deck)	Severe. Historically ran at 135% seated capacity in the AM peak before Metro relief.
T2 Leppington & Inner West	47.0 Million	High (16 tph capacity to City Circle)	8-Car (Double-Deck)	High. A core radial line that operates close to the heavy rail system's maximum reliable frequency.
T5 Cumberland	8.0 Million (Lowest on Network)	Low. 4 tph in AM peak; 2 tph (every 30 mins) in off-peak.	4-Car (Often Millennium or Waratah sets)	Low Demand/Underutilised. Low frequency and short trains reflect its orbital role, but it runs at capacity in short bursts.

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M1 Metro North West & Bankstown Line Comparison

The Metro is a fundamentally different system designed for higher capacity and frequency, providing a direct contrast to the heavy rail system.

Metric	Sydney Metro North West (M1) Data	Comparison/Impact on Network
Capacity Target	40,000 passengers per hour per direction (PPHPD).	This is 67% higher than the 24,000 PPHPD reliable capacity of a standard heavy rail line (like the T1).
Peak Hour Frequency	15 trains per hour (every 4 minutes).	This is a true "turn-up-and-go" service that operates at a more consistent frequency than heavy rail.
Daily Trips	210,000 trips daily (as of 2025, after CBD extension).	The high usage immediately validated the project.
Impact on T1 North Shore	Weekday trips at North Sydney Station halved following the M1 City extension opening.	Direct evidence of congestion relief on the parallel T1 line.
Train Size	6-Car (Single-Deck, Driverless)	Though shorter than heavy rail, the single-deck design and higher frequency allow for faster boarding and maximum use of track capacity.

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Summary of Capacity & Crowding

Line Category	Challenge	Solution / Function
T1 Western	Overwhelmed radial line; congestion and instability.	25% of its North Shore demand has shifted to the M1 Metro, freeing up valuable track paths for future improvements.
T2/T5	T2: High-demand radial line (Inner West) that needs long-term upgrade. T5: Underutilised orbital line with low frequency.	The T5 remains a key orbital connector, but its capacity is low due to short trains and long headways (30 min off-peak).
Metro (M1)	Capacity Doubler and Congestion Relief.	Provides a dedicated, high-frequency corridor into the CBD, successfully drawing high-volume demand away from the most congested parts of the heavy rail network.

Chapter 11: Future Public Transport Projects

Western Sydney is poised for a transformative decade of transport investment aimed at unlocking housing growth, supporting employment hubs, and integrating new urban centres around the **Western Sydney Airport (WSA)** and **Bradfield City Centre**. By 2035, the region's public transport landscape is expected to evolve into a multi-nodal system of interconnected rail, metro, and rapid bus corridors, addressing long-standing accessibility gaps.

Ongoing Metro and Rail Projects

Sydney Metro – Western Sydney Airport Line

Scheduled for completion in 2026, the **Sydney Metro – Western Sydney Airport Line** will be a defining project for the region. The 23-kilometre line will connect **St Marys** to the **Western Sydney Aerotropolis**, with six new stations at St Marys, Orchard Hills, Luddenham, Airport Terminal, Bradfield, and Aerotropolis. This metro will serve as the backbone of the new Western Parkland City, catalysing high-density housing and employment growth around Bradfield and the WSA Precinct.

Parramatta Light Rail (Stages 1 and 2)

Stage 1 (currently under delivery) will link Westmead to Carlingford via Parramatta CBD, improving access for over **28,000 daily commuters**. **Stage 2**, extending from Parramatta to Sydney Olympic Park, is in planning stages and will connect key employment zones across Cumberland and Parramatta LGAs. Collectively, the light rail system is expected to support up to **130,000 residents** and **70,000 jobs** within its catchment by 2036.

Metro West and Potential Extensions

The **Sydney Metro West** will connect **Parramatta** to the Sydney CBD via **Sydney Olympic Park**, reducing travel times to around 20 minutes. Future extensions toward **Westmead** and potentially **Western Sydney Airport** could further enhance regional connectivity and facilitate multi-centre urban growth.

Rapid Bus and Transit Corridors

The **Western Sydney Rapid Bus Network**, part of the **Western Sydney Infrastructure Plan**, includes high-frequency routes linking Penrith, Liverpool, and Campbelltown to the Aerotropolis. The **North–South Rail Link**, envisioned beyond 2035, will complement this by connecting Western Sydney Airport to Macarthur and Schofields.

The **Traffic Modelling Report** highlights expected demand growth of **35–45%** for public transport trips by 2036, driven by increased employment around Bradfield, Westmead, and Parramatta .

Capacity and Demand Outlook

Modelling forecasts suggest that the combined capacity of new rail and metro projects will accommodate up to **400,000 additional daily public transport trips** by 2036, potentially shifting **15–20%** of private vehicle users to mass transit modes. Accessibility within a 30-minute commute radius of major centres such as **Parramatta**, **Liverpool**, and **Bradfield City** is expected to improve substantially.

Project	Mode(s)	LGAs Affected	Status / Notes
Sydney Metro – Southwest (Sydenham → Bankstown)	Metro (conversion of heavy rail)	Canterbury-Bankstown, parts of inner SW / connecting LGAs	Heavy-rail T3 Bankstown Line being converted to fully automated metro line. New trains, platforms, and safety gates. Completion target **2026**.
Sydney Metro – Western Sydney Airport	Metro (new line)	Blacktown (St Marys), Liverpool, Camden (via Bringelly), Penrith	23 km metro linking St Marys ↔ Western Sydney International Airport ↔ Bradfield City Centre. Major tunnelling complete, station builds underway. Opens **2026–27**.
Sydney Metro West (Parramatta ↔ Sydney CBD)	Metro (new line)	Parramatta, The Hills (western fringe), Inner West	24 km underground metro linking Parramatta → Sydney CBD via Olympic Park. Tunnelling & station construction in progress. Target **2030–32**.
Parramatta Light Rail – Stage 1	Light Rail	Parramatta, (Cumberland fringe)	12 km light-rail from Westmead ↔ Carlingford via Parramatta CBD. Track complete, testing & commissioning under way; opening **late 2025**.

Parramatta Light Rail – Stage 2 (Early Works)	Light Rail	Parramatta, Sydney Olympic Park (potential extension area)	Early works and bridge construction funded. Full delivery under staged program; main works pending budget approval.
Fifteenth Avenue Smart Transit (FAST) – Stage 1 Enabling Works	Bus Rapid Transit / Priority Bus Corridor	Liverpool ↔ Western Sydney Airport corridor (via Camden fringe)	Corridor upgrades and design advancing; bus priority infrastructure planned for future.

Projects in the Pipeline

The projects listed below are funded for design, for business cases, or awaiting full construction funding.

Project	Mode(s)	LGAs Affected	Status / Notes
Fifteenth Avenue Smart Transit (FAST) – Full Delivery	Bus Rapid Transit	Liverpool, Camden	**Detailed design under way**; full corridor implementation to commence mid-/late 2020s after early works.
New Rapid Bus Services to Western Sydney Airport & Bradfield	Bus Rapid / Express	Liverpool, Camden, Blacktown	Planning of high-frequency "Rapid Bus" services linking Penrith, Mt Druitt, Liverpool, Leppington, and Campbelltown with the Airport/Bradfield precinct. In **detailed planning and consultation phases**

Parramatta Light Rail – Stage 2 (Main Works)	Light Rail	Parramatta, Canterbury-Bankstown (edge), Sydney Olympic Park	Main construction subject to future state budget allocation; will extend Stage 1 to Olympic Park.
Metro West Future Extension (East & West Options)	Metro	Parramatta, (Cumberland fringe)	Sydney Metro preparing business cases for potential future extensions beyond current Metro West termini (both east to La Perouse and west to Western Sydney).
Daniels Road Bus Link (Blacktown Council)	Bus Rapid / Priority	Blacktown	Planned new bus link to improve bus speed and reduce congestion around Rooty Hill/Glendenning growth areas. Council-led project awaiting full funding.

Corridor Preservations & Planning

The projects listed below are strategic transport corridors under protection or study for future metro/heavy rail/BRT routes.

Project	Mode(s)	LGAs Affected	Status / Notes
Tallawong → St Marys Corridor (T2SM)	Metro / Passenger Rail	The Hills, Blacktown	Corridor protection & feasibility work for future metro-style link connecting Metro North West (Tallawong) to Western Line (St Marys).
North-South Rail Line (NSRL)	Metro / Heavy Rail	Blacktown, Liverpool, Camden	Protected corridor from Schofields → Western Sydney Airport → Macarthur, forming long-term north–south spine for Western Sydney.

South West Rail Link Extension (SWRLE)	Heavy Rail / Metro	Camden, Liverpool	Preserved alignment from Leppington → Western Sydney Airport → Bradfield City Centre → Macarthur; under joint Commonwealth/NSW study.
Leppington ↔ Bradfield ↔ Macarthur Rail Corridor	Heavy Rail / Metro	Camden, Liverpool, Parramatta, (indirect link)	Corridor preserved under Transport for NSW's "Western Sydney Rail Needs" framework for long-term expansion to serve South-West Growth Area.
Outer South-West Integrated Transport Plan (associated corridors)	Mixed (BRT / Rail integration)	Camden, Liverpool, Penrith	Strategic plan combining new corridors and upgrades for long-term growth around Oran Park, Narellan, and Bringelly.
Outer Sydney Orbital (OSO) - Stage 1	Mixed (BRT / Rail integration)	Camden, Liverpool, Penrith	OSO1 is located between Marsden Park in the north and the Hume Motorway near Menangle in the south.

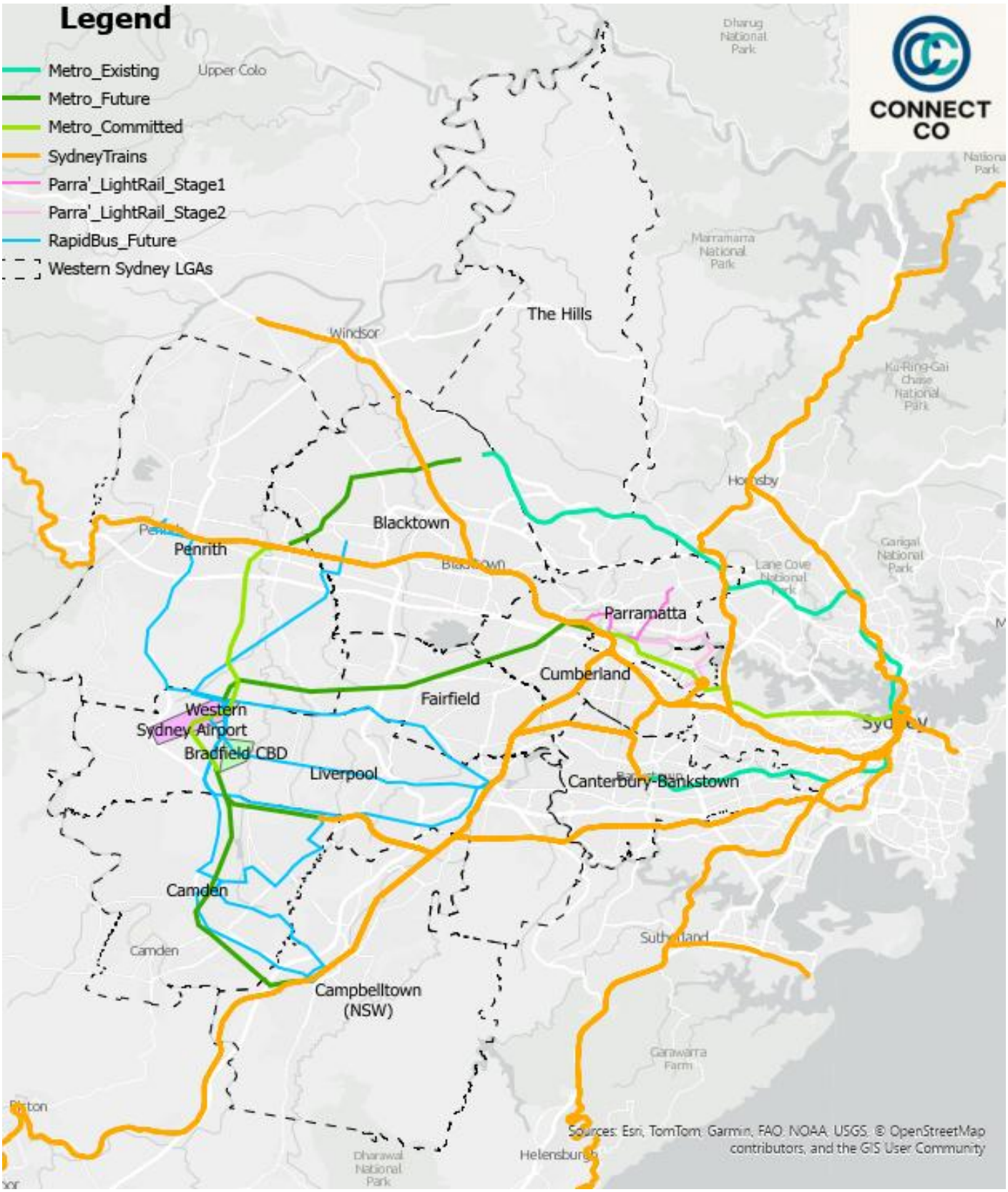

Figure 18 Sydney Transport Infrastructure – Current, Committed and Future Potential.

