

An aerial photograph of a suburban residential area, showing a dense cluster of houses with red and blue roofs, interspersed with green lawns and trees. A yellow diagonal graphic element runs from the bottom left towards the top right, partially obscuring the lower part of the image.

Western City Housing Supply Analysis

2021 Update

Walker Corporation

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Document Control

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Executive Summary

BACKGROUND

Atlas Urban Economics (Atlas) are engaged by Walker Corporation (Walker) to prepare a Housing Supply Analysis (the Study) of the Western City District to understand the likelihood of planned supply meeting projected dwelling demand by 2041.

Greater Sydney's Western City District was nominated a long-term housing target of 572,000 dwellings by 2036 in the Western City District Plan. These targets were informed by then dwelling projections by NSW Government.

The most recent population projections prepared by DPIE were released in 2019. A set of revised projections which reflect the impact of COVID-19 on population growth are yet to be made available. To reflect the impacts of the COVID-19 pandemic on population growth, DPIEs 'Low Scenario' population projections (2019) have been used. On this basis, it is estimated that the Western City would require some **658,000 dwellings by 2041**.

KEY FINDINGS

This Study takes a comprehensive approach to firstly identify the number of existing dwellings in the Western City, the quantum of housing planned and then how much of this planned supply can be delivered. Key findings are as follows:

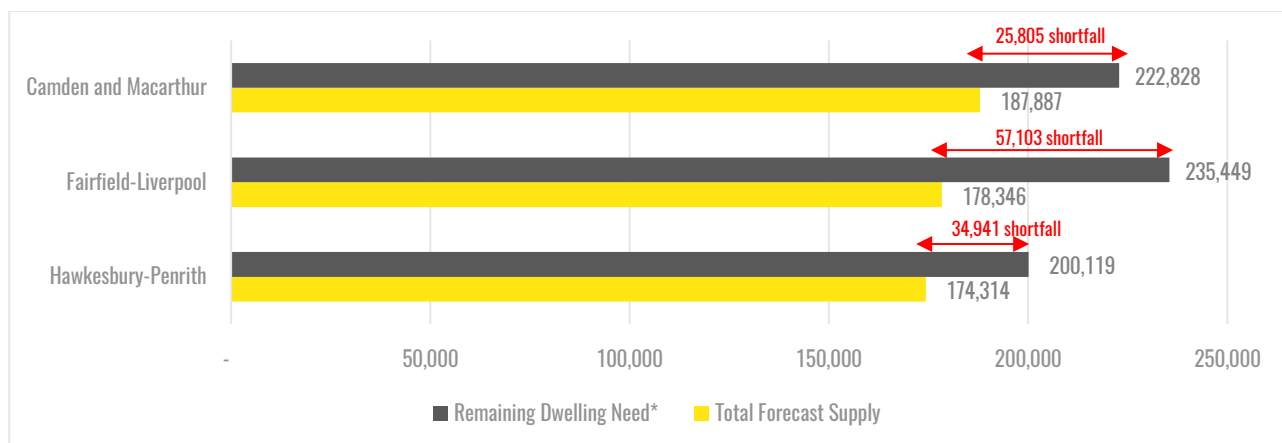
- Approximately 40,600 dwellings were completed post-census (2016). Added to the count of dwellings at census (2016), it is estimated the Western City has an existing supply of 393,000 dwellings (at Q4 2020).
- By deducting existing dwellings (393,000) from the 658,000 dwellings required by 2041 under DPIE's Low Scenario, there is Remaining Dwelling Need of 265,000 dwellings. This reflects an average annual dwelling supply of 12,619 required over the next 21 years to 2041.
- There are some 68 precincts which have remaining planned supply for 336,000 dwellings across the Western City. ***If all supply eventuates into delivery***, this planned supply could meet Remaining Dwelling Need of 265,000 dwellings.
- The Study's forecast of dwelling supply identifies just over 147,000 of these 336,000 dwellings could be delivered by 2041, indicating a large shortfall (118,000 dwellings) from the required 265,000 dwellings. This is due to a range of reasons, including lack of services infrastructure, lot and ownership fragmentation, etc.

SUFFICIENCY OF HOUSING CAPACITY IN THE WESTERN CITY

The Study forecasts there will be a **shortfall of just over 118,000 dwellings across the Western City by 2041**. Whilst there is sufficient planned supply to meet projected demand for the Western City, when considering the impediments and constraints to delivery, the Study finds only some of this supply (147,000 dwellings) will be delivered by 2041.

Housing demand is not contained in a vacuum – unmet housing demand in one LGA will attempt to be met in comparable markets. The eight LGAs within the District are grouped into three housing market areas based on their comparable locational and market characteristics.

Figure ES. 1: Housing Demand and Supply Assessment (2021-2041), Western City District



*Based on DPIE's Low Scenario population projections
Source: Atlas

KEY MATTERS FOR CONSIDERATION AND RECOMMENDATIONS

Dwelling forecasts identify a shortfall of some **118,000 dwellings** across the Western City by 2041. We recommend alternate growth strategies be pursued.

- **Prioritise and augment precinct planning**
The Study has observed the misalignment between planned housing supply and actual housing supply, evidenced by precincts where land is identified for growth but yet to be meaningfully planned so it can be developed.
- **Work with developers with significant landholdings to expedite planning and delivery of housing**
Fragmented land ownership is identified as a major driver behind poor take-up of development opportunities across the District's Growth Areas. The release of more housing across through the Precinct Acceleration Protocol (PAP) process will assist in addressing the forecasted undersupply of housing. Large sites held in majority ownership will be critical in facilitating new supply.
- **Bring forward release of Investigation Areas**
Given the large quantum of theoretical capacity unlikely to be delivered for a number of reasons including the time taken for rezonings to occur and lack of services infrastructure, it is important that opportunities to unlock further supply are investigated, and where found to be viable, prioritised.

Areas for Focus

There are several precincts across the Western City which could be prioritised for development (through the PAP protocols) given they are held in single or majority ownership.

Table ES.1 outlines several key precincts which, subject to detailed planning, could fast-track the delivery of new housing.

Table ES.1: Housing Precincts in Majority Ownership

Precinct	LGA	Planned Supply	Forecast Take-Up (2041)	Description
WSU Werrington Precinct	Penrith	5,000	4,600	Large precinct being targeted for urban renewal. Held in majority ownership by two landowners. Potential for precinct planning to be fast-tracked subject to alignment with planning for future rail.
Mt Vernon/Horsley Park Urban Investigation Area	Fairfield	5,000	-	Large rural precinct identified for future urban development. Large portion of the precinct is held in single ownership. Potential to expedite precinct planning.
Orchard Hills South	Penrith	25,000	1,400	Significant precinct currently zoned for rural purposes. Large portion of is government-owned which could expedite precinct planning.
North Appin/ West Appin	Wollondilly	20,000	-	Two significant precincts currently zoned for rural land uses held in majority ownership by three landowners.

Source: Atlas

Realignment of Housing Targets with Supply Capacity

Compared against the number of dwellings required by 2041 under DPIE's Low Scenario population projections, the Study forecasts a supply shortfall in the order of **118,000 dwellings**. When compared against housing targets in the District Plan, the Study forecasts a shortfall of some **67,000 dwellings by 2036**. Both these shortfalls result from a 'No Intervention' scenario.

Should population growth exceed that expected that in DPIE's Low Scenario population projections, the supply shortfall (118,000 dwellings) concluded in this Study would could be further exacerbated.

To avoid perpetuating the chronic housing shortfall and unsustainable price escalation, a review of housing targets (having regard to 'deliverable supply', fast tracked land release planning and forward funding of essential infrastructure will be required to ensure the Western City is assisted in overcoming the expected housing shortfall. These are considered to be the essential 'next steps' following completion of this Study.

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1. Introduction

1.1 Background

In Q1 2020, Atlas Urban Economics (Atlas) were commissioned by Walker Corporation (Walker) to prepare a Housing Supply Analysis of the Western City District to investigate the capacity of the District to accommodate new housing to 2041. The findings of the supply analysis were compared against housing demand projections (carried out by the NSW Department of Planning, Infrastructure and Environment) to assess the likelihood of an over/ undersupply of housing to 2041.

The Study concluded:

- A need for some 319,000 dwellings across the Western City to be delivered by 2041 (after considering existing supply).
- Around 152,000 dwellings would likely be delivered in the decades to 2041.
- A corresponding shortfall in dwelling supply of just over 167,000 dwellings.

The significant shortfall was influenced by a range of factors, notably a lack of services infrastructure, low and ownership fragmentation and market and development feasibility considerations. To address this significant shortfall, the Study recommended a range of alternative growth strategies be pursued, including prioritising and augmenting precinct planning, bringing forward the release of Investigation Areas and ensuring collaboration between State Government and developers/ landowners with significant landholdings capable of contributing to housing supply.

A significant amount of change has occurred since completion of the Study in Q1 2020. Precinct planning for the Western Sydney Aerotropolis is well advanced with the four initial precincts being rezoned in late-2020. Sydney Water have released their recent Growth Servicing Plan outlining their infrastructure delivery strategy for the 2020-2025 period. Most notably, the outbreak of COVID-19 across Australia had significant ramifications for housing demand and supply.

To reflect these various changes, Atlas has been engaged by Walker to carry out an update of the Housing Supply Analysis of the Western City District.

1.2 Scope and Approach

The core objective of this Update is to review the findings of the Housing Supply Analysis in the context of the current economic and market climate. The Update will also consider the impact of the COVID-19 pandemic on projected population growth across Greater Sydney and the Western City. The updated findings will be important to help understand if planned housing capacity is likely to meet dwelling demand in the Western City in a post-COVID world.

In order to fulfil the requirements of the brief, the following tasks are undertaken:

- **Economic Context**
 - Analyse key State economic indicators, notably employment, housing approvals/completions and lending activity.
 - Review the variety of COVID-19 fiscal stimulus packages (Commonwealth and State) and their impact on residential market activity.
 - Review the most recent population and migration data at the national and State level.
 - Analyse recent population projections prepared by the Commonwealth's Centre for Population and reconcile against the NSW population, household and implied dwelling projections (NSW DPIE).
- **Demand for Housing**
 - Review recent market activity to understand the impact of COVID-19 on demand for housing.
- **Supply of Housing**
 - Review most recent dwelling completions data issued by the DPIE, including greenfield housing completions.
 - Identify economic and market trends that influence future population and housing need in the Western City District.