Chapter 12: Detailed Opal Data Assessment of Current and Future Rail Network Performance

This section presents the results of our original detailed numerical analysis calculations in assessing the performance (in terms of passenger demand and capacity) of both the current and future train and metro rail network servicing commuters from Western Sydney.

The current network's "AM Peak" performance was assessed ***based on actual historical publicly available Opal Card data*** from earlier in 2025. The NSW Government Transport Open Data Hub's "ROAM" Rail Opal Assignment Model data for 8-9am on Wednesday 5th March 2025 was selected as the "typical present day" data sample that formed the basis of our detailed train and metro network data analysis.

Our analysis primarily focussed on the rail network servicing Western Sydney LGA's at morning peak-hour to Sydney CBD. Whilst the distribution of commuters to various workplace destinations is evolving, our detailed data analysis focused on the commute to Sydney CBD since it remains the most significant "choke point" in the network and generally presents a "worst case" view on the whole network's performance.

The following adequacy metrics were calculated from actual Opal Card usage data:

- Service occupancy utilisation (aka service congestion)
- Service frequency
- Passenger demand
- Seating capacity
- Total (i.e. "crush") capacity

10-year (2036) and 20-year (2046) projected future scenarios were then similarly assessed based on a nuanced approach to scaling up existing demand in proportion to differences in projected future demographic growth rates amongst the various Western Sydney LGA's. We have allowed for the additional capacity provided by the Metro South West extension to Bankstown and the Metro West line to Westmead in our forecast modelling.

Since the overall scope of our study is the housing growth and transport adequacy of Western Sydney, this assessment limited itself to the following heavy rail and metro lines that service Western Sydney commuters:

"Current" Network (Rail Lines Assessed)	"Future" Network (Rail Lines Assessed)
Metro (North West, from Tallawong)	Metro (North West, from Tallawong)
Metro (South West, from Sydenham)	Metro (South West, from Bankstown)
T1 Western	Metro (West, from Westmead)
T2 Inner West & Leppington	T1 Western
T3 Liverpool	T2 Inner West & Leppington
T8 Airport & South	T3 Liverpool
T9 Northern Line	T8 Airport & South
T5 Cumberland Line	

Service Occupancy Utilisation (aka Service Congestion) Definitions

"Service Occupancy ***Seat Utilisation Ratio***" = Number of Passengers Onboard / Number of Seats. i.e. it is the ratio of the demand / seat capacity of that service. It is a measure of how likely it is you will find a seat on that service.

- For any service type, a ratio of "1.0" indicates all seats are taken.
- For heavy rail services, any ratio > "1.6" indicates the service is at "crush capacity". A ratio of "1.6" indicates there are 6 standing passengers for every 10 seated passengers.
- For metro services, any ratio > "3.0" indicates the service is at "crush capacity". A ratio of "3.0" indicates there are 20 standing passengers for every 10 seated passengers.

"Service Occupancy ***Crush Capacity Utilisation Ratio***" = Number of Passengers Onboard / Maximum Number of Passengers that Service can Hold in Extreme Conditions (for respective service type). i.e a measure of total transportation capacity irrespective of whether seated or standing.

- e.g. an average "Service Occupancy Utilisation Ratio" of 0.5 indicates that on average across the AM peak hour services, (provided passenger comfort is not of concern) there is still capacity to double the current number of passengers on this line, using the existing service frequency.
- Typical heavy rail service crush capacity 160% seating capacity according to TfNSW.
- Metro seated & crush capacities are 378 & 1153, according to Sydney Metro Business Case Report. Metro crush utilisation is therefore ~300%.
- Refer to p109 of this PDF (report by VLC in 2019): https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Transport%20Modelling%20Report%20for%20Sydney.pdf

Data Sources

The source ROAM data is available via the link below.

https://opendata.transport.nsw.gov.au/data/dataset/roam-rail-opal-assignment-model

We note that our data analysis files are also available to IA should they wish to interrogate our analysis in more detail.

The demographic raw data/forecasts used as inputs in the "future" assessment has already been presented in an earlier chapter of this report.

ConnectCo's data analysis files are available to view or download via the links below:

https://docs.google.com/spreadsheets/d/1icnzb0oQRpDtw3_X6JG1Z5l4O5i16TRA/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true

https://docs.google.com/spreadsheets/d/1dnlYMbhsjts0Afm1HUaQ0OqG9GViXK4d/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true

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"Current Rail Network" Assessment: Methodology Details

The ROAM CSV data file for Wednesday 5th March 2025 was downloaded from the Transport Open Data Hub website and converted to a MS Excel file. This file has many different columns of data. For this exercise, the most important fields used to filter and obtain the data of interest are as follows:

ROAM Data Field	Comments
ACT_STOP_STN	The station at which the data is recorded for that service (i.e. for that "TRIP_NAME").
SEGMENT_DIRECTION	"Up" indicates the service is heading towards Central. "Down" indicates it is moving away from Central.
TRIP_NAME	This is the label given to ***individual services***. E.g. "107D" is one such service that operates on the T1 Western Line.
SERVICE_LINE	The various train/metro lines on the network. E.g. "Metro North West & Bankstown"; e.g. "T1 Western Line".
ORIG_STN	The scheduled first station name of a service/trip.
ACT_STN_DPRT_TIME_BAND	A 15-minute time band for the actual departure of that service from a station. For the sake of this AM-peak exercise, the 4 time bands of interest that the results were filtered for are those for 08:00 to 08:59 am.
CARD_TYPE	Opal card type. For the sake of this exercise, results were filtered for the "All card types" category, in which TfNSW appears to have rolled-in all the data from the various other card types.
SEAT_CAPACITY	The number of seats available for passengers on that service. For typical 8-car heavy rail services, this is ~900. For 4-car heavy rail services, this is ~450, for 6-car metro services this is 378.
OCCUPANCY_RANGE	This data field provides an indication of the number of passengers on the service when the service leaves the "ACT_STOP_STN". This is given in range bands of 20. E.g. a virtually empty service will show an "OCCUPANCY_RANGE" of 0-20. This data field therefore quantifies the ***passenger demand*** on that service, and by dividing this passenger load by the "SEAT_CAPACITY", we are able to determine ***service congestion*** metrics. Since this data field is provided as a range, for the sake of this exercise the upper limit of each range band was extracted for each data point into a new data field titled "Occupancy Upper Band". For example, a service with an "OCCUPANCY_RANGE" of 621-640 is given an "Occupancy Upper Band" value of 640. An "Occupancy Utilisation" is then calculated for each data point as follows: ***Occupancy Utilisation*** = Occupancy Upper Band / SEAT_CAPACITY

Pivot tables / pivot charts were then created, filtering for the relevant data, and calculating averages, maximums, Crush Utilisations, etc. Since this exercise focussed primarily on rail commuter travel into the CBD, a "Station of Interest" was nominated for each line (" ACT_STOP_STN" field filter).

For most lines coming from Western Sydney, this was Redfern Station, since it is the penultimate stop prior to Central Station and so the measures of passenger load demand and congestion are highest when measured just as the service is leaving Redfern Station. Once the service arrives at Central a significant portion of passengers disembark and so the "OCCUPANCY_RANGE" value for such services generally decline at the Central data points.

Note that Redfern was not always chosen as the station of interest, and in some cases was not applicable for certain lines, for instance Victoria Cross was selected as the station of interest for the Metro North West Line. We note that from the AM-peak data, we noticed the T8 Airport & South Line has only about half of its services stopping at Redfern prior to Central. We therefore also examined the data for services leaving Central Station, more for the sake of ensuring we did not undercook calculations of service frequency.

Note that since we are working with actual historical data, in some cases the data shows a different number of services leaving for example Redfern and leaving Central at peak hour, which at face value does not make sense. However this is easily explained by those services that came to those stations either very close to the start or very close to the end of the 08:00 to 08:59 am time band, in which case a certain service may only appear in the filtered data for one of those two stations.

For the Blacktown/Leppington T5 Cumberland Line, which obviously does not service the Sydney CBD, the above similar exercise was repeated however service maximum passenger demand / occupancy utilisations were calculated agnostic to train station, i.e. calculated for wherever along that trip the service was most full. Results for service frequency were calculated from the services departing from Leppington.

The following adequacy metrics were calculated from actual Opal Card usage data. The formulas used for these calculated metrics are provided in the results summary table that follows.

- Service occupancy utilisation (aka service congestion)
- Service frequency
- Passenger demand
- Seating capacity
- Total (i.e. "crush") capacity

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"Current Rail Network" Assessment: Results and Commentary

2025 Current Western Sydney Train and Metro Capacities

Data Analysis Summary of TfNSW "ROAM" Data for: 8-9am Peak Hour // Wednesday 5th March 2025 // For Services Originating in Western Sydney

			Service Congestion Measures					Service Frequency				Total Demand AM Peak	Total Capacity AM Peak	
			Service Occupancy **Seat Utilisation Ratio** (at Station of Interest)			Service Occupancy **Crush Capacity Utilisation Ratio** (at Station of Interest)	Average Number of Seats per Service	Number of Services Leaving Station "X" within Peak Hour		Frequency of Services Leaving Station "X" within Peak Hour (Minutes between Services)		Estimated Total Number of Passengers Arriving at Central at Peak Hour = # Services * Avg Seats per Service * Avg Seat Utilisation	**Seat Capacity** = # Services * Avg Seats per Service	**Crush Capacity** = # Services * (Crush Capacity per Service) = # Services * (Avg Seats per Service * Crush Ratio for that Service Type)
Line	Direction	Station of Interest	Min.	Avg.	Max	Avg.		Station of Interest	Central	Station of Interest	Central			
Metro (N West, from Tallawong)	Citybound	Victoria Cross	0.79	1.64	3.17	0.55	378	25	25	2.4	2.4	15,498	9,450	28,350
Metro (S West, from Sydenham)	Citybound	Waterloo	0.11	0.15	0.21	0.05	378	22	22	2.7	2.7	1,247	8,316	24,948
T1 Western	Citybound	Redfern	0.83	1.13	1.74	0.71	881	14	13	4.3	4.6	13,937	12,334	19,734
T2 Inner West & Leppington	Citybound	Redfern	0.65	0.90	1.28	0.56	895	12	12	5.0	5.0	9,666	10,740	17,184
T3 Liverpool	Citybound	Redfern	0.82	1.11	1.23	0.69	895	4	4	15.0	15.0	3,974	3,580	5,728
T8 Airport & South	Citybound	Redfern	0.71	1.06	1.41	0.66	896	8	16	7.5	3.8	15,196	14,336	22,938
T9 Northern Line	Citybound	Redfern	0.60	0.98	1.45	0.61	886	8	7	7.5	8.6	6,946	7,088	11,341
T5 Cumberland Line	Any	For Utilisation: Wherever maximum occupancy is recorded. For Service Frequency: Leppington	0.04	0.60	1.11	0.38	452	2	N/A	30.0	N/A	N/A	904	1,446

- The calculated occupancy seat utilisation ratios indicate that in the AM peak in 2025, on average by the time the services reach the CBD, effectively all seats are taken.
- The calculated crush capacity utilisation ratios indicate that in the AM peak in 2025, there is still some reserve "ultimate capacity" available on all services, with the worst case line being the T1 Western with an average crush capacity utilisation ratio of 0.71; an average seat utilisation ratio of 1.13 and a maximum recorded seat utilisation ratio of 1.74, which indicates that service was well and truly at crush capacity!
- As demand from Liverpool LGA increases, there appears to be an opportunity to increase the frequency of peak hour citybound services given there are currently only 4 services arriving at the city during peak hour on the T3 line.
- Clearly plenty of scope to increase frequency of Blacktown/Leppington services, should there be increased traffic between the two nodes.
- General note that applies to all existing lines: The new metro lines already under construction will ease the burden on existing citybound lines by providing parallel alternative travel path options for commuters. The question is by how much? This question is addressed by the "future network" assessment that follows.