- Where necessary, carry out an update of Planning Capacity for new housing across the Western City in designated greenfield precincts and urban renewal areas based on recently released or updated precinct planning.
- Review the recently released Sydney Water Growth Servicing Plan 2020-2025 to understand its implications for housing development timeframes.
- **Sufficiency of Housing Capacity**
 - Assess the quantum of Planning Capacity which could be delivered by 2041.
 - Assess the likelihood of Market Capacity meeting projected dwelling demand for the Western City District to 2041.

1.3 Assumptions and Limitations

In addition to those specifically referenced within this Study, the following assumptions and limitations are highlighted:

- This Report is an Update to the Housing Supply Analysis of the Western City District carried out in April 2020 (the April 2020 Report). The analysis, findings and recommendations outlined in this Update should be read in the conjunction with the April 2020 Report.
- Forecasts of development take-up are predicated on assumptions regarding the availability and delivery of services and lead-in infrastructure. Timeframes for the delivery of services infrastructure are predicated on infrastructure servicing plans released by Sydney Water and energy providers. The Study recognises that these timeframes can be subject to and brought forward through negotiations between developers/landowners and State Government.
- The progress and take-up of development is dependent on myriad factors, including whether development is a commercial proposition and if landowner objectives are aligned. In some instances, even if development is permissible and feasible to undertake, it may not occur as landowner objectives do not align with development. It is not the intention of the Study to predict landowner objectives, rather to interpret market activity and identify the likelihood of development occurring based on market need and observations of competitive markets.
- Take-up forecasts are undertaken on an aggregate basis are not intended to a site-by-site assessment.

Notwithstanding the assumptions and limitations of the Study, the approach is considered appropriate for the purpose of the Study, which is to assess the sufficiency of housing capacity in the Western City District to meet projected housing demand.

2. Strategic Context

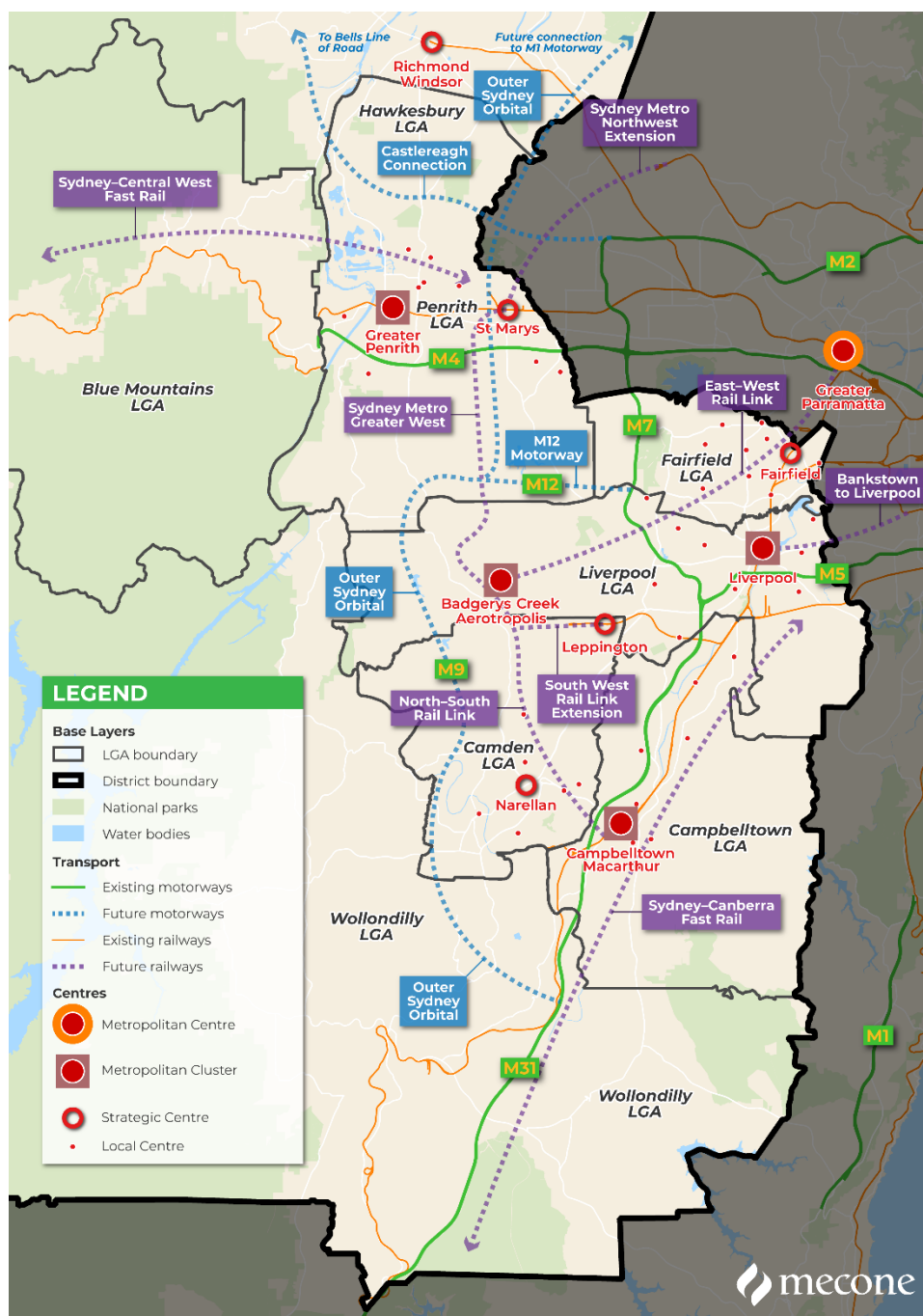
2.1 Location

The Western City District (interchangeably referred to as 'the District' and the 'Western City') is the largest planning district in Greater Sydney in terms of land and population mass, covering eight LGAs including Blue Mountains, Camden, Campbelltown, Fairfield, Hawkesbury, Liverpool, Penrith and Wollondilly. The District is supported by strategic centres and a network of local centres. The major centres of Liverpool, Campbelltown, Penrith and Richmond-Windsor are located here.

Critically, the future Western Sydney Airport and Western Sydney Aerotropolis fall within the Western City and are the key catalysts for the development of the Western Parkland City as envisaged in the Greater Sydney Region Plan (GSC, 2018a).

Figure 2.1 depicts the formal boundaries of the Western City District and the eight composite LGAs.

Figure 2.1: Context Map



Source: Mecone

2.2 Strategic Planning

Western City District Plan

The primary housing objectives for the Western City District are outlined in the Western City District Plan, referred to as the 'District Plan' (GSC, 2018b). The District Plan outlines a short and long-term housing targets for the Western City District in order to meet projected population growth. These include:

- Short-term Target (2016-2021): 39,850 additional dwellings (average of 7,970* dwellings per annum).
- Long-term Target (2016-2036): 184,500 additional dwellings (average of 9,225* dwellings per annum).

*The average annual dwellings (7,970 and 9,225) required were calculated prior to the release of census 2016 data, wherein the existing number of dwellings at 2016 was over-estimated (by some 32,000 dwellings). If calculated against the existing dwelling count at census (356,500 dwellings), 215,500 additional dwellings are required to meet the long-term target to 2036 (average of 10,800 dwellings per annum).

Medium-term dwelling targets are determined by local Councils through their Local Strategic Planning Statements (LSPS) and Local Housing Strategies (LHS).

The vast majority of future housing envisaged will be delivered across the District's various greenfield Growth and Investigation Areas. Urban renewal and infill development will also play an important component through the District's Planned Precincts and Urban Renewal Corridors. These areas will be detailed in greater detail in Chapter 4.

Local Strategic Planning Statements and Local Housing Strategies

Local Strategic Planning Statements (LSPS) were introduced in mid-2019 as a statutory document which outlines a 20-year vision for land use within a local area, linking the visions, objectives and priorities of the District Plans with Local Environment Plans. All NSW councils are required to prepare a LSPS with the majority of councils across Greater Sydney currently in the process of preparing or finalising their LSPS.

One of the key requirements of the LSPS process is to determine medium-term (6-10 years) and long-term (20-year) housing targets for the LGA. These targets are to be informed through a detailed Local Housing Strategy (LHS) which examines the capacity of the planning framework to accommodate additional housing.

Of the eight local councils within the Western City District, all have publicly exhibited their local housing strategies within the exception of Fairfield. It is noted that the Wollondilly LHS does not provide medium or long-term housing targets for the Wollondilly LGA.

Table 2.1 extracts the medium and long-term housing targets for those councils which have released their LHS.

Table 2.1: Medium and Long-Term Housing Targets, Available Local Housing Strategies

LGA	6-10 Year Target	20 Year Target
Blue Mountains	550	Undetermined
Camden	10,000-12,500	Undetermined
Campbelltown	15,000 to 18,500	40,000
Hawkesbury	2,450	2,450
Liverpool	8,500 to 12,000	20,250 to 27,250
Penrith	6,100 to 7,800	10,800 to 16,600
Wollondilly	Undetermined	Undetermined

Source: Various Local Housing Strategies (see Reference List)

2.3 Historical Population and Dwelling Growth

Population

As at 2020, the Western City District was the most populated district within Greater Sydney and comprised an Estimated Resident Population (ERP) of just over 1,100,000 residents. This equates to around one fifth of Greater Sydney's population.

Most of the District's residents live within the more urbanised LGAs of Liverpool (20%), Penrith (19.0%), Fairfield (18%) and Campbelltown (15%). The peri-urban areas of Blue Mountains, Camden, Hawkesbury and Wollondilly collectively account for just over a quarter the District's resident population. This is expected to change as more areas become further urbanised (i.e. Camden, Wollondilly).

Since 2013, the District has recorded average annual population growth of 2.0% which is greater than that of the Greater Sydney average of 1.7%. Camden has recorded significant population growth over this period (average of over 7.7% per annum) with Liverpool (2.4%), Wollondilly (2.2%) and Penrith (1.8%) also experiencing strong population growth.

Table 2.2 shows the ERP of the Western City District over the 2013-2020 period.