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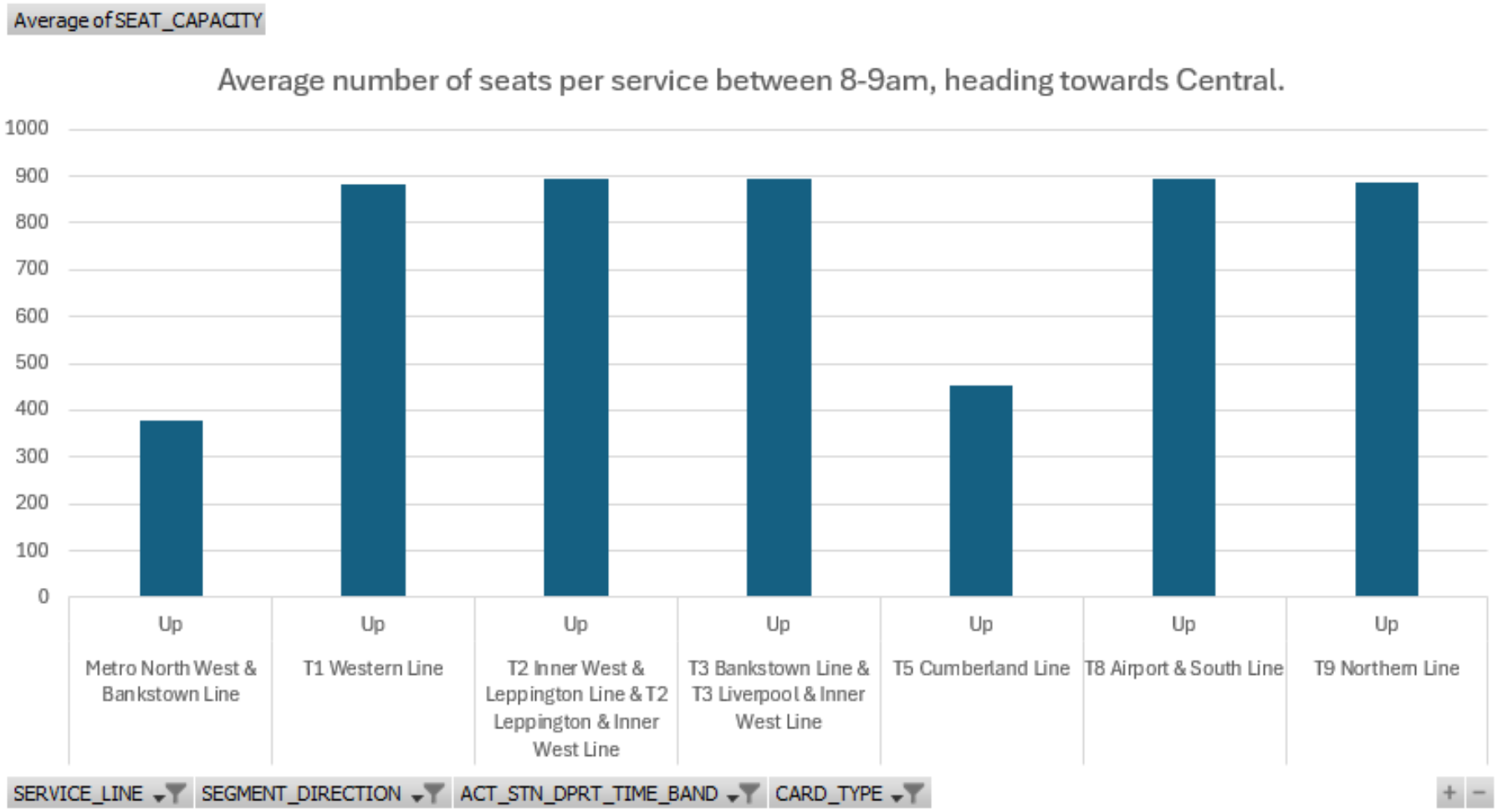

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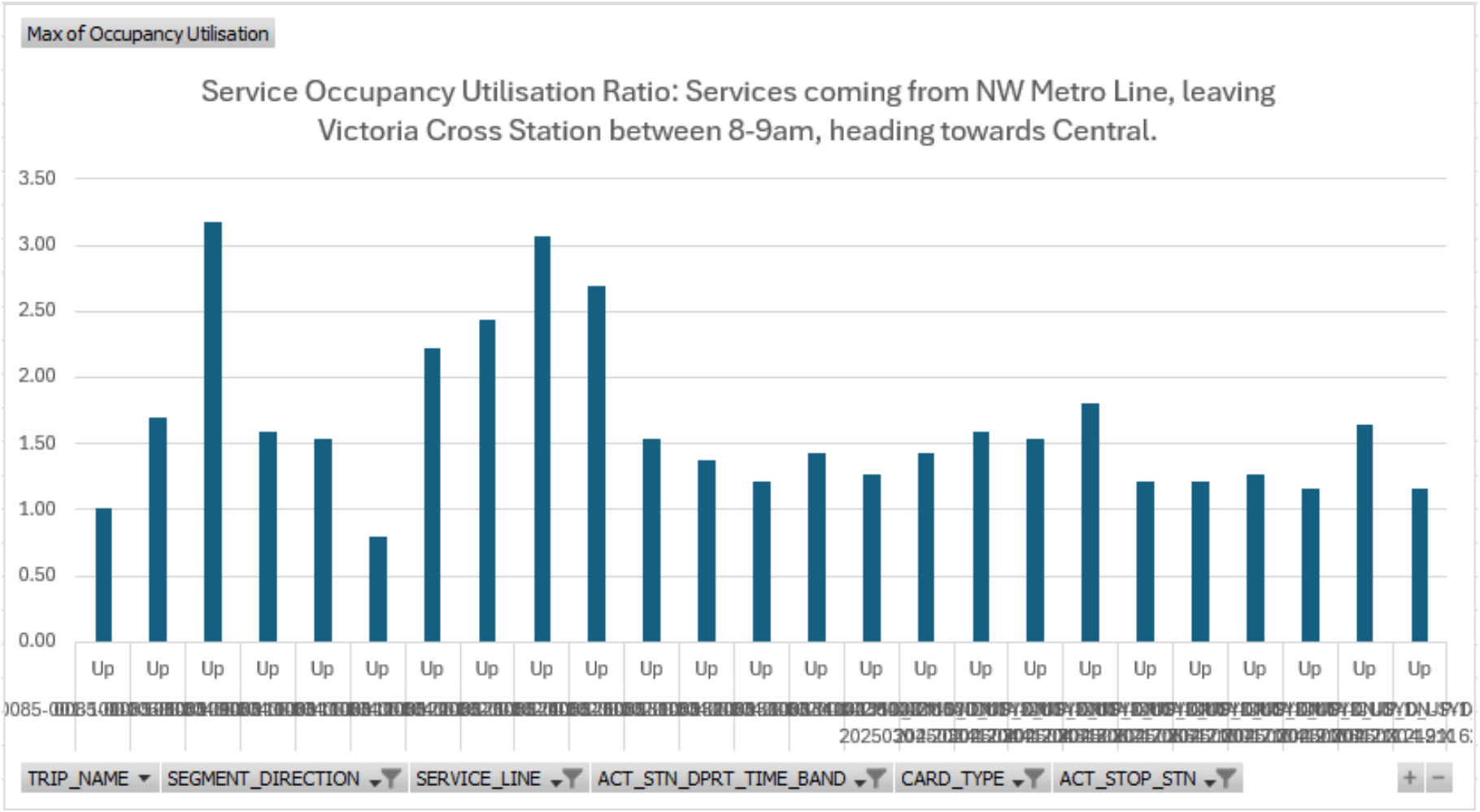

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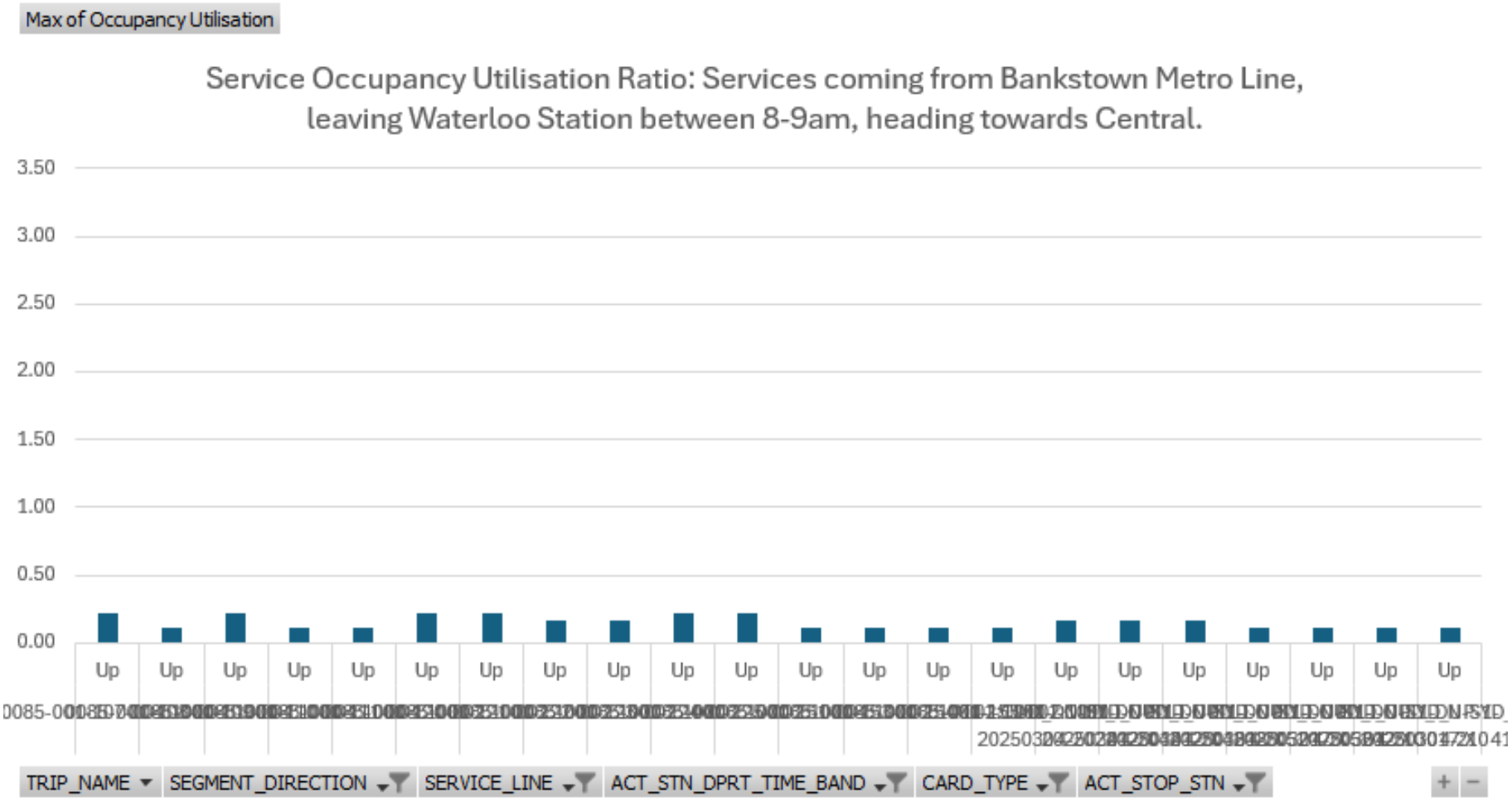