Table 2.2: Estimated Resident Population (2013-2020), Western City District

Area	2013	2014	2015	2016	2017	2018	2019	2020	Change (2013-20)	Avg. Annual
Blue Mountains	78,705	78,867	78,889	78,835	79,012	79,260	79,108	79,195	490	0.1%
Camden	64,093	68,642	74,100	80,264	87,146	94,159	101,420	107,806	43,713	7.7%
Campbelltown	154,348	156,292	158,589	161,566	164,649	168,139	170,912	174,078	19,730	1.7%
Fairfield	200,098	201,788	203,490	205,675	208,636	210,612	211,645	210,825	10,727	0.7%
Hawkesbury	65,145	65,503	65,890	66,346	66,669	67,083	67,288	67,749	2,604	0.6%
Liverpool	196,122	200,725	206,205	211,983	217,788	223,304	227,545	231,296	35,174	2.4%
Penrith	190,527	193,765	197,678	201,597	205,220	209,210	212,944	216,282	25,755	1.8%
Wollondilly	46,399	47,445	48,562	49,854	51,036	52,230	53,143	54,005	7,606	2.2%
Western City	995,437	1,013,027	1,033,403	1,056,120	1,080,156	1,103,997	1,124,014	1,141,236	145,799	2.0%
Greater Sydney	4,760,881	4,847,482	4,938,039	5,024,923	5,136,919	5,225,098	5,310,099	5,367,206	606,325	1.7%

Source: ABS (compiled by .id)

Dwellings

The ABS Census (conducted in August 2016) is the most recent formal count of dwellings within the District. The 2016 Census identified a total of just over 356,000 private dwellings in the District, following growth of almost 30,000 dwellings over 2011-2016 (averaging at 5,900 dwellings per annum). Non-private dwellings as defined by the ABS (hotels, nursing homes, corrective institutions, hospitals, etc) account for less than 1% of total dwellings in the Western City. Non-private dwellings are not considered in this Study given their demand and supply are underpinned by a distinctly different set of drivers to private dwellings.

As at 2016, detached housing was by far the most common housing typology across the District, accounting for some 80% of all private dwellings. Medium-density typologies (townhouses, villas, semi-detached houses) were the second most prevalent form of housing at 14%, whilst apartments and units comprised just 5% of total dwellings.

Of the new dwellings produced across the District over 2011-2016, the overwhelming majority were detached houses which accounted for 71% of all new dwellings. The majority of these were produced in Camden, Liverpool and Penrith where new land releases were taken-up. Medium-density and high-density dwellings were produced in similar quantities, accounting for 13% and 11% of new supply respectively.

Table 2.3 shows the growth in private dwellings across the Western City District over 2006-2016 by dwelling typology.

Table 2.3: Private Dwelling Growth (2006-2016), Western City District LGAs

LGA	2006						2011						2016					
	Separate House	Medium-Density	High-Density	Other	Not Stated	Total	Separate House	Medium-Density	High-Density	Other	Not Stated	Total	Separate House	Medium-Density	High-Density	Other	Not Stated	Total
Blue Mountains	30,536	1,916	176	101	3	32,732	30,550	2,455	101	122	26	33,254	31,369	2,350	200	140	123	34,182
Camden	15,881	932	-	152	4	16,969	17,590	1,508	34	178	29	19,339	24,132	1,830	37	117	74	26,190
Campbelltown	40,115	9,554	437	81	29	50,216	40,799	9,416	893	156	21	51,285	42,657	10,952	1,419	126	134	55,288
Hawkesbury	19,554	2,807	45	491	6	22,903	19,953	2,928	134	328	13	23,356	20,411	3,069	114	266	196	24,056
Fairfield	44,660	8,963	4,834	233	33	58,723	44,300	11,005	4,651	181	56	60,193	44,654	11,430	5,741	617	291	62,733
Liverpool	42,070	7,828	4,935	211	21	55,065	43,448	8,884	6,348	103	52	58,835	48,531	9,091	7,692	54	135	65,503
Penrith	52,204	7,488	2,057	385	27	62,161	52,096	9,598	2,635	309	106	64,744	56,813	10,823	2,803	340	255	71,034
Wollondilly	13,624	507	6	148	3	14,288	14,538	769	3	151	3	15,464	15,657	871	6	155	58	16,747
Western City	258,644	39,995	12,490	1,802	126	313,057	263,274	46,563	14,799	1,528	306	326,470	284,224	50,416	18,012	1,815	1,266	355,733

Source: ABS (compiled by .id)

A number of observations can be drawn from the analysis of private dwelling composition in **Table 2.3**:

- Almost 43,000 dwellings have been delivered across the Western City District over the 2006-2016 period at an average annual growth rate of 1.3% (circa 4,300 dwellings per annum).
- Camden recorded the greatest rate of dwelling growth at 4.4% per annum (on average) over 2006-2016, with Wollondilly recording the second fastest rate of growth at 1.6% per annum.
- The vast majority of growth has occurred in the Liverpool, Camden and Penrith LGAs which accounted for almost 70% of all new dwellings over the decade to 2016.
- Unsurprisingly, the peri-urban LGAs of Blue Mountains and Hawkesbury accounted for a very small portion of overall dwelling growth in the Western City at just over 6%.
- In the Fairfield, Penrith and Blue Mountains LGAs, medium-density typologies accounted for over 30% of all new dwellings over 2006-2016.
- Apartments accounted for over 20% of all new dwellings over 2006-2016 in the Liverpool, Fairfield and Campbelltown LGAs.

The next Chapter provides context on key economic drivers influencing the housing market, as well as the recent Commonwealth and NSW Government population projections.

3. Economic Context

3.1 Economic Overview








At the time of writing, the fallout of the COVID-19-induced recession is still being understood. The true economic ramifications of the recession are yet to fully play out and are intrinsically linked to the vaccination rollout internationally and domestically and the timeframes for the reopening on international borders. A clearer 'picture' of the economy will be observable following over the coming 6-9 months, particularly as the economy responds to the cessation of several key fiscal stimulus packages in March 2021.

The Australian economy appears to have entered into a recovery phase as at Q2 2021 following the historic falls in economic output and employment during 2020 as a result of the COVID-19-induced recession. This has first and foremost been driven by historically accommodating fiscal and monetary policy, principally the Commonwealth Government's JobKeeper and JobSeeker financial assistance packages and the historically low cash rate of 0.1% set by the Reserve Bank of Australia (RBA).

Most economic indicators are showing positive signals. Strong growth over the December 2020 quarter has resulted in the national economy being down just 1.1% compared to pre-COVID-19 levels. Household spending is rising, and unemployment is falling. Notably, house prices in Sydney have returned to record highs as low interest rates and government incentives such as the Commonwealth's HomeBuilder scheme fuel purchaser activity.

Table 3.1 summarises some of the key economic indicators influencing housing demand as at Q1 2021.

Table 3.1: Key Economic Indicators

Indicator	Comment
 National GDP to Grow by 3.5%	The Australian economy is expected to experience growth in GDP of 3.5% in 2021 (IMF, 2021). Australian GDP rose by 3.1% over the December 2020 quarter, with GDP down just 1.1% over the preceding 12-months.
 Cash Rate at 0.1%	The Reserve Bank of Australia (RBA) has held the cash rate into 2021 and has continued with quantitative easing supply of money to assist debt and is unlikely to cut the cash rate below 0.1%. Recent commentary on the potential need for an increase in the cash rate to mitigate potential inflation have been repudiated by the RBA who do not expect an increase to the cash rate until 2024.
 Population Growth Slows to 0.9%	The Australian population grew by just over 220,500 in the year to June 2020, representing growth of 0.9%. Over the quarter to September 2020, the population declined for the first time since WW1. Further declines are expected over 2021 should international travel restrictions be maintained.
 Unemployment at 5.5%	Unemployment has fallen to 5.5% in April 2021 following its peak of 7.5% in July 2020. There are now more people in employment compared to prior to the initial outbreak of COVID-19 across Australia in Q1 2020.
 Dwelling Approvals Surging	Dwelling approvals across Australia reached 20-year highs in October 2020, illustrating the strong demand for residential property even in the midst of the COVID-19 pandemic. Approvals in NSW pulled back markedly in January 2021, particularly for higher-density housing typologies.
 Median House Prices at Record Highs	House prices have surged across Greater Sydney with the median house price of over \$1,100,000 higher than the peaks recorded in 2017. Further price growth is anticipated over the course of 2021 as accommodative monetary policy remains in place.
 Wages Rise by 1.5%	Wage growth across Australia was recorded at 1.5% over the 12-months to March 2021, with a 1.5% rise in the public sector and 1.4% rise in the private sector.

Source:

It is important to recognise that the demand for housing in this Study is considered over a long-term horizon (i.e. the next 25 years). With this in mind, the long-term fundamentals underpinning housing demand in Greater Sydney are strong:

- Strong projected long-term population growth, particularly in South-West Sydney;
- Historically low interest rates, which are likely to remain low over the short to medium-term;
- Significant level of investment in transport infrastructure;
- Historical undersupply resulting in a major undersupply of housing and major pent-up demand.

These core economic fundamentals suggest the long-term demand for housing in Greater Sydney will remain strong.

3.2 Impact of COVID-19 Stimulus Packages

Following the outbreak of COVID-19 across Australia in Q1 2020, both the NSW and Federal Governments have implemented a broad range of economic stimulus and household/business support packages aimed at limiting the economic and social damage caused by restriction measures. JobKeeper and JobSeeker proved critical to supporting household consumption over this period until their cessation in April 2021.

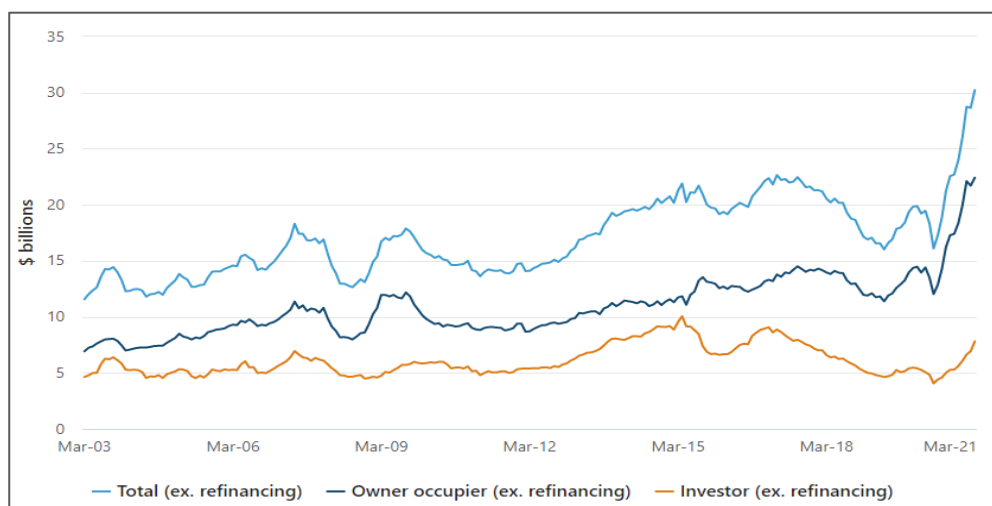
Many of these stimulus packages have had a significant impact on Greater Sydney's housing market. These included:

- **HomeBuilder Grant:** The Commonwealth Government's HomeBuilder program provided eligible home Owner Occupiers (including first home buyers) with a grant of \$25,000 or \$15,000 to build a new home or substantially renovate an existing one.
- **First Home Buyer Assistance Scheme:** NSW's First Home Buyer Assistance Scheme (FHBAS) provides a concessional rate or exemption for transfer (stamp) duties for eligible first home buyers for existing or new dwellings.
- **First Home Owner (New Homes) Grant:** NSW's First Home Owner Grant provides a \$10,000 grant for eligible first home buyers in purchases of new dwellings up to \$600,000 or dwelling and land packages of up to \$750,000.

In unison with historically low retail interest rates driven by the RBA's 0.1% cash rate, these stimulus packages have driven a surge in housing activity as represented by marked growth in new loan commitments and dwelling approvals. New loan commitments rose by 55% over the year to March 2021 with dwelling approvals also reaching 20-year highs.

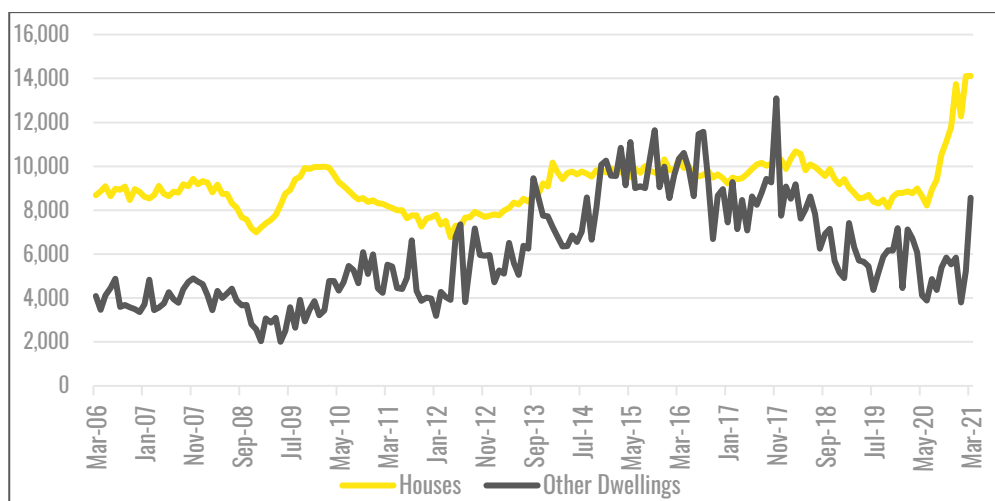
Figure 3.1 and Figure 3.2 illustrate the growth in new loan commitments and dwelling approvals across Australia to Q1 2021.

Figure 3.1: New Loan Commitments (2003-2021), Australia



Source: RBA

Figure 3.2: Dwelling Approvals (2006-2020), Australia



Source: ABS

3.3 Population and Migration

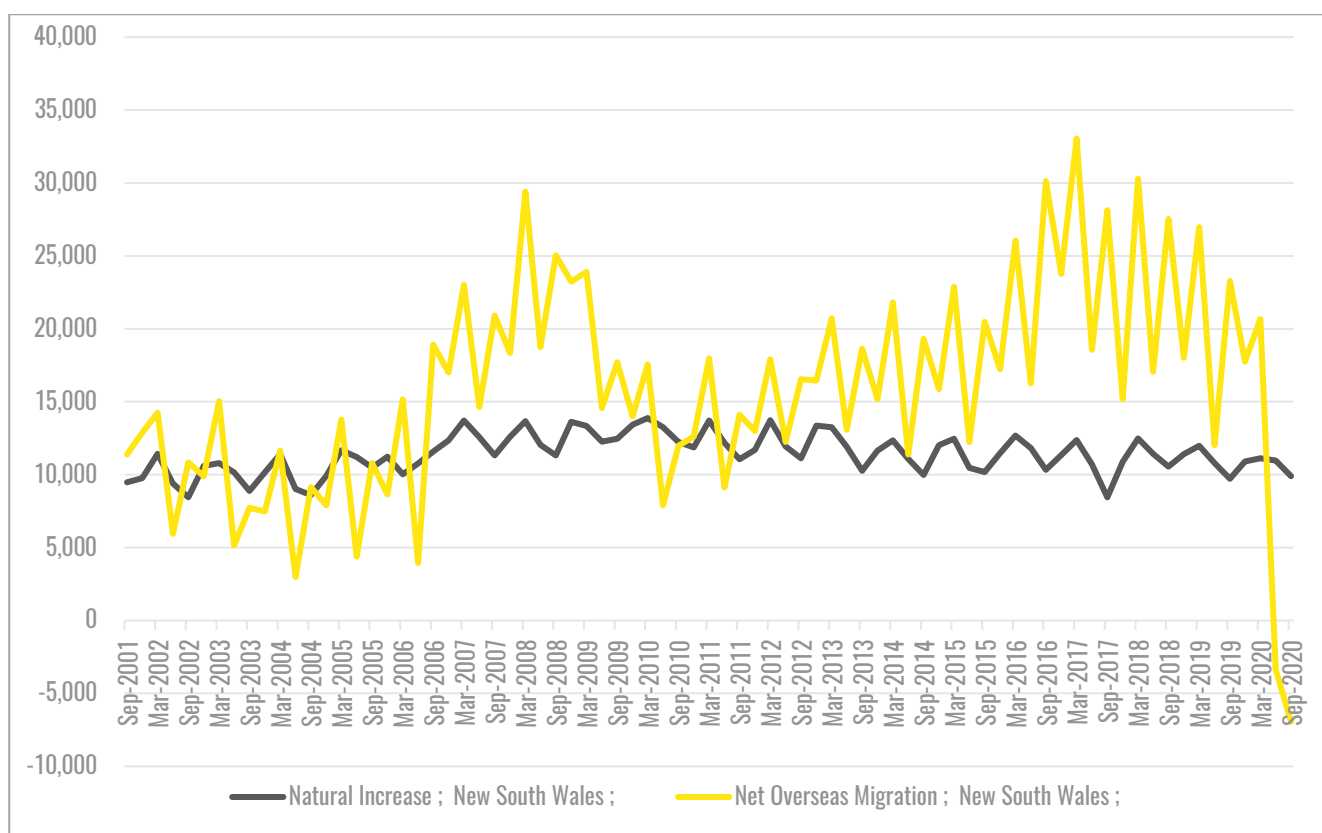
Over the past 20 years, Australia has averaged annual population growth in the order of 1.5%. In NSW, average population over this period has been in the order of 1.2%.

Following the closure of international borders in Q1 2020, population growth across NSW and Australia has softened markedly. In the 12-months to the September 2020, the Australian population grew by approximately 0.9% (220,500 residents) though a decline of 4,200 residents (-0.02%) was recorded in the September quarter. This represented the decline in Australia's population since World War I and was driven by a large uptick in overseas migration (i.e. migrants leaving Australia for their home country).

In NSW, the population grew by some 50,600 residents (0.6%) in the 12-months to September 2020 and also recorded a decline in the September quarter of -0.01%. This was driven by an increase in outbound international and interstate migration.

Figure 3.3 shows the components of population growth across NSW over the past 20 years, noting the significant declines in both natural increase and net overseas migrations since Q1 2020.

Figure 3.3: Components of Population Growth (2001-2020), NSW



Source: ABS

3.4 Population Projections

A variety of factors influence the housing market though the key driver of demand is population growth.

The outbreak of COVID-19 has significantly impacted national population growth due to the cessation of international migration. Capital cities – where international migration is largely the key source of population growth, the impacts have been greater.

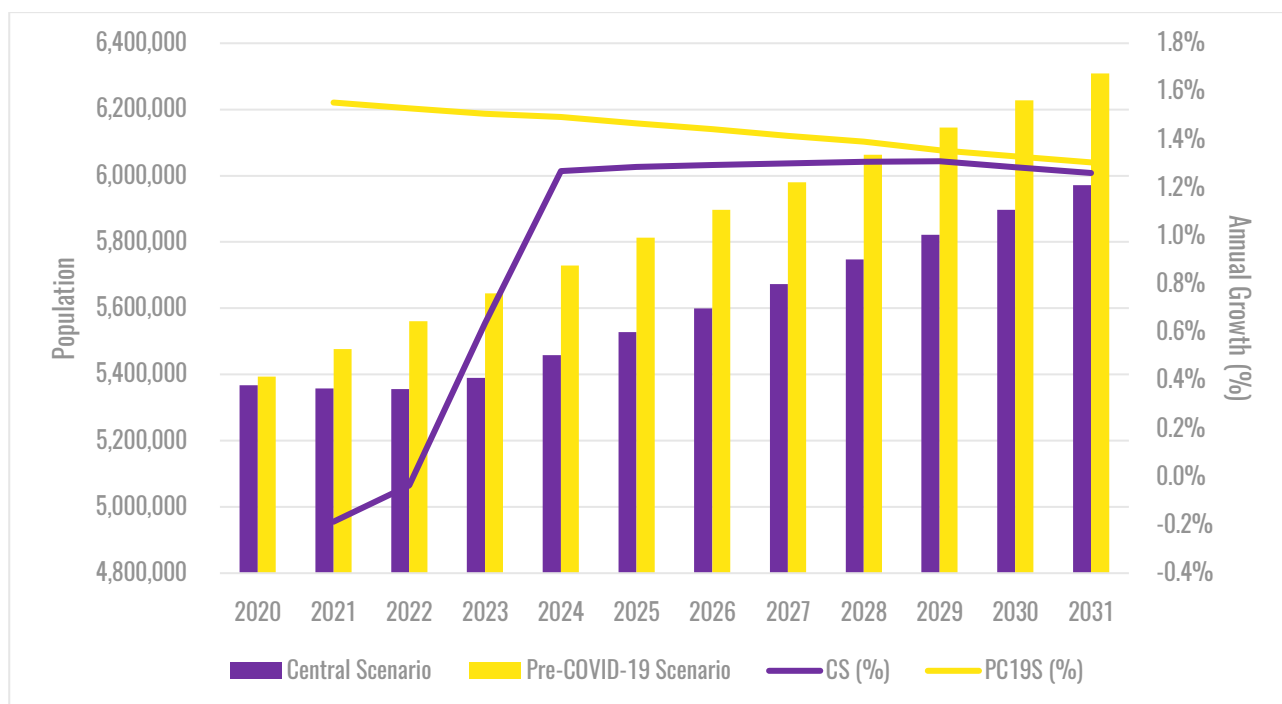
3.4.1 Centre for Population Projections

In December 2020, the Australian Government's Centre for Population, working with the NSW Government, released population projections which have included adjustments for the impact of COVID-19 on population growth. These projections are based over a 10-year period from 2020-21 to 2030-31.