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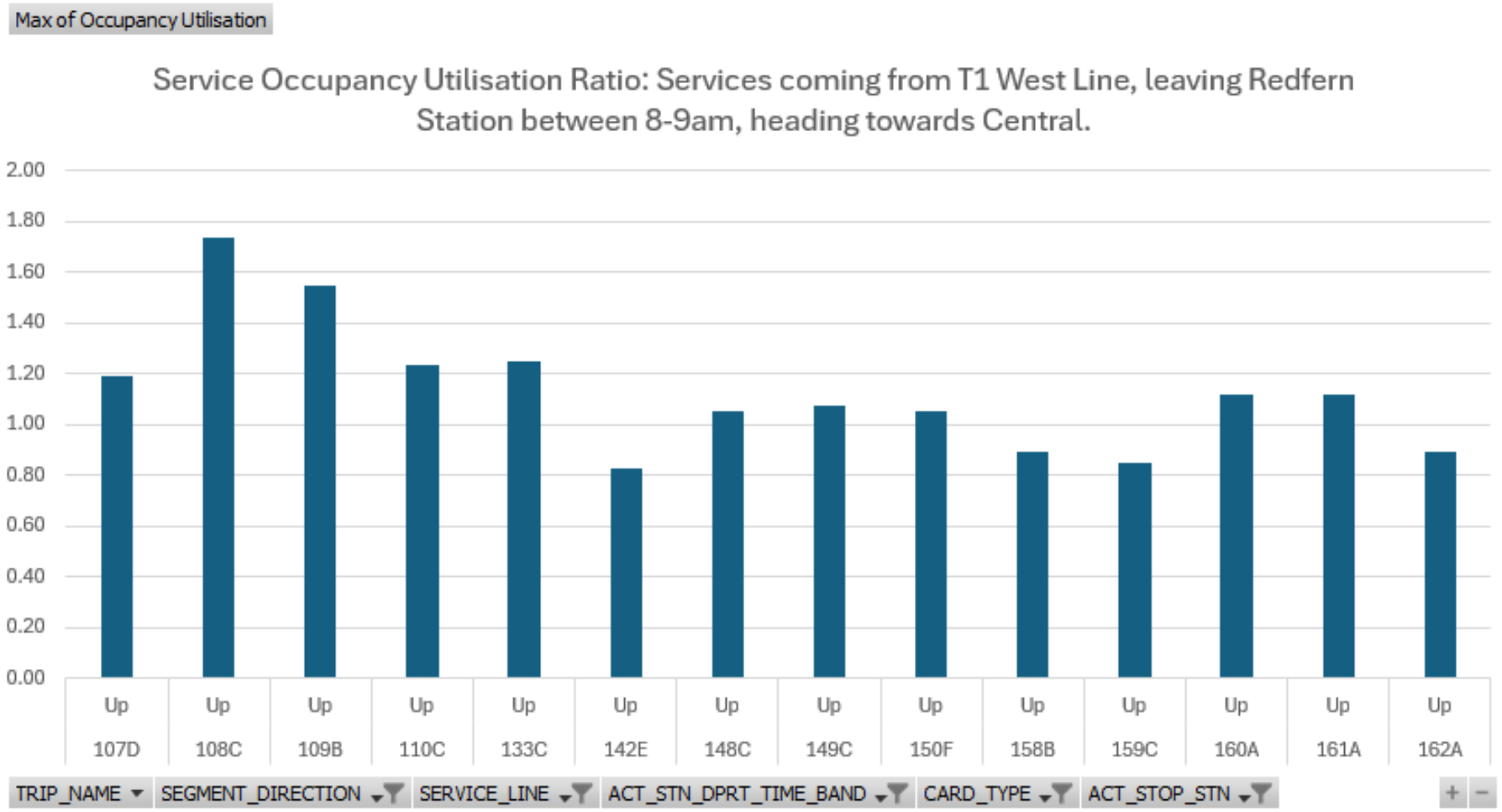

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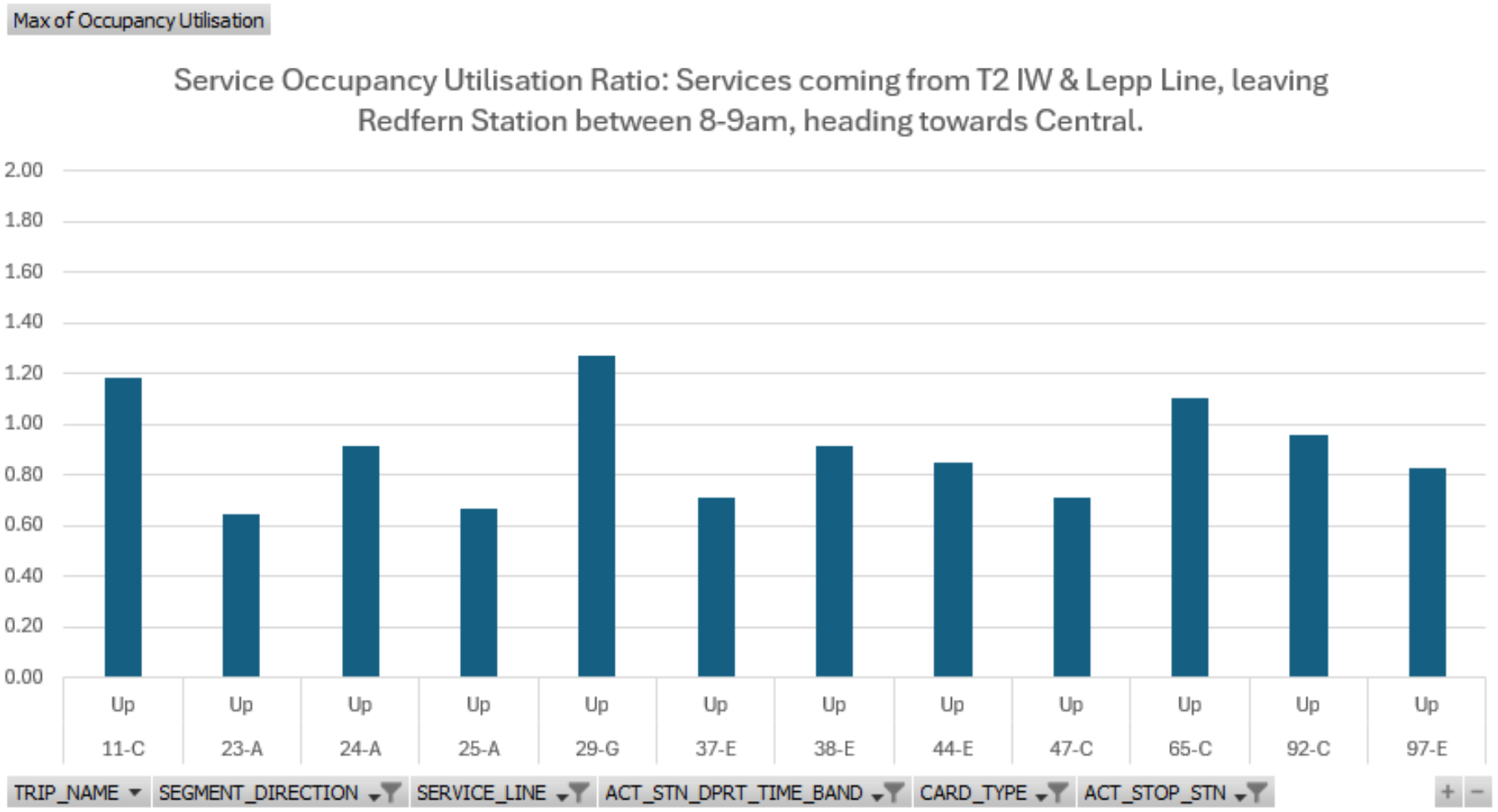

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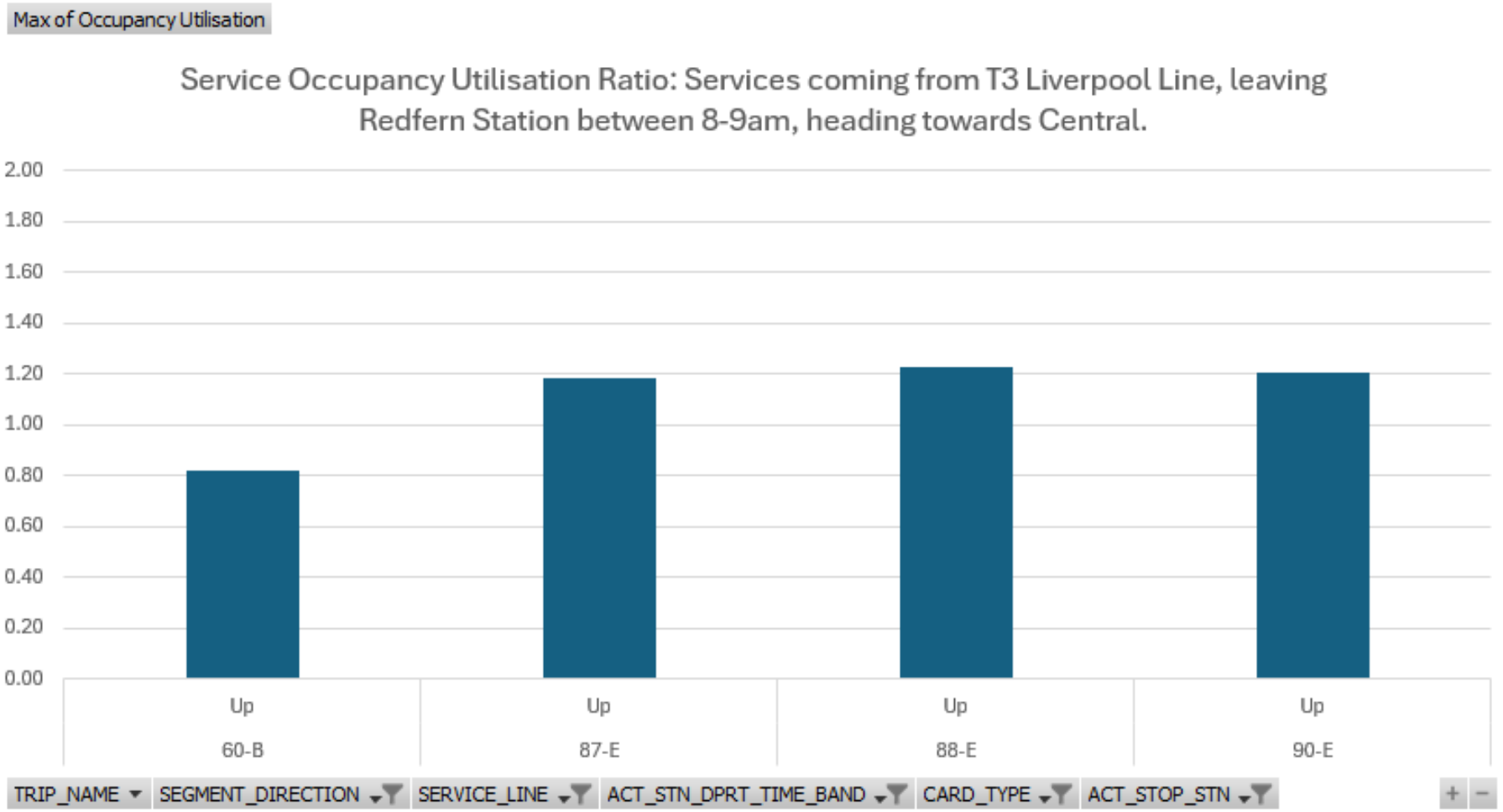

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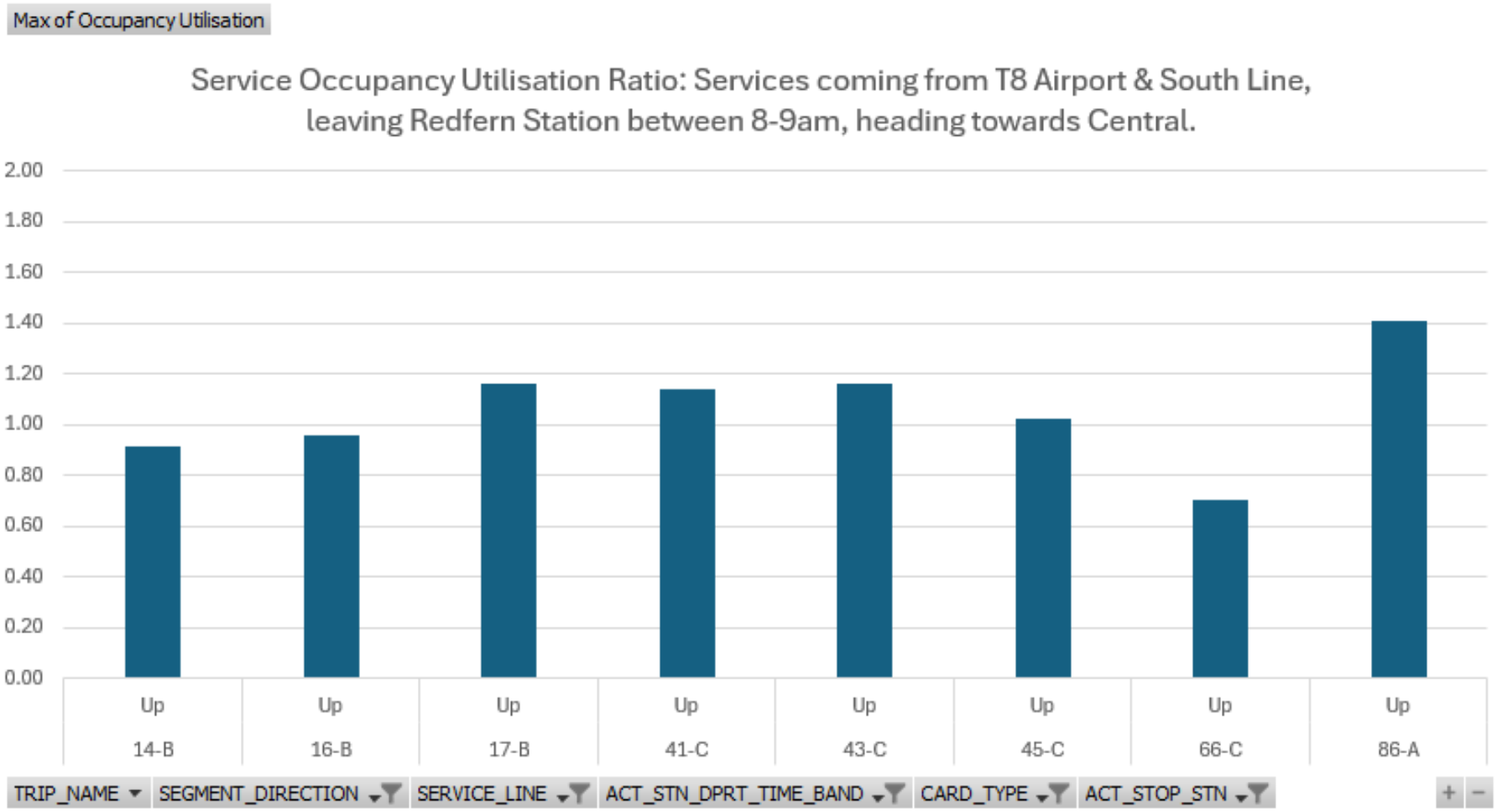