Updated projections conclude that Greater Sydney is expected to grow by some 614,000 residents over the decade to 2020-2031. This compares with growth of almost 832,000 new residents expected in a pre-COVID-19 scenario. As such, this suggests Greater Sydney's population (by 2031) could be some 5% smaller because of the COVID-19 pandemic.

The Centre for Population projections for Greater Sydney are illustrated in **Figure 3.4**.

Figure 3.4: Centre for Population Projections (Greater Sydney), Central Scenario and Pre-COVID-19 Scenario



Source: Centre for Population (2020)

The updated projections do not breakdown population growth at the individual LGA level. The most current population projections carried out at the LGA-level remain those prepared by the NSW Department of Planning, Industry and Environment (DPIE).

3.4.2 DPIE Population Projections

Official population projections in NSW are carried out by the NSW Department of Planning Industry and Environment (DPIE).

DPIE's Demography and Research Unit project population growth on a variety of demographic assumptions, including birth and fertility rates, mortality rates, migration levels and household formation patterns. These projections of population growth are divided by projected household occupancy rates to arrive at the number of dwellings impliedly required to accommodate the projected population.

The most recent population projections prepared by DPIE were released in 2019. Three sets of population projections were made publicly available at a State, Capital City and LGA level:

- **Main Series Projections:** the NSW Government's 'central scenario' for population growth over the coming decades to 2041 and the standard set of population projections used in the State strategic and transport planning.
- **High Scenario Projections:** an alternative set of population projections based on higher levels of population growth compared to the Main Series.
- **Low Scenario Projections:** an alternative set of population projections based on lower levels of population growth compared to the Main Series.

As at the date of writing, the NSW Government's Main Series population projections remain the standard set of projections used in the NSW Government's Common Planning Assumptions. However, it is understood that DPIE are preparing an updated set of population projections to reflect the impact of the COVID-19 pandemic.

Given the significant difference in population growth in Greater Sydney expected by the Centre for Population, this Update will consider DPIE's Low Scenario population projections in assessing the need for housing across the Western City.

Population Projections

Under the Main Series population projections, the Western City District was projected to increase by some 822,000 residents over the coming decades to 2041, reaching a total population of just over 1,870,000 residents. This was to be largely driven by growth in the Liverpool, Camden and Penrith LGAs and reflective of the importance of the District's Growth and Investigation Areas as new housing precincts.

Under the Low Scenario, the Western City is anticipated to grow by around 699,500 residents by 2041, totalling a population of some 1,750,000 residents. This is approximately 122,500 (-6.5%) fewer residents than that anticipated in the Main Series.

Table 3.2 illustrates the Low Scenario and Main Series population projections for the Western City

Table 3.2: Main Series and Low Scenario Population Projections (2016-2041), Western City

Area	2016	2021	2026	2031	2036	2041	Change (2016-41)
Main Series							
Blue Mountains	78,835	78,598	78,349	79,443	80,306	83,578	4,743
Camden	80,264	127,647	153,299	180,071	236,255	307,727	227,463
Campbelltown	161,566	180,051	194,039	212,366	227,946	249,262	87,696
Fairfield	205,675	209,983	216,693	232,681	254,821	264,588	58,913
Hawkesbury	66,346	67,156	70,099	75,944	77,048	79,792	13,446
Liverpool	211,983	251,322	291,187	328,447	380,085	441,427	229,444
Penrith	201,597	230,289	248,577	292,019	350,906	369,246	167,649
Wollondilly	49,854	54,140	58,482	66,381	73,477	82,513	32,659
Western City District	1,056,120	1,199,186	1,310,725	1,467,352	1,680,844	1,878,133	822,013
Low Scenario							
Blue Mountains	78,835	77,593	75,646	75,339	74,765	76,504	-2,331
Camden	80,264	126,598	149,388	173,326	226,152	293,160	212,896
Campbelltown	161,566	177,965	187,975	202,764	214,464	231,484	69,918
Fairfield	205,675	207,363	209,486	221,551	239,464	244,450	38,775
Hawkesbury	66,346	66,303	67,782	72,356	72,076	73,358	7,012
Liverpool	211,983	248,599	282,896	314,818	360,415	414,629	202,646
Penrith	201,597	227,678	240,864	279,738	333,230	344,980	143,383
Wollondilly	49,854	53,499	56,655	63,494	69,377	77,026	27,172
Western City District	1,056,120	1,185,598	1,270,692	1,403,386	1,589,943	1,755,591	699,471

Source: DPIE (2019)

Implied Dwelling Requirements

Under the Main Series, the Western City was expected to require around 704,000 dwellings over the coming decades to 2041. Unfortunately, implied dwelling requirements for DPIE's Low or High Scenario population projections have not been made publicly available.

In order to estimate the quantum of dwellings required under the Low Scenario, the number of residents per dwelling in the Main Series projections have been analysed. This analysis is shown in Table 3.3.

Table 3.3: Capita by Dwelling (Main Series; 2016, 2041), Western City

Area	2016			2041		
	Dwelling Need	Population	Pop/Dw	Dwelling Need	Population	Pop/Dw
Blue Mountains	34,758	78,835	2.27	40,356	83,578	2.07
Camden	27,159	80,264	2.96	110,353	307,727	2.79
Campbelltown	57,591	161,566	2.81	95,256	249,262	2.62
Fairfield	67,898	205,675	3.03	95,456	264,588	2.77

Area	2016			2041		
	Dwelling Need	Population	Pop/Dw	Dwelling Need	Population	Pop/Dw
Hawkesbury	25,031	66,346	2.65	32,998	79,792	2.42
Liverpool	69,556	211,983	3.05	156,776	441,427	2.82
Penrith	73,405	201,597	2.75	142,186	369,246	2.60
Wollondilly	17,511	49,854	2.85	31,320	82,513	2.63
Western City	372,909	1,056,120	2.27	704,701	1,878,133	2.07

Source: Atlas/DPIE (2019)

Assuming these capita/dwelling ratios would remain consistent in the Low Scenario, these ratios have then been applied to the population projections in the Low Scenario to identify the potential number of dwellings required under the Low Scenario.

Applying these assumptions suggests that under the Low Scenario, the Western City would require approximately 658,000 dwellings by 2041. This represents around 46,000 fewer dwellings by 2041 than that identified under the Main Series.

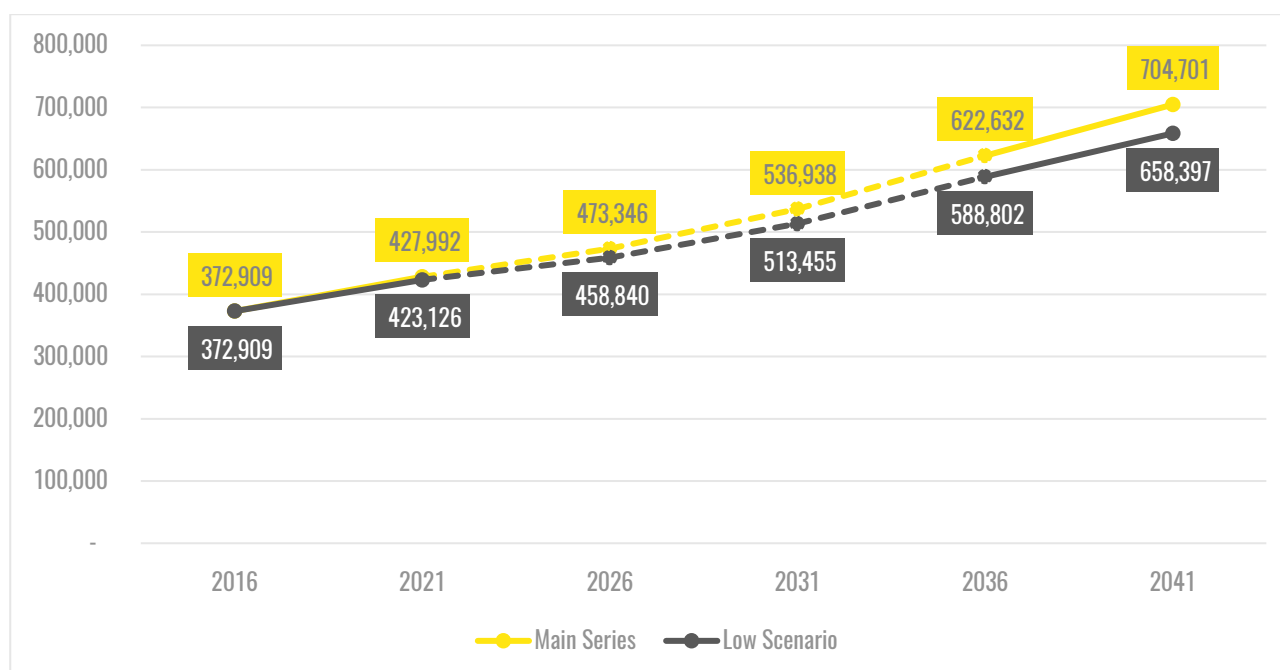
Table 3.4 shows the analysis applied to assess the potential dwelling need for the Western City under the Low Scenario and this is illustrated in **Figure 3.5**

Table 3.4: Potential Dwelling Need (Low Scenario; 2016, 2041), Western City

Area	Low Series (2016)			Low Series (2041)		
	Population	Pop/Dwl	Dwelling Need	Population	Pop/Dwl	Dwelling Need
Blue Mountains	78,835	2.27	34,758	76,504	2.07	36,940
Camden	80,264	2.96	27,159	293,160	2.79	105,129
Campbelltown	161,566	2.81	57,591	231,484	2.62	88,462
Fairfield	205,675	3.03	67,898	244,450	2.77	88,191
Hawkesbury	66,346	2.65	25,031	73,358	2.42	30,337
Liverpool	211,983	3.05	69,556	414,629	2.82	147,258
Penrith	201,597	2.75	73,405	344,980	2.60	132,842
Wollondilly	49,854	2.85	17,511	77,026	2.63	29,237
Western City	1,056,120	2.27	372,909	1,755,591	2.07	658,397

Source: Atlas/DPIE (2019)

Figure 3.5: Potential Dwelling Requirements (2016-2041), Western City District



Source: Atlas/DPIE (2019)

4. Housing Demand

This Chapter examines historical and future demand for housing in the Western City District. Historical demand is investigated through the analysis of market activity, including median price growth, sales volumes and take-up rates for new housing.

4.1 Market Activity

4.1.1 Median Sale Prices

Sale prices are one of the principal indicators for housing demand over time. Over the 10 years to Q1 2021, house prices across the Western City District have risen on average by between 4.9% to 6.9% per annum (CoreLogic RP Data, 2021). This is broadly in line with Greater Sydney, where house prices have on average risen by 5.2% per annum since 2011.

Whilst median house values across the Western City fall within a relatively tight range, a hierarchy of values is observed with the Fairfield LGA commanding the highest median sale price at \$840,000, followed closely by Liverpool (\$790,000), Hawkesbury (\$785,000) and Camden (\$770,000). Wollondilly (\$768,000), Penrith (\$750,000) and the Blue Mountains (\$747,000) are more affordable, whilst Campbelltown (\$677,000) is markedly lower.

In line with the broader Greater Sydney region, almost all LGAs within the Western City recorded strong growth in median house values over the 12 months to Q1 2021. Growth has generally been in excess of 7% over the year, with the exception of Camden (3.2%), Liverpool (0.7%) and Wollondilly (-0.3%). All LGAs have recorded strong median house price growth over the past 3-months however, ranging from 1.2% to 2.2% (\$9,000 to \$16,000) in this short period.

Table 4.1 shows the growth in median house prices across the Western City District.

Table 4.1: Median Sale Prices (Houses) by LGA, Western City District

LGA	Median Sale Price		Recent Changes in Median Sale Prices (%)			Long-Term Avg. Annual Growth (%)	
	Feb-2020	Feb-2021	2020-2021	2018-2021	2017-2021	2011-2021	2001-2021
Blue Mountains	\$690,578	\$747,000	8.2%	3.7%	27.8%	6.2%	6.4%
Camden	\$746,278	\$770,000	3.2%	-2.4%	8.2%	4.9%	6.5%
Campbelltown	\$614,508	\$677,000	10.2%	0.0%	15.3%	6.9%	6.9%
Fairfield	\$780,374	\$840,000	7.6%	-0.7%	10.0%	6.7%	6.8%
Hawkesbury	\$713,591	\$785,000	10.0%	0.1%	19.1%	6.5%	6.5%
Liverpool	\$784,733	\$790,000	0.7%	-6.8%	4.2%	5.5%	6.1%
Penrith	\$699,650	\$750,000	7.2%	1.4%	16.3%	6.8%	6.7%
Wollondilly	\$770,676	\$768,000	-0.3%	-4.3%	10.6%	5.4%	6.3%
Greater Sydney	\$931,099	\$1,000,000	7.4%	1.5%	13.2%	5.2%	6.5%

Source: CoreLogic RP Data

In a similar trend to the housing market, most apartment markets across the Western City District recorded growth over the 12 months to Q1 2021. This growth has yet to result in apartment values returning to the highs recorded over the 2017-18 period, with LGAs such as Campbelltown, Liverpool, Penrith and Fairfield still recording below-peak median apartment prices.

Over the 10-years to Q1 2021, apartment values across the Western City have increased by between 5.0% and 7.4% per annum (on average). This rate of growth is greater than that recorded across Greater Sydney which averaged of 4.3%. Similar to the housing market, most LGAs across the Western City have recorded strong apartment price growth over the recent 3-month period, with values rising by 1.0% to 3.5% (\$5,000 to \$18,000).

Table 4.2 shows the growth in median apartment prices across the Western City District.

Table 4.2: Median Sale Prices (Units) by LGA, Western City District

LGA	Median Sale Price		Recent Changes in Median Sale Prices (%)			Long-Term Avg. Annual Growth (%)	
	Feb-2020	Feb-2021	2020-2021	2018-2021	2017-2021	2011-2021	2001-2021
Blue Mountains	\$533,506	\$532,000	-0.3%	0.0%	30.2%	5.0%	5.3%
Camden	\$619,341	\$654,500	5.7%	7.8%	22.2%	7.4%	6.7%
Campbelltown	\$438,756	\$462,500	5.4%	-5.7%	5.4%	6.0%	6.6%
Fairfield	\$424,719	\$450,000	6.0%	-3.3%	1.6%	5.7%	7.0%
Hawkesbury	\$512,624	\$545,000	6.3%	0.9%	7.4%	5.3%	5.3%
Liverpool	\$494,804	\$515,000	4.1%	-5.6%	4.1%	6.4%	6.4%
Penrith	\$493,885	\$515,000	4.3%	-3.8%	8.7%	6.0%	6.4%
Wollondilly	\$442,000	\$425,000	-3.8%	1.4%	25.0%	5.4%	6.1%
Greater Sydney	\$705,00	\$725,000	2.8%	-2.0%	3.6%	4.3%	5.0%

Source: CoreLogic RP Data

4.1.2 Sales Volumes

Measuring the volumes of dwellings being offered for sale (i.e. listings) and the number actual sales recorded over any given time series is another useful barometer for housing demand. These indicators provide a further level of insight into housing demand beyond that which can be obtained from analysis of pricing data alone.

Over the 12 months to Q1 2021, all LGAs recorded a strong increase in the number of house sales as market activity across Greater Sydney has steadily improved. Conversely, the number *listings* across each LGA fell significantly over the 12 months to Q1 2021. This lack in supply is one of the contributing factors to the rapid increase in median house prices over the period.

Table 4.3 shows listing and sales volumes for detached houses across the Western City District over 2019-2021.

Table 4.3: Sales Activity (2019-2021), Western City District

LGA	Listings			Sales		
	2019-20	2020-21	Change	2019-20	2020-21	Change
Blue Mountains	1,568	1,498	-4.5%	1,354	1,547	14.3%
Camden	2,354	2,157	-8.4%	2,146	2,689	25.3%
Campbelltown	1,914	1,898	-0.8%	1,936	2,004	3.5%
Fairfield	1,429	1,241	-13.2%	1,284	1,325	3.2%
Hawkesbury	1,192	1,035	-13.2%	896	1,052	17.4%
Liverpool	2,102	1,914	-8.9%	1,909	2,254	18.1%
Penrith	2,433	2,239	-8.0%	2,273	2,373	4.4%
Wollondilly	940	924	-1.7%	749	999	33.4%

Source: CoreLogic RP Data

4.2 Demand for New Housing

4.2.1 Greenfield Development

Sales data in Greater Sydney's Growth Areas is tracked by DPIE. This is useful in understanding demand for new housing in the Western City, specifically in the South West Growth Area (SWGA).

In the four years to March 2021, a total of 10,598 sales were recorded in precincts which have been released in the SWGA at an average rate of 2,650 sales per annum. The greatest number of sales over this period was recorded in Oran Park at 2,537 sales, closely followed by East Leppington (2,281 sales) and Edmondson Park (1,560 sales).

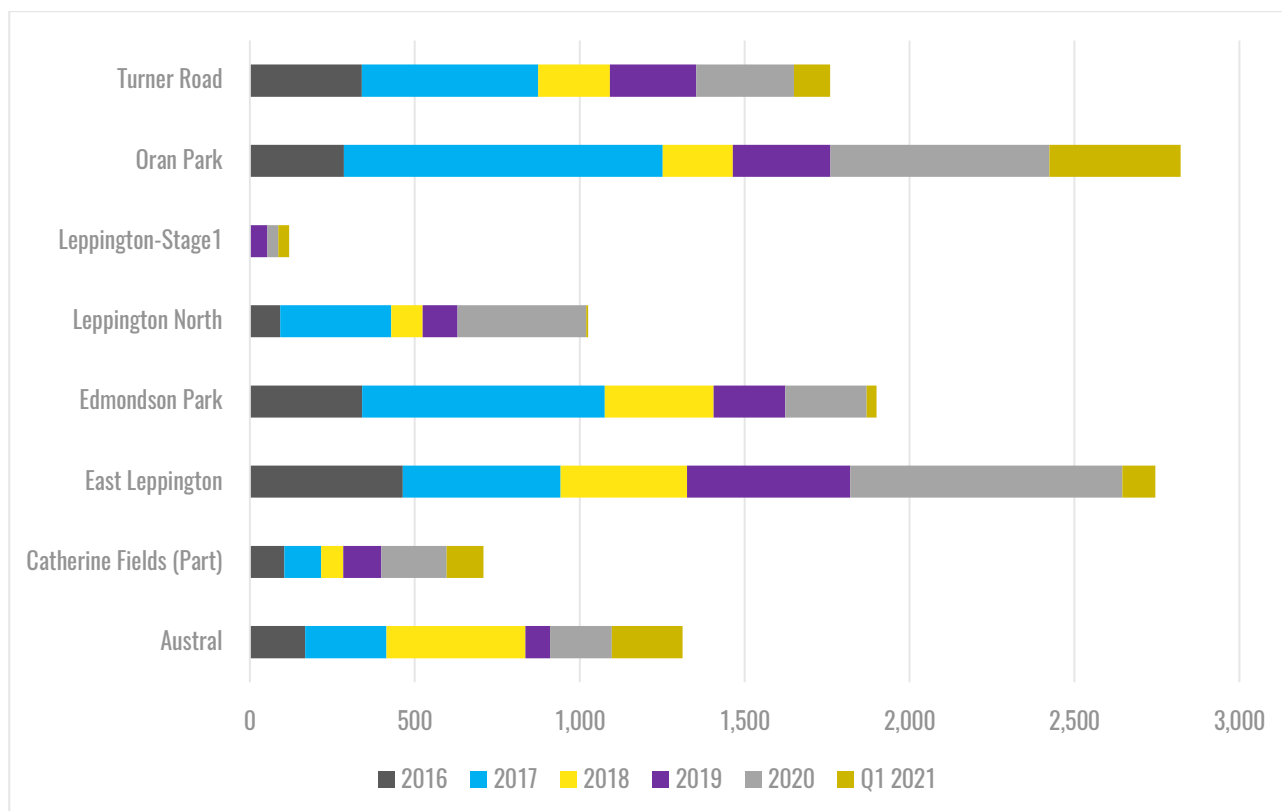
Sales activity across the SWGA peaked over the course of 2020 has been amongst the most active years recorded – a total of 2,840 sales were recorded over the 2020 period. This compares to approximately 1,620 sales over the course of 2019 and

reflective of a 75% increase in sales volumes. This market uptick in sales volumes is testament to the current market conditions buoyed by various government incentive schemes and record low interest rates.