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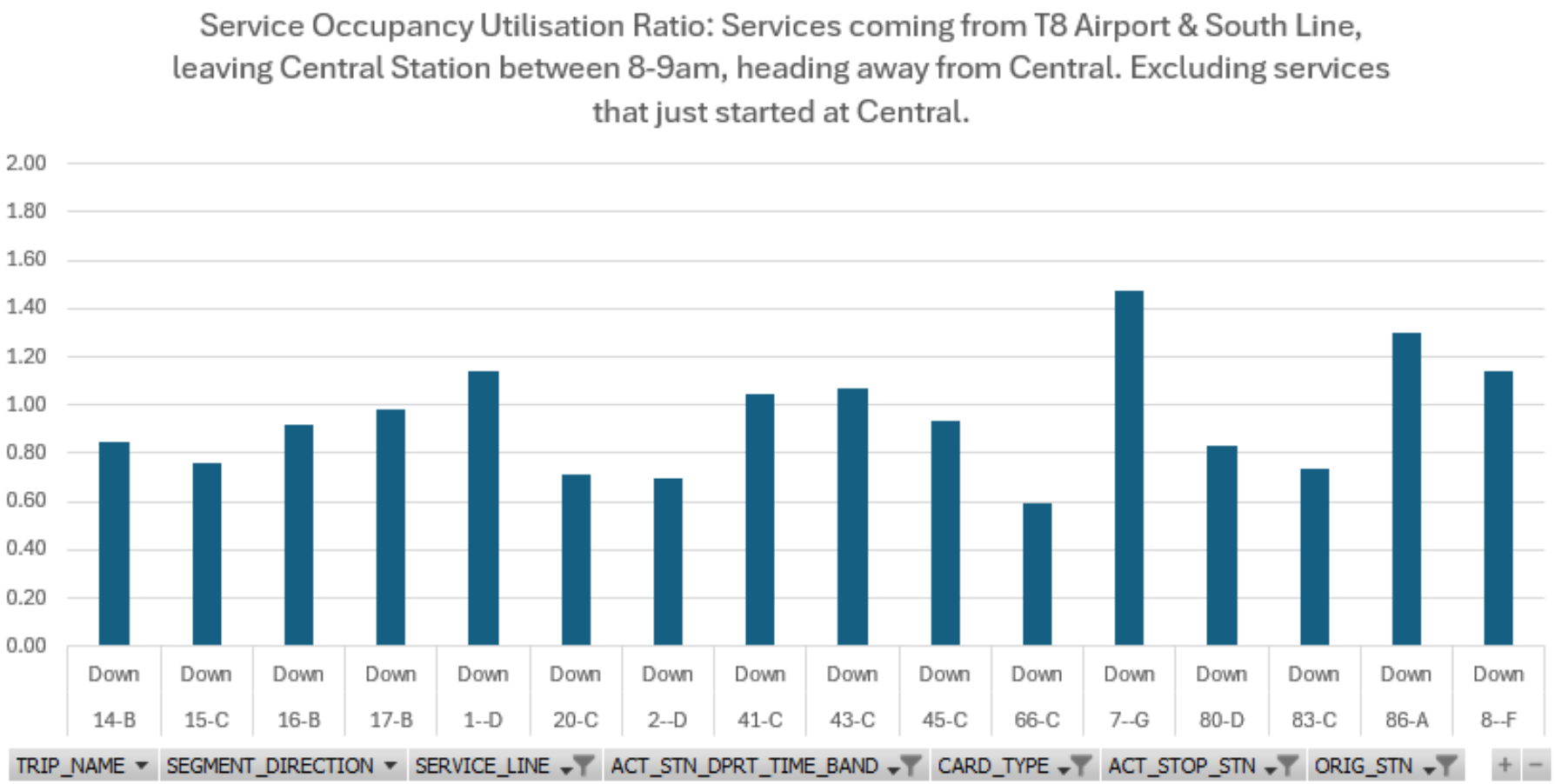
Max of Occupancy Utilisation



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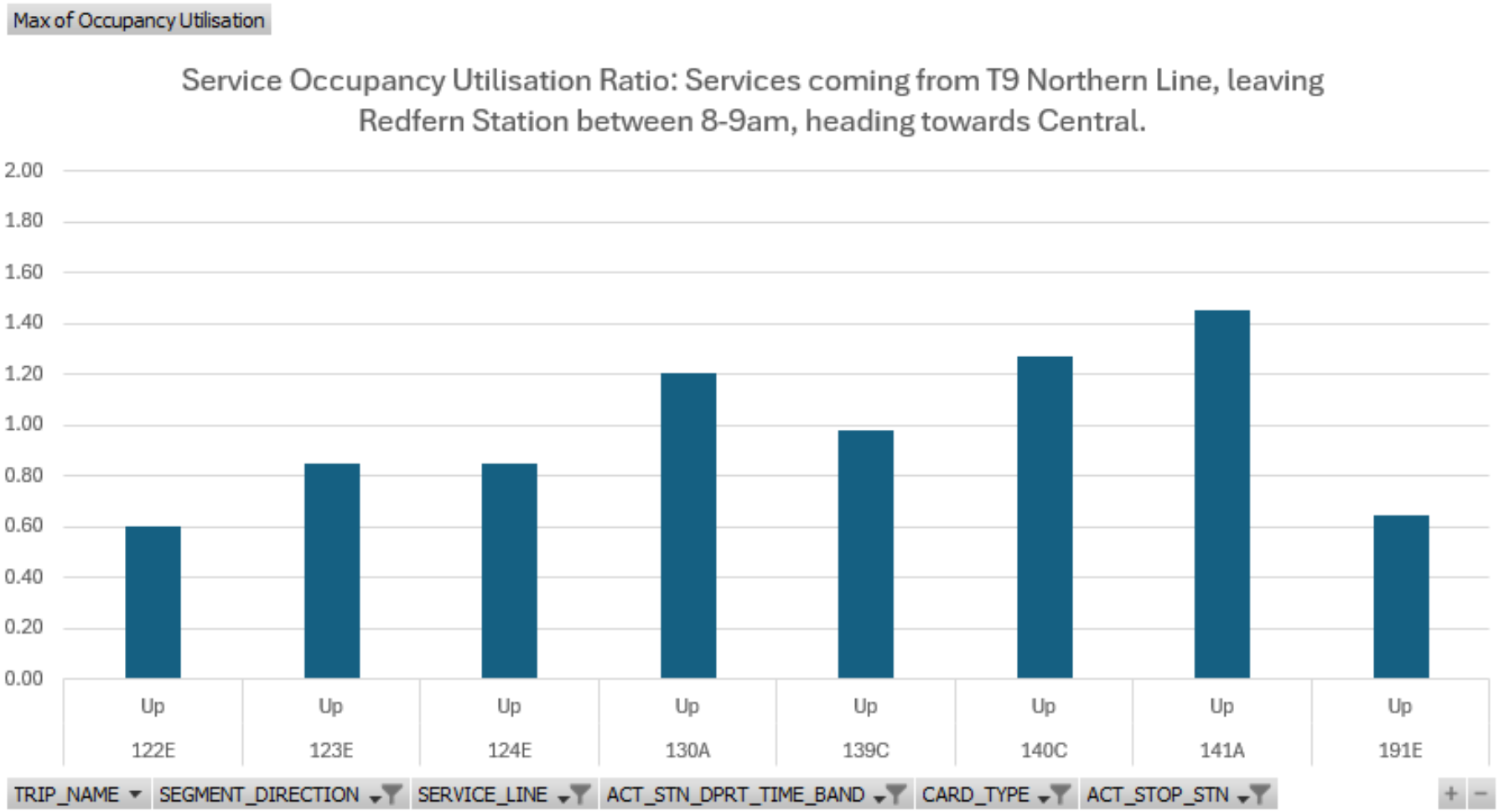

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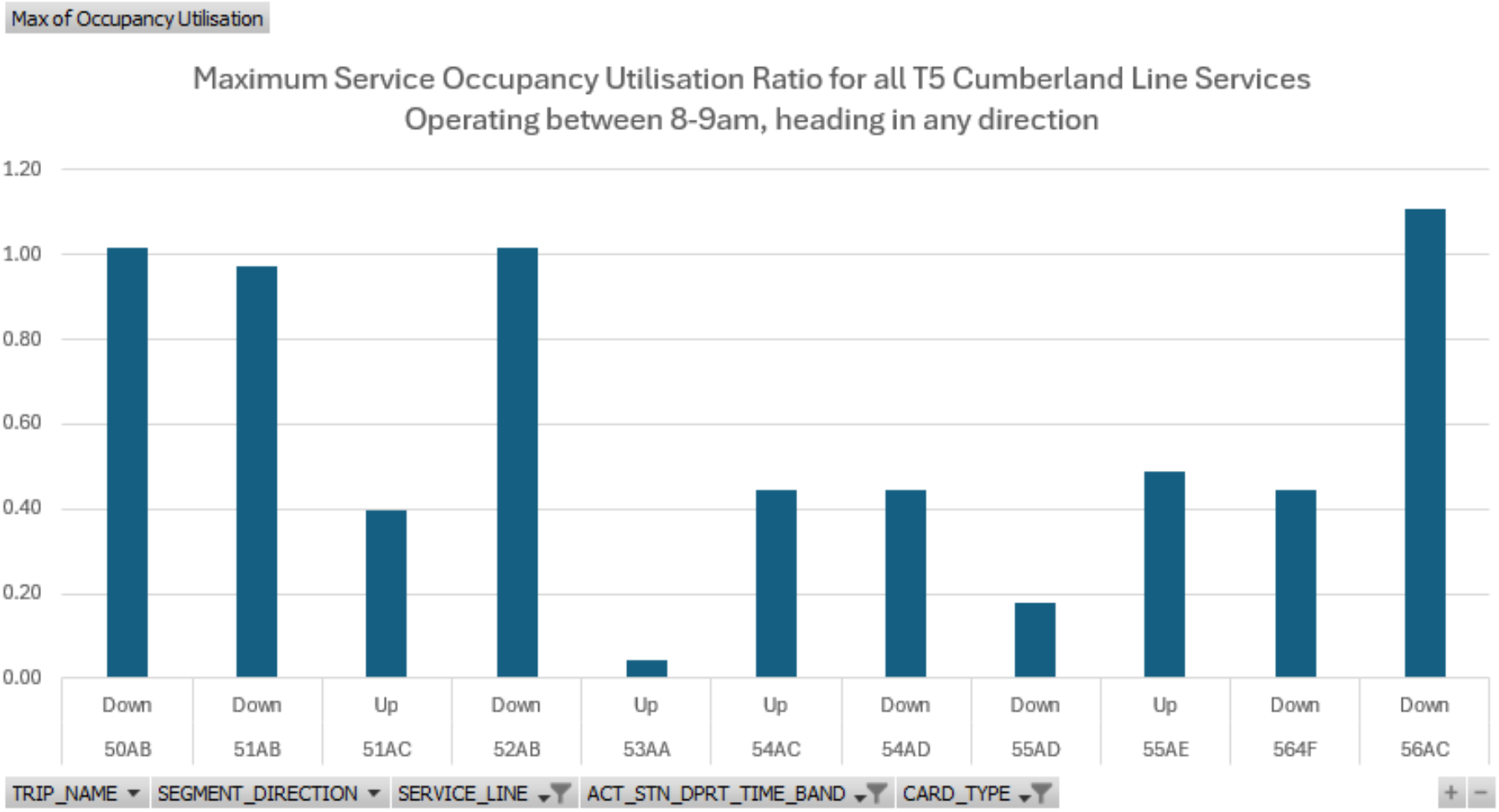

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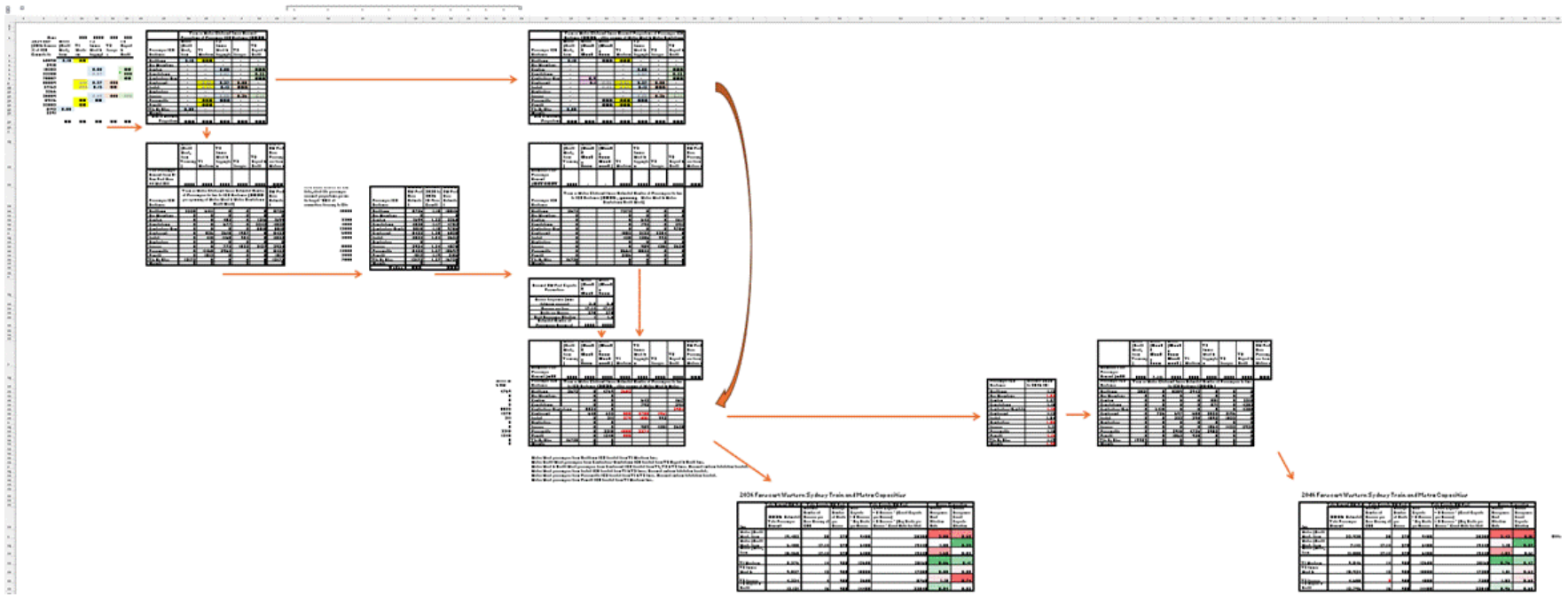
“Future Rail Network” Assessment: Methodology Details and Discussion

Several steps of calculations and assumptions were made in order to finally arrive at our forecasts of the future performance of Western Sydney’s rail network (with respect to travel into Sydney CBD). We invite the reader to review our calculation spreadsheet (linked below) if you are so inclined – this may make it easier to follow the explanations that follow, which we have nonetheless provided to explain our methodology used in these forecasts.

https://docs.google.com/spreadsheets/d/1dnlYMbhsjts0Afm1HUaQ0OqG9GViXK4d/edit?usp=sharing&ouid=116564373643409641725&rtpof=true&sd=true



Our previous analysis of the 8-9am on Wednesday 5th March 2025 ROAM data provided us with baseline “current” estimates of total AM-peak passenger demand across the various rail lines servicing Western Sydney. Our analysis of Western Sydney demographic forecasts provided us with growth estimates across the various Western Sydney LGA’s. To account for the different rates of growth across different LGA’s, the first challenge to be overcome in this exercise of forecasting the future performance of the rail network was therefore how to integrate these two data sets together, given the ROAM data does not provide information re passenger LGA of residence?

	Train or Metro Citybound Lines: Assumed Proportions of Passenger LGA Residence (**2025** pre opening Metro West & Bankstown S West)				
Passenger LGA Residence	Metro (North West, from Tallawong)	T1 Western	T2 Inner West & Leppington	T3 Liverpool	T8 Airport & South
Blacktown	0.15	**0.46**	-	-	-
Blue Mountains	-	-	-	-	-
Camden	-	-	0.05	-	**0.08**
Campbelltown	-	-	0.07	-	0.22
Canterbury-Bankstown	-	-	-	-	**0.56**
Cumberland	-	0.06	0.27	0.50	-
Fairfield	-	0.03	0.12	**0.24**	-
Hawkesbury	-	-	-	-	-
Liverpool	-	-	0.08	0.26	0.14
Parramatta	-	**0.32**	**0.41**	-	-
Penrith	-	**0.13**	-	-	-
The Hills Shire	0.85	-	-	-	-
Wollondilly	-	-	-	-	-
Sum of Assumed Proportions	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

	Metro (North West, from Tallawong)	T1 Western	T2 Inner West & Leppington	T3 Liverpool	T8 Airport & South	Sum of AM Peak Hour Passengers from Metros + T1 + T2 + T3 + T8
Total Passenger Demand from 8-9am Peak Hour // Wed 5th March 2025	15,498	13,937	9,666	3,974	15,196	**58,271**
Passenger LGA Residence	Train or Metro Citybound Lines: Estimated Number of Passengers (Arriving at Central at Peak Hour) by Line by LGA Residence (**2025** pre openning of Metro West & Metro Bankstown South West)					Sum of AM-Peak Hour Estimated Passengers by LGA
Blacktown	2325	6411	0	0	0	8736
Blue Mountains	0	0	0	0	0	0
Camden	0	0	483	0	1216	1699
Campbelltown	0	0	677	0	3343	4020
Canterbury-Bankstown	0	0	0	0	8510	8510
Cumberland	0	836	2610	1987	0	5433
Fairfield	0	418	1160	954	0	2532
Hawkesbury	0	0	0	0	0	0
Liverpool	0	0	773	1033	2127	3934
Parramatta	0	4460	3963	0	0	8423
Penrith	0	1812	0	0	0	1812
The Hills Shire	13173	0	0	0	0	13173
Wollondilly	0	0	0	0	0	0

The first calculation therefore involved determining a reasonable distribution of passenger LGA residence for each Western Sydney rail line. This was typically done by taking weighted averages of estimated resident population multiplied by %LGA primarily commuting via train, for the LGA's serviced by each train line. A "discretion factor" was also applied in many cases to either scale up or scale down calculated proportions. For example, for the rail lines considered in this future assessment, the Blacktown LGA is only serviced by the Metro North West (and only 1 station on this line) and by the T1 Western Line. Therefore, when estimating the proportion of passengers from Blacktown LGA on the T1 Western Line, a "discretion factor" was used to scale up this proportion. In contrast, Cumberland LGA is serviced by the T1, T2 and T3 lines, therefore when estimating the proportion of passengers from Cumberland LGA on the T1 Western Line, a "discretion factor" was used to scale down this proportion,

with the rationale that commuters from Cumberland have more options of train services to catch across multiple lines, and will not necessarily dominate occupancy on the T1 Western Line.

The “discretion factors” were also used to adjust the assumed passenger proportions per line so that the total sums of AM-peak estimated passengers per resident LGA was roughly equal to 50% of that LGA’s residents that had nominated Sydney LGA as their place of work during the 2021 Census.

In the absence of more accurate data, we rather arbitrarily assigned a 0.15 to 0.85 split of the Metro North West’s passengers to Blacktown and The Hills Shire LGA’s, respectively.

We note that this calculation of “assumed proportions of passenger LGA residence for each rail line” is not an “exact science”, however given the lack of data that would enable a more accurate calculation, we believe that we have adopted reasonable proportions.

The 8-9am on Wednesday 5th March 2025 ROAM estimated total passenger demand per rail line was multiplied by the “assumed proportions of passenger LGA residence for each rail line”. From our demographic analysis of forecasted population growth, we determined appropriate “2025-2036 10-year growth factors” for each LGA to account for varying growth rates, with which we used to scale up the 2025 passenger demand to 2036 forecasted passenger demand.

The next challenge was how to account for the added capacity of the new metro lines, and what assumed proportions of passenger LGA residence to adopt for passengers on the new metro lines? For this second question, we adopted an assumed simple 0.9 to 0.1 split for passengers on the Metro South West from Bankstown heading into Sydney CBD. For passengers on the Metro West from Westmead into Sydney CBD we simply adopted the same passenger resident LGA split as was previously calculated for he T1 Western Line.

The additional capacity provided by the new metro lines was calculated based on reasonable assumptions based on the current actual data from the Metro North West Line: service frequency, seats per service and seat occupancy utilisation. This enabled an estimate to be made for the number of passengers arriving at Central at AM-peak via the new metro lines.

Given the new metro lines provide additional capacity via added redundant travel paths into Sydney CBD, we assumed that the new metro lines would divert existing passengers off the existing rail lines and onto the new metro lines, thus freeing up capacity on the existing rail lines.

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Assumed AM Peak Capacity Parameters	Metro (**South West, from Bankstown**)	Metro (**West, from Westmead**)
Service Frequency (mins between services)	3.5	3.5
Services per hour	17.14	17.14
Seats per Service	378	378
Seat Occupancy Utilisation	1	1.6
Estimated Number of Passengers Arriving at Central at Peak Hour	6,480	10,368

	Metro (North West, from Tallawong)	Metro (**South West, from Bankstown**)	Metro (**West, from Westmead**)	T1 Western	T2 Inner West & Leppington	T3 Liverpool	T8 Airport & South	Sum of AM Peak Hour Passengers from Metros + T1 + T2 + T3 + T8
Estimated Total Passenger Demand (**with new Metros**)	19,403	6,480	10,368	8,276	9,527	4,234	12,121	**70,409**
Passenger LGA Residence	Train or Metro Citybound Lines: Estimated Number of Passengers (Arriving at Central at Peak Hour) by Line by LGA Residence (**2036**, after opening of Metro West & Metro Bankstown South							
Blacktown	2673	0	4769	2603				
Blue Mountains		0	0					
Camden		0	0		643		1617	
Campbelltown		0	0		792		3911	
Canterbury-Bankstown		5832	0				3954	
Cumberland		648	622	580	2708	1961		
Fairfield		0	311	279	1051	992		
Hawkesbury		0	0					
Liverpool		0	0		959	1281	2638	
Parramatta		0	3318	4005	3374			
Penrith		0	1348	808				
The Hills Shire	16730	0	0					
Wollondilly		0	0					

The following diversion assumptions were made:

- Metro West passengers from Blacktown LGA diverted from T1 Western Line.
- Metro South-West passengers from Canterbury-Bankstown LGA diverted from T8 Airport & South Line.
- Metro West & South-West passengers from Cumberland LGA diverted from T1, T2 & T3 Lines. Assumed uniform distribution diverted.
- Metro West passengers from Fairfield LGA diverted from T1 & T2 Lines. Assumed uniform distribution diverted.
- Metro West passengers from Parramatta LGA diverted from T1 & T2 Lines. Assumed uniform distribution diverted.
- Metro West passengers from Penrith LGA diverted from T1 Western Line.

Once again we invite the interested reader to review our calculation spreadsheet for further detail.

With these steps completed, we have now determined for the 10-year forecast scenario the 2036 estimated total passenger demand. For each line, service frequency and seats per service were assumed to remain equal to their values in 2025. The number of seats available during the AM-peak could therefore be calculated for each line, and similarly the crush capacity of each line, by multiplying seat capacity by the appropriate crush multiplier for the service type (3.0 for metro services and 1.6 for the traditional heavy rail passenger services). The 2036 scenario results summary table is provided in the following sub-section.