In the first quarter of 2021, a total of just over 1,000 sales were recorded across the SWGA. This represents the largest number of sales recorded in a single quarter in the SWGA. It is expected that an equally strong level of sales will be observed in Q2 2021.

Figure 4.1 shows the number of sales recorded in the precincts released in the SWGA over 2016 to Q1 2021.

Figure 4.1: Sales Volumes (2016-Q1 2021), Released Precincts in South West Growth Area



Note: 2016 data available for Q3 and Q4 only
Source: DPIE (2021)

4.2.2 Infill Development

Whilst apartment markets across the Western City are undoubtedly less mature compared to those in the Central and Eastern City Districts, demand for smaller, more affordable forms of housing has been growing over the past five years. This demand has primarily been limited to the Western City's major centres, namely Liverpool and Penrith. Medium-density typologies (i.e. townhouses and villas) have also attracted strong levels of demand across the Western City over the past 5 years as affordability issues continue to draw more buyers away from larger (and often more expensive) housing formats.

To understand demand for infill forms of housing across the Western City District, a high-level review of some of the more recent apartment projects to come to market in some of the District's largest centres has been undertaken.

- **Liverpool City Centre**

The Liverpool City Centre has experienced a significant upswing in apartment development over the past five years with some of the tallest residential buildings outside of the Sydney CBD. These developments were met with solid take-up rates over the course of 2014-2017, aligning with residential boom during this period across Greater Sydney.

For instance, the 30-storey apartment building 'Skyhaus' comprising 439 apartments sold out over a 2.5-year period over 2015-2017, equating to almost 15 sales per month.

The Paper Mill precinct just south of the Liverpool City Centre along the banks of the Georges River is the largest apartment precinct to be delivered in the area to date. Set to comprise a total 883 units, the development sold 800 units over a five-year period, equating to around 13 sales per month of 160 sales per annum.

- **Penrith City Centre**

Along with the Liverpool City Centre, Penrith has been one of the focal points for high-density development across the Western City District over the past five years. The Thornton Precinct immediately north of Penrith train station on land previously owned by the NSW Government has been the catalyst for this shift. The 1,050-unit precinct commenced marketing in 2015 with 546 units completely taken up over a four-year period (136 units per annum). This includes the release of Stage 2 (190 units) which sold out in a single day in 2015.

The other major development being progressed in the City Centre is the East Side Quarter adjacent the Penrith Panthers Entertainment Precinct. Comprising some 850 units, 60% of Stage 1 (152 units) sold prior to the main launch in mid-2018 with marketing for Stage 2 now underway.

- **Campbelltown City Centre**

High-rise apartment development in the Campbelltown City Centre has been distinctly smaller scale compared to Liverpool and Penrith. Notwithstanding, take-up of new apartment product has been good although depth of demand remains relatively shallow given the relative affordability of other housing typologies within the area. Examples such as 38-42 Chamberlain Street (6-storey), 30-34 Chamberlain Street (6-storey) and 48-52 Warby Street (6-storey) sold over the 2016-2018 period with take-up rates understood to range from 3-5 sales per month.

4.3 Implications for Housing Supply

Following a softening in market conditions witnessed over 2018-2019, demand for housing across the Western City over the course of 2020 has been at historic highs. Sales volumes in the SWGA have been amongst the highest on record and well above the historical average. Median house prices are increasing at a rapid pace across all of the Western City's LGAs.

Taking a broader view, the long-term historical growth in housing demand across the Western City has been significant. In the 10-years to 2020, most LGAs in the City recorded average growth higher than that recorded in Greater Sydney. This is indicative of a market where housing demand is outstripping supply.

Looking forward, DPIE's Low Scenario population and household projections indicate there could be a requirement for some 658,000 homes by 2041. The capacity and likelihood that the Western City can accommodate this quantum of housing demand is examined next.

5. Housing Supply

This Chapter examines housing supply in the Western City. Existing supply and historical levels of growth is firstly assessed. Data on future planned supply (i.e. the amount of housing expected in key growth areas) and that are in the development pipeline is then examined and interrogated. Lastly, the likelihood of planned supply being delivered over the coming decades is examined.

5.1 Existing Supply

There is no current count of existing private dwellings in the Western City. A combination of ABS Census (2016) and DPIE dwelling completions data has been used to estimate the existing number of private dwellings in the District.

5.1.1 Census Count

As stated in section 2.3 the most recent formal count of private dwellings in the Western City was the 2016 Census. The number of private dwellings in the District as at the 2016 Census night (August 2016) is shown in **Table 5.1**.

Table 5.1: Private Dwelling Count (2016), Western City District

LGA	Private Dwellings	Proportion of Total
Blue Mountains	34,309	9.6%
Camden	26,197	7.3%
Campbelltown	55,326	15.5%
Hawkesbury	24,094	6.8%
Fairfield	62,782	17.6%
Liverpool	65,931	18.5%
Penrith	71,114	19.9%
Wollondilly	16,782	4.7%
Western City District	356,535	100.0%

Source: ABS (compiled by .id)

5.1.2 Recent Growth

Dwelling completions across Greater Sydney's LGAs are monitored by the DPIE Metropolitan Housing Monitor on a monthly basis. Dwellings are categorised as detached or multi-unit (which includes both medium and high-density housing typologies). The Metropolitan Housing Monitor is current to Q4 2020.

Analysis of dwelling completions is useful for the purposes of this Study given it shows the rate of historical dwelling growth in the Western City since the 2016 Census.

Metropolitan Housing Monitor

Over 2016-2020, over 40,600 dwellings were completed across the Western City with an average completion rate of 8,122 dwellings per annum. Dwelling completions peaked over 2017-2018 with annual completions of circa 9,000 to 9,100 per annum. A significant fall in completions was recorded in 2019 with around 7,700 dwellings completed, with around 7,600 dwellings completed in 2020. Notably, the average rate of dwelling completions over 2016-2019 has been faster than that recorded over the 2011-2016 Census period.

The majority of completions in the Western City have been recorded in the Camden, Liverpool, Penrith and Campbelltown LGAs. Approximately 67% of new dwellings have been detached housing with 33% being multi-unit housing. The proportion of multi-unit housing has been progressively rising since 2016, increasing from 24.5% of all dwelling completions in 2016 to 37% in 2020.

Table 5.2 shows the number of dwelling completions across the Western City District (by LGA) over the 2016-2020 period.

Table 5.2: Dwelling Completions (2016 to Q3 2019), Western City District

Area	2016			2017			2018			2019			2020		
	Detached	Strata	Total	Detached	Strata	Total	Detached	Strata	Total	Detached	Strata	Total	Detached	Strata	Total
No. of Dwelling Completions															
Hawkesbury	168	6	174	212	67	279	201	0	201	124	24	148	196	8	204
Blue Mountains	137	14	151	146	64	210	71	18	89	109	52	161	61	4	65
Wollondilly	277	76	353	270	85	355	326	49	375	244	17	261	251	30	281
Penrith	895	570	1,465	820	895	1,715	871	1,481	2,352	620	675	1,295	523	836	1,359
Fairfield	130	160	290	156	124	280	211	271	482	157	75	232	155	322	477
Liverpool	1,035	464	1,499	1,169	667	1,836	1,020	837	1,857	766	1,356	2,122	744	1,244	1,988
Camden	2,166	162	2,328	2,585	256	2,841	2,191	218	2,409	2,184	92	2,276	1,845	164	2,009
Campbelltown	609	304	913	980	626	1,606	945	302	1,247	823	373	1,196	1,033	197	1,230
Western City	5,417	1,756	7,173	6,338	2,784	9,122	5,836	3,176	9,012	5,027	2,664	7,691	4,808	2,805	7,613
Proportion of Dwelling Completions															
Hawkesbury	96.6%	3.4%	100.0%	76.0%	24.0%	100.0%	100.0%	0.0%	100.0%	77.4%	22.6%	100.0%	96.1%	3.9%	100.0%
Blue Mountains	90.7%	9.3%	100.0%	69.5%	30.5%	100.0%	79.8%	20.2%	100.0%	65.5%	34.5%	100.0%	93.8%	6.2%	100.0%
Wollondilly	78.5%	21.5%	100.0%	76.1%	23.9%	100.0%	86.9%	13.1%	100.0%	92.4%	7.6%	100.0%	89.3%	10.7%	100.0%
Penrith	61.1%	38.9%	100.0%	47.8%	52.2%	100.0%	37.0%	63.0%	100.0%	45.5%	54.5%	100.0%	38.5%	61.5%	100.0%
Fairfield	44.8%	55.2%	100.0%	55.7%	44.3%	100.0%	43.8%	56.2%	100.0%	75.0%	25.0%	100.0%	32.5%	67.5%	100.0%
Liverpool	69.0%	31.0%	100.0%	63.7%	36.3%	100.0%	54.9%	45.1%	100.0%	34.0%	66.0%	100.0%	37.4%	62.6%	100.0%
Camden	93.0%	7.0%	100.0%	91.0%	9.0%	100.0%	91.0%	9.0%	100.0%	95.7%	4.3%	100.0%	91.8%	8.2%	100.0%
Campbelltown	66.7%	33.3%	100.0%	61.0%	39.0%	100.0%	75.8%	24.2%	100.0%	63.0%	37.0%	100.0%	84.0%	16.0%	100.0%
Western City	75.5%	24.5%	100.0%	69.5%	30.5%	100.0%	64.8%	35.2%	100.0%	62.0%	38.0%	100.0%	63.2%	36.8%	100.0%

Source: DPIE (2021b)

5.1.3 Calculating Existing Supply

The following steps are taken to approximate the existing number of dwellings (at 2019) in the Western City District:

1. Adopt the 2016 Census dwelling counts (total private dwellings) as a starting point.
2. Sum dwelling completions for each LGA from September 2016 to December 2016 (months prior to September 2016 are not included given the 2016 Census was completed on 9 August 2016).
3. Sum the 2016 Census dwelling counts and DPIE dwelling completions from September 2016 onwards to arrive at existing dwelling supply for Q4 2020.