Calculating the 20-year scenario 2046 forecast was relatively straightforward from this point. From our demographic analysis of forecasted population growth, we determined appropriate "2036-2046 10-year growth factors" for each LGA to account for varying growth rates, with which we used to scale up the 2036 passenger demand to 2046 forecasted passenger demand for each rail line according to the same assumed distribution of resident origin LGA per rail line as was previously calculated/assumed.

Having now determined the 2046 estimated total passenger demand, for each line, service frequency and seats per service were assumed to remain equal to their values in 2025, with the exception of the T3 Liverpool line which we assumed would increase the number of peak hour services from 4 to 5 per hour. The number of seats available during the AM-peak could therefore be calculated for each line, and similarly the crush capacity of each line, by multiplying seat capacity by the appropriate crush multiplier for the service type (3.0 for metro services and 1.6 for the traditional heavy rail passenger services). The 2046 scenario results summary table is provided in the following sub-section.

Key assumptions and limitations to note regarding our adopted methodology for forecasting the performance (into Sydney CBD) of the future Western Sydney rail network:

- Whilst we applied a nuanced approach to scaling up passenger demand in proportion to increases in Western Sydney's future populations, in this modelling we did not per se account for increases in the rates of public transport (in this case, train) usage across the population of Western Sydney. E.g. if it is generally ~13%, for the sake of this forecasting exercise, we did not account for this rate to increase to say 20%.
- We also note that whilst these rail lines primarily service Western Sydney, to varying degrees they also service LGA's beyond Western Sydney. For the sake of our forecast modelling, this was ignored.
- We did not account for "entirely new" passengers that would mode shift to say the new metro lines once they come on-line.

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"Future Rail Network" Assessment: Results and Commentary

2036 Forecast Western Sydney Train and Metro Capacities

	Total Demand AM Peak	Total Capacity AM Peak		Total Capacity AM Peak		Service Congestion	
Line	**2036** Estimated Total Passenger Demand	Assumed Number of Services per Hour Arriving at CBD	Average Number of Seats per Service	Seat Capacity = # Services * Avg Seats per Service	Crush Capacity = # Services * (Crush Capacity per Service) = # Services * (Avg Seats per Service * Crush Ratio for that Service Type)	Service Occupancy Seat Utilisation Ratio	Service Occupancy Crush Capacity Utilisation Ratio
Metro (North West, from Tallawong)	19,403	25	378	9450	28350	2.05	0.68
Metro (South West, from Bankstown)	6,480	17.14	378	6480	19440	1.00	0.33
Metro (West, from Westmead)	10,368	17.14	378	6480	19440	1.60	0.53
T1 Western	8,276	14	900	12600	20160	0.66	0.41
T2 Inner West & Leppington	9,527	12	900	10800	17280	0.88	0.55
T3 Liverpool	4,234	4	900	3600	5760	1.18	0.74
T8 Airport & South	12,121	16	900	14400	23040	0.84	0.53

The results of our forecast modelling indicate that the additions of the Metro West and Metro South West extension to Bankstown will provide significant additional capacity to, and ease the burden and congestion on the existing rail network servicing Western Sydney, for traffic into Sydney CBD. The addition of these infrastructure projects is forecast by our modelling to still provide ample capacity to the network, even in the 20-year future scenario, as is indicated from the service occupancy seat utilisation and crush capacity utilisation ratios in these summary tables.

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2046 Forecast Western Sydney Train and Metro Capacities

	Total Demand AM Peak	Total Capacity AM Peak		Total Capacity AM Peak		Service Congestion	
Line	**2046** Estimated Total Passenger Demand	Assumed Number of Services per Hour Arriving at CBD	Average Number of Seats per Service	Seat Capacity = # Services * Avg Seats per Service	Crush Capacity = # Services * (Crush Capacity per Service) = # Services * (Avg Seats per Service * Crush Ratio for that Service Type)	Service Occupancy Seat Utilisation Ratio	Service Occupancy Crush Capacity Utilisation Ratio
Metro (North West, from Tallawong)	22,930	25	378	9450	28350	2.43	0.81
Metro (South West, from Bankstown)	7,141	17.14	378	6480	19440	1.10	0.37
Metro (West, from Westmead)	11,888	17.14	378	6480	19440	1.83	0.61
T1 Western	9,546	14	900	12600	20160	0.76	0.47
T2 Inner West & Leppington	10,924	12	900	10800	17280	1.01	0.63
T3 Liverpool	4,650	5	900	4500	7200	1.03	0.65
T8 Airport & South	13,796	16	900	14400	23040	0.96	0.60

We note that the existing Metro North West Line is already (as of 2025) a very popular route with commuters into the City. The current high passenger demand on this line is then scaled up to account for future growth in the 10 and 20-year scenarios, which indicates the metro line is approaching crush capacity on most services. In reality, as the Metro North West Line becomes increasingly overcrowded, we believe that more commuters will opt to transfer/stay on the North Shore heavy rail line into the city. The trip would be a bit slower for them, but at least will be less overcrowded. We did not include the North Shore Line in the scope of this present analysis, however we note from anecdotal experience that it is currently significantly less crowded in 2025 than it was prior to the extension of the Metro North West Line from Chatswood into the City.

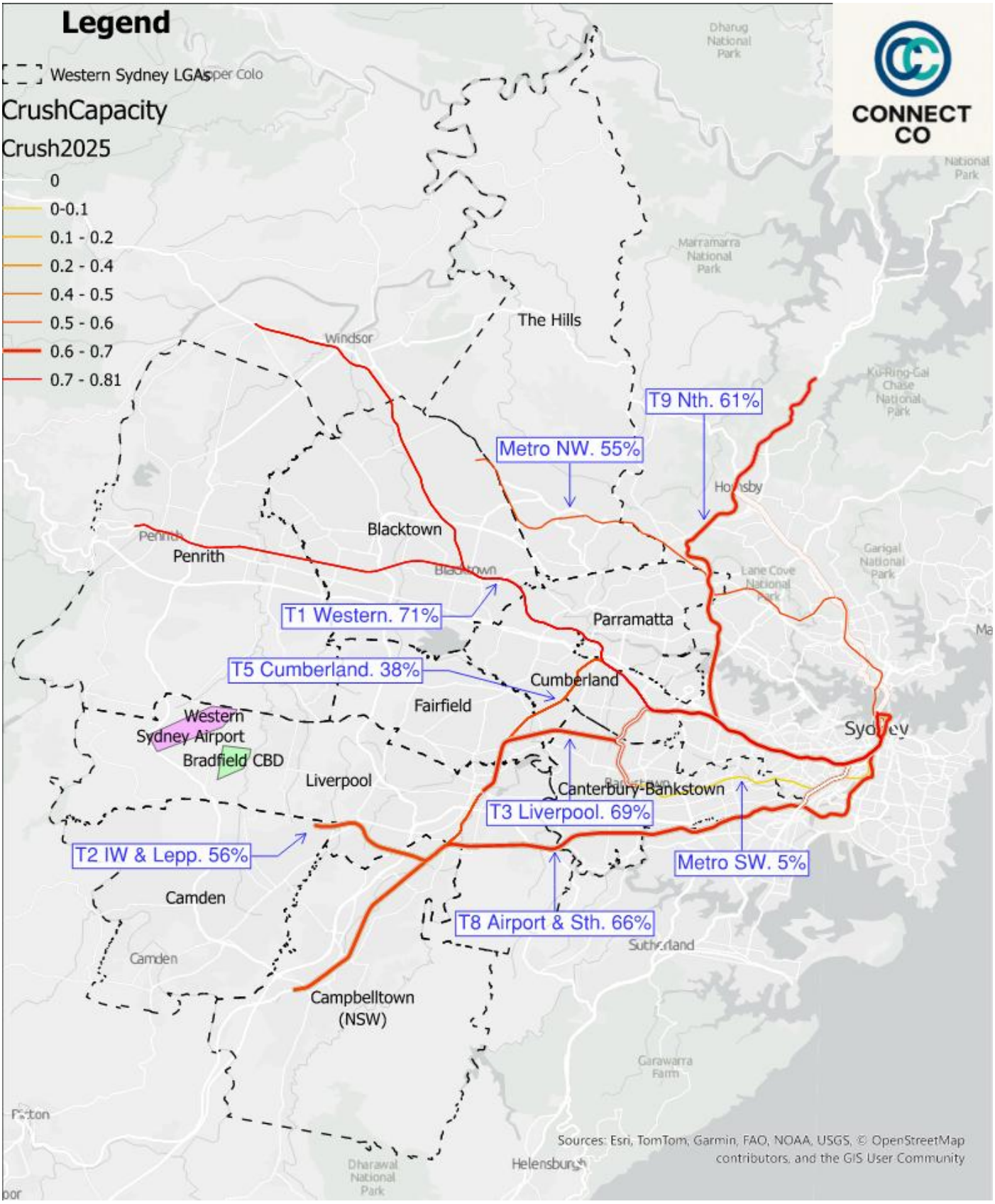

Figure 19 - Current Crush Capacity Utilisation - into Sydney CBD - Rail Lines Servicing Western Sydney Only.

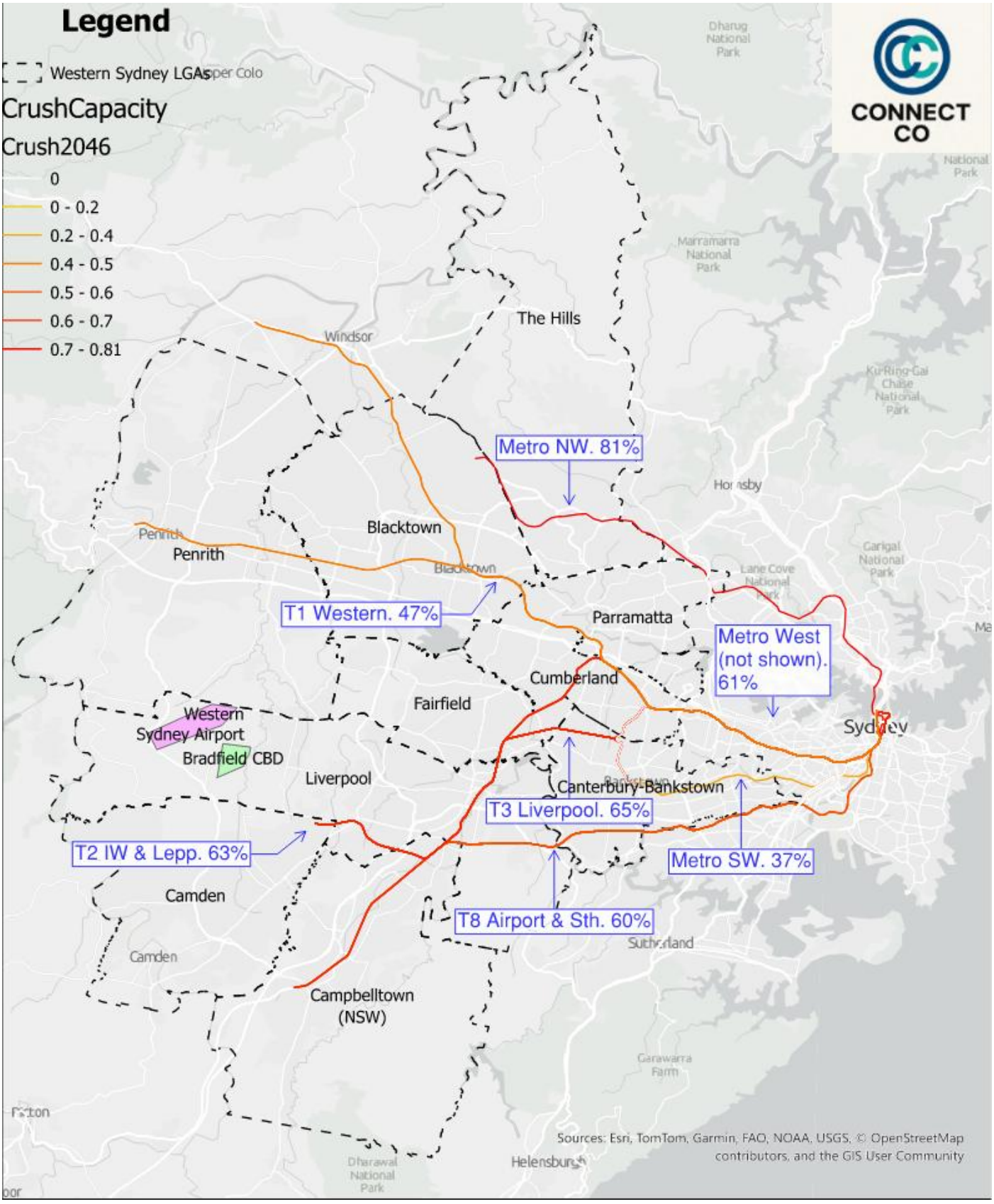

Figure 20 - 2046 Crush Capacity Utilisation - into Sydney CBD - Rail Lines Servicing Western Sydney Only.

Chapter 13: Gap Analysis

13.1 Overview

This chapter identifies the critical transport infrastructure gaps that could constrain housing and employment growth across the five strategic focus areas that we have identified in Western Sydney. These gaps highlight where current or planned transport networks are insufficient to support forecast population increases and housing development over the next 10–20 years. The findings inform recommendations for priority public transport investment to 2035 and beyond.

13.2 Approach

The gap analysis integrates:

- **Population and housing growth forecasts** from NSW Department of Planning and ABS data,
- **Infrastructure pipeline review** (Transport for NSW, Infrastructure Australia, IA Priority List)
- **Spatial accessibility mapping** of rail, metro, and major bus corridors, and
- **Employment precinct data** to identify alignment between job hubs and housing growth

The analysis assesses each priority growth area against transport capacity, coverage, and integration, focusing on both *infrastructure readiness* and *sequencing* relative to housing supply.

13.3 Spatial Gap Analysis by Priority Growth Area

(a) Western Sydney Aerotropolis and Surrounding Area

LGAs: Liverpool, Camden
Key Precincts: Leppington, Oran Park, Austral, Bringelly
Drivers: Western Sydney International (Nancy-Bird Walton) Airport, Bradfield City Centre, M12 Motorway, Western Sydney Airport Metro

Gaps Identified:

- While the Metro–Western Sydney Airport Line (St Marys to Bradfield) will provide a strong north–south spine, most surrounding suburbs (Oran Park, Catherine Field, Austral) remain outside walking catchments.
- Leppington Station is currently the only heavy rail terminus serving Camden, leaving large growth fronts disconnected.
- East–west connections between Leppington, Narellan, and Bradfield are limited to congested arterial roads (Bringelly Rd, The Northern Rd).

Implications:

- Residents of major new housing estates will remain car-dependent without high-capacity or frequent transit options.
- Delayed rail extension risks isolating early Aerotropolis housing from emerging employment centres.

Priority Response:

- Advance planning and business case for the **South West Rail Link Extension** (Leppington–Bradfield–Macarthur).
- Deliver **Fifteenth Avenue Smart Transit (FAST)** as a Bus Rapid Transit (BRT) corridor by 2030.
- Implement integrated **active transport** and **micro-mobility** routes to link Oran Park and Leppington with the Metro–Airport line.
- Add high-capacity **carparks**, carpools and on demand car/bus services connecting to WSA to provide residents of local areas more flexibility. Investigate subsidising of trips e.g. workers parking for free

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(b) North West Growth Area

LGAs: The Hills Shire, Blacktown
Key Precincts: Rouse Hill, Box Hill, Riverstone, Schofields, Marsden Park
Drivers: Sydney Metro Northwest, new residential estates, Norwest and Marsden Park employment hubs

Gaps Identified:

- Sydney Metro Northwest provides excellent connectivity for eastern sections (Rouse Hill, Kellyville) but does not reach western precincts such as Marsden Park and Riverstone.
- Orbital or cross-regional public transport between Blacktown, Schofields, and St Marys is limited.

- Bus services are infrequent and not aligned with peak-hour commuting patterns.

Implications:

- Rapid housing delivery (Blacktown +29% growth) is occurring in areas with limited public transport access.
- Local congestion on Richmond Road and Schofields Road is worsening due to lack of high-capacity alternatives.

Priority Response:

- Progress corridor protection and feasibility for the **Tallawong–St Marys Metro extension** to link the Northwest and Western corridors.
- Expand **Rapid Bus and BRT connections** between Marsden Park, Schofields, and St Marys as interim measure, improving connectivity and establishing travel demand ahead of proposed metro extension.
- Develop "**Town Centre Transit Hubs**" in Riverstone and Box Hill to enable first/last-mile connectivity.
- Explore road widening for key congested roads, Richmond Road and Schofields Road.

(c) South West Growth Area

LGAs: Camden, Liverpool
Key Precincts: Leppington, Oran Park, Catherine Field, parts of Liverpool
Drivers: South West Growth Area, M12 Motorway, future employment near Aerotropolis

Gaps Identified:

- Greenfield housing growth is outpacing infrastructure delivery; large new estates are more than 3 km from rail.
- The existing T2 Leppington Line operates near capacity during peaks, with no direct east–west linkage to Parramatta or Penrith.
- Limited pedestrian and cycling infrastructure between estates and stations restricts mode shift.

Implications:

- Car dependency reinforces congestion on Camden Valley Way and The Northern Road.
- Inefficient public transport undermines the “30-minute city” accessibility objective.

Priority Response:

- Stage the **South West Rail Link Extension** from Leppington to Bradfield by 2032, providing improved rail access for the Oran Park growth area and broader Camden LGA. To include commuter carparks and shared car services due to large catchment.
- Deliver high-frequency **orbital bus routes** linking Narellan–Leppington–Liverpool–Parramatta.
- Expand active transport corridors along Bringelly and Camden Valley Way.

(d) Parramatta and Central River City

LGAs: Parramatta, Cumberland, Canterbury–Bankstown
Key Precincts: Parramatta, Camellia, Rosehill, Parramatta Road Growth Corridor
Drivers: Sydney Metro West, Parramatta Light Rail (Stages 1 & 2), Westmead Health Precinct

Gaps Identified:

- Existing heavy rail lines (T1, T2) are at or near capacity during peaks, limiting scope for further housing intensification.
- East–west connectivity between Parramatta, Olympic Park, and Bankstown remains fragmented pending completion of Metro West and Light Rail Stage 2.
- Limited last-mile integration between new high-density precincts and transport hubs.

Implications:

- Housing and commercial growth along the Parramatta Road Corridor risks delay if mass transit capacity lags.
- Without reliable off-peak services, mode shift targets will not be met.

Priority Response:

- Prioritise funding for Parramatta Light Rail Stage 2 (Parramatta–Olympic Park).
- Expand metro access planning for Parramatta West and Camellia renewal areas.
- Develop active and micromobility networks between Westmead, Parramatta CBD, and Rosehill.

(e) Penrith and Western Parkland City

LGAs: Penrith, Blacktown (western edge)
Key Precincts: Penrith, St Marys, Werrington
Drivers: M4 Corridor, Western Sydney Airport, Nepean Health Precinct

Gaps Identified:

- Despite good mainline rail access (T1 Western Line), limited local connectivity to emerging job centres in St Marys and Bradfield.
- No direct rapid north-south transit links between Penrith, Liverpool and Campbelltown.
- Bus frequency and coverage remain inadequate for the growing western fringe suburbs.

Implications:

- Missed opportunity to leverage St Marys as a multimodal gateway to the Aerotropolis.
- Potential strain on M4 and Great Western Highway corridors due to continued car reliance.

Priority Response:

- Develop **Penrith–Bradfield Rapid Bus or Light Rail link** as part of the Western Sydney Rapid Transit program.
- Establish **Penrith Multimodal Interchange** integrating heavy rail, BRT, and active transport.
- Implement park-and-ride and transit-priority corridors for western growth precincts.

13.4 Common Themes Across Growth Areas

Category	Identified Gap	Strategic Response
East–West Connectivity	Limited cross-regional public transport between Liverpool, Parramatta, and Penrith	Prioritise orbital bus/BRT corridors
First/Last Mile Access	Incomplete walking and cycling infrastructure to transit	Fund active transport integration
Sequencing Mismatch	Housing delivery ahead of transport capacity	Align infrastructure staging with rezoning approvals
Service Frequency	Low off-peak and cross-regional services	Adopt minimum frequency standards and all-day service models
Equity	Peripheral LGAs underserved	Prioritise accessibility upgrades and park-and-ride hubs

Chapter 14: Recommendations

As demonstrated by our data analysis on the performance of the existing and future rail network in Chapter 12, the additions of the new Metro West Line and Metro South West extension provide ample additional city-bound capacity to the network. This suggests the focus for government investment in the next 10-20 years should be on other priorities before investing in additional city-bound capacity.

Our proposed priorities are laid out below and therefore broadly focus on increasing patronage to the existing network via methods such as improving first / last mile connections and improving connections between emerging commercial and residential hubs within Western Sydney.

14.1 Priority Transport Investments (2025–2035)

Deliver the South West Rail Link Extension (Leppington–Bradfield–Macarthur)

- Establish full business case and funding pathway by 2026.
- Integrate with the Western Sydney Airport Metro for continuous high-capacity connectivity through the Aerotropolis.

Complete the Western Sydney Rapid Bus Network

- Deliver **Fifteenth Avenue Smart Transit (FAST)** as the first corridor (Liverpool–Bradfield).
- Expand with east–west orbital services linking Penrith–Liverpool–Campbelltown–Parramatta.

Advance Future Metro Corridors

- Fund corridor protection for **Tallawong–St Marys** (Northwest–Western Metro) and **Bradfield–Macarthur** (Aerotropolis South Extension).
- Investigate Parramatta–Liverpool–Bradfield metro concept to support cross-city mobility.

Enhance Integration of Light Rail and Active Transport

- Fast-track **Parramatta Light Rail Stage 2** and integrate with ferry, metro, and bus networks.
- Deliver continuous pedestrian and cycling corridors connecting key transport interchanges.

Plan for Polycentric Transit-Oriented Development (TOD)

- Co-locate higher-density housing, health, education, and retail within 800 m of high-capacity stations.
- Incentivise mixed-use development at Liverpool, Oran Park, Marsden Park, and St Marys.

14.2 Improving First and Last Mile Connections

The "first and last mile" problem—the distance between a traveller's origin/destination and the nearest transit stop—is a major barrier to suburban public transport use.

- Active Transport Networks: Create safe, direct, and continuous walking paths and protected bicycle lanes that connect residential areas to bus stops, transit stations, local shops, and employment centres.
    - Focus on features like ample street lighting, safe crossings, and reducing travel distances.
- Micromobility Integration: Encourage and integrate shared e-bikes and e-scooters near transit hubs and within suburban centres to cover the first/last mile conveniently.
- Secure Parking: Provide secure, covered bicycle parking at major bus and train interchange points to facilitate bike-and-ride.

14.3 Integrating Transport and Land Use Planning

Strategic urban planning can reduce the need to travel long distances, making suburbs inherently more accessible.

- Concentrate Density and Mixed-Use Development: Encourage higher-density housing and mixed-use zoning in concentrated "micro-pockets" or activity centres around existing transport hubs, major roads, and local service centres. This puts jobs, shops, and services within walking or cycling distance for more residents.
- The "15-Minute Neighbourhood" Concept: Plan for suburban centres to provide all daily necessities (groceries, schools, parks, local employment) within a 15 to 20-minute walk or cycle, decreasing reliance on long car commutes.
- Reduce Parking Requirements: Lower or eliminate minimum parking requirements for new developments, especially those near transit, to discourage car ownership and free up space for more productive uses.

14.4 Governance and Delivery

- **Western Sydney Transport Coordination Taskforce:**
  Establish an interagency body (IA, TfNSW, local councils) to oversee sequencing and delivery.
- **Integrated Planning Framework:**
  Require alignment between housing approvals, rezoning, and committed transport funding.

- **Dynamic Infrastructure Monitoring:**
  Develop a spatial dashboard tracking population, housing completions, and transport access in real time.

14.5 Social and Environmental Objectives

- Ensure all major transport investments incorporate **affordable housing and employment access objectives**.
- Apply **net-zero emissions** design standards for all new metro, bus, and rail assets.
- Prioritise equity-focused accessibility upgrades within the South West and Western Parkland growth areas (particularly **Camden**, **Penrith**, and **Liverpool** LGAs), where transport access remains limited for lower-income communities.

14.6 Implementation Timeline (Indicative)

Horizon	Focus	Key Deliverables
2025-2030	Deliver committed metro/light rail; expand rapid bus pilot programs; implement shared cars and on demand services	Sydney Metro West; Parramatta Light Rail Stage 1; FAST Stage 1; Airport Metro
2030-2035	Extend metro and BRT networks; commence South West Rail Link Extension	Metro West extension; full FAST network; Leppington–Bradfield–Macarthur corridor works
2035-2045	Realise full North–South connectivity; integrate TOD hubs	Complete North–South Rail Link; deliver transit-oriented precincts at Bradfield, Liverpool, Parramatta, Penrith

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14.7 Conclusion

Closing the infrastructure gap is essential to realising Western Sydney's housing and economic potential. A coordinated and staged investment program—combining metro extensions, rapid bus corridors, and active transport integration—will ensure that the region evolves into a connected, sustainable, and liveable polycentric metropolis over the next two decades.