Table 5.3 shows the process in estimating the total number of existing dwellings in the Western City District as at Q4 2020.

Table 5.3: Existing Private Dwelling Supply (Q4 2020), Western City District

Area	Census 2016 Dwellings (a)	DPIE Dwelling Completions (b)					Existing Supply (a+b)
		2016 ¹	2017	2018	2019	2020	
Blue Mountains	34,309	108	210	89	161	65	34,942
Camden	26,197	1,048	2,841	2,409	2,276	2,009	36,780
Campbelltown	55,326	422	1,606	1,247	1,196	1,230	61,027
Fairfield	62,782	75	280	482	232	477	64,328
Hawkesbury	24,094	78	279	201	148	204	25,004
Liverpool	65,931	755	1,836	1,857	2,122	1,988	74,489
Penrith	71,114	769	1,715	2,352	1,295	1,359	78,604
Wollondilly	16,782	130	355	375	261	281	18,184
Western City	356,535	3,385	9,122	9,012	7,691	7,613	393,358

Notes: 1 - Dwelling completions from September 2016-December 2016, 2 - Data is current to Q4 2020

Source: ABS/ Atlas/ DPIE (2021b)

5.2 Planned Supply

There is a significant amount of housing that is being planned for in the Western City. Whilst the majority of new housing is planned in the main Growth Areas of the Western City - Western Sydney Aerotropolis, South West Growth Area, Wilton Growth Area and Greater Macarthur Area, there are other areas and precincts across the District which are also planned and have the capacity to significantly contribute to new housing.

This section takes a broad, comprehensive approach to identifying and establishing the quantum of housing which could be theoretically delivered across the Western City. This has involved investigating all known areas and regions where future housing is being planned, including Growth Areas, Planned Precincts and Investigation Areas. This process has investigated each of the eight LGAs within the District in detail.

5.2.1 Context of Land Release

The planning process for land release is undertaken in several stages. This approach seeks to ensure a range of environmental, planning, infrastructure and economic considerations are addressed prior to land being rezoned and developed.

It is an unfortunate reality that land release in Sydney has occurred at a slower rate compared to other areas of Australia. The primary issue appears to be the misalignment of infrastructure delivery timeframes and land release in growth areas.

Overall, the process of land release occurs in a three-step process.

- **Preliminary Investigations:** Preliminary investigations seek to assess the physical capacity of an area to accommodate housing after consideration a range of environmental and strategic planning factors.
- **Release for Precinct Planning:** Upon the completion of preliminary investigations, an area is then released for precinct planning. This step involves the detailed process of structure planning and considers, *inter alia*, dwelling yields, spatial distribution of land uses and more detailed infrastructure planning.

- **Rezoning:** Following the finalisation of structure planning, an area is rezoned for urban development. It is at this stage that development can commence and new housing can be delivered.

It is within this context that land release across Greater Sydney has occurred.

5.2.2 Areas Investigated

The review of planned supply identifies some 68 precincts which are planned for new housing. These precincts are located in growth areas; South West Growth Area, Western Sydney Aerotropolis, Greater Penrith to Eastern Creek, Greater Macarthur Growth Area, Fairfield Rural Lands Urban Investigation Area, Liverpool City Centre and Wilton New Town.

South West Growth Area

The South West Growth Area (SWGA) is one of the largest greenfield release areas. The SWGA comprises 14 individual precincts and stretches across most of Camden LGA with some precincts falling within the Liverpool and Campbelltown LGAs. Initial planning identified a total planning (theoretical) capacity of around **108,000 dwellings** across the SWGA upon buildout.

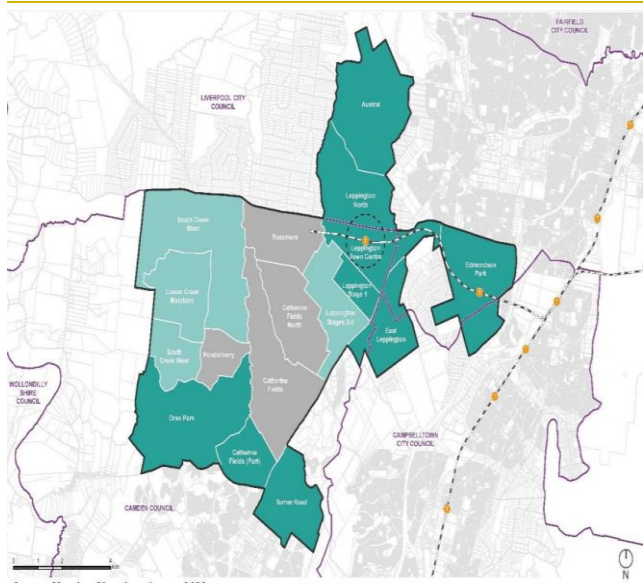
Precinct release across the SWGA has been staged. Oran Park and Turner Road were first rezoned and released in 2007 with strong take-up and development across both precincts. This has largely been attributed to both precincts being held in single or majority ownership. Edmondson Park was rezoned and released in 2008 and has enjoyed similar success given the precinct was held in majority ownership.

Numerous other precincts (Catherine Field, East Leppington, Austral and Leppington North) were rezoned over the course of 2013-2014. Development in these precincts has been more tempered, particularly in Austral and Leppington North where small landholdings and fragmented land ownership patterns have presented difficulties for consolidating landholdings for new development.

More recently, the Lowes Creek Maryland and South Creek West precincts have been released for planning, although rezoning has yet to occur. Release of the precincts was initiated by landowners under Precinct Acceleration Protocols (PAP).

Table 5.4: Summary of Planned Supply, South West Growth Area

South West Growth Area	
Location (LGA)	Camden, Campbelltown, Liverpool
Status	8 precincts rezoned; 3 precincts released; 3 precincts not released
Planned Supply	108,000 dwellings
Remaining Supply	87,298 dwellings



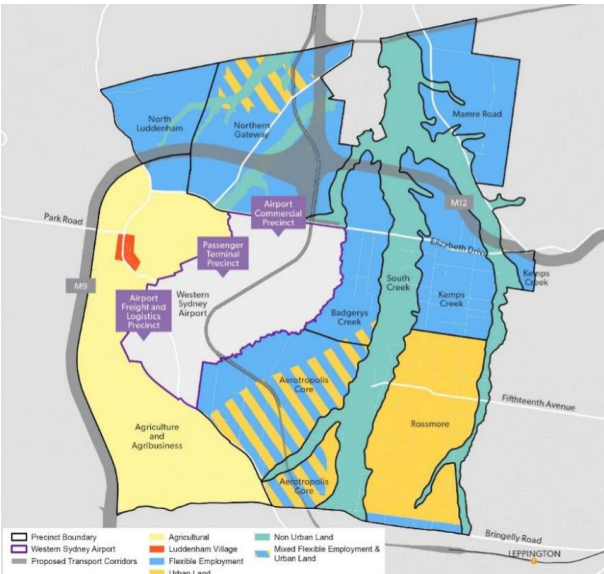
Source: Atlas

Western Sydney Aerotropolis

The Western Sydney Aerotropolis comprises some 11,200ha of land centred around the future Western Sydney Airport (WSA) and is planned to be one of Greater Sydney's largest economic hubs. The Aerotropolis is divided into nine precincts which will be released in two stages to align with the completion of the WSA in 2026. A series of initial precincts (Aerotropolis Core, Northern Gateway, Agribusiness) were rezoned in late-2020.

Planning for the Aerotropolis envisages the delivery of some 200,000 jobs and 60,000 new homes by 2026. Approximately 11,400 dwellings are planned for delivery in Stage 1.

Table 5.5: Summary of Planned Supply, Western Sydney Aerotropolis

	Western Sydney Aerotropolis	
	Location (LGA)	Penrith, Liverpool, Fairfield
	Status	Initial Precincts rezoned in 2020 Remaining precincts to be progressively released and rezoned
	Planned Supply	60,000 dwellings
	Remaining Supply	60,000 dwellings

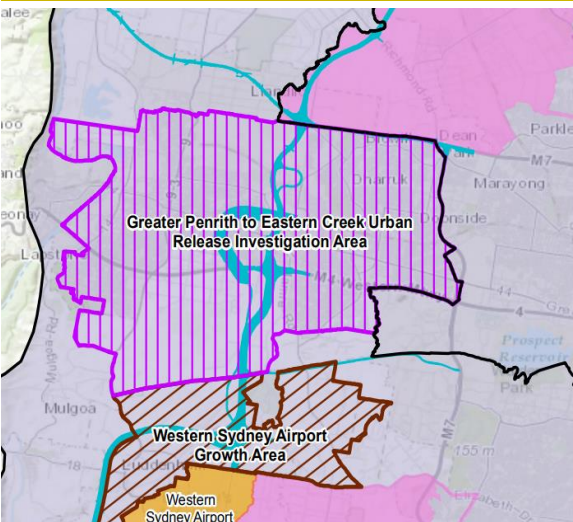
Source: Atlas

Greater Penrith to Eastern Creek

The Greater Penrith to Eastern Creek Urban Release Investigation Area is a large, loosely defined area located across the Penrith and Blacktown LGAs which was identified in the Greater Sydney Region Plan for future housing development. Overall, the 17 release areas and urban renewal precincts across the Penrith LGA which fall within the boundaries of the Greater Penrith to Eastern Creek Urban Release Investigation Area have the capacity of some 61,050 dwellings.

A detailed review of planning strategies and development proposals indicates there are currently 17 release areas and urban renewal precincts across the Penrith LGA which fall within the boundaries of the Greater Penrith to Eastern Creek Urban Release Investigation Area. The status of these various release areas varies considerably. For instance, the Caddens Release Area is rezoned and 'development-ready' whereas the structure planning for the Orchard Hills has yet to commence.

Table 5.6: Summary of Planned Supply, Greater Penrith to Eastern Creek Urban Release Investigation Area

	Greater Penrith to Eastern Creek Urban Release Investigation Area	
	Location (LGA)	Penrith, Blacktown
	Status	Precinct planning
	Planned Supply	61,050 dwellings
	Remaining Supply	60,280 dwellings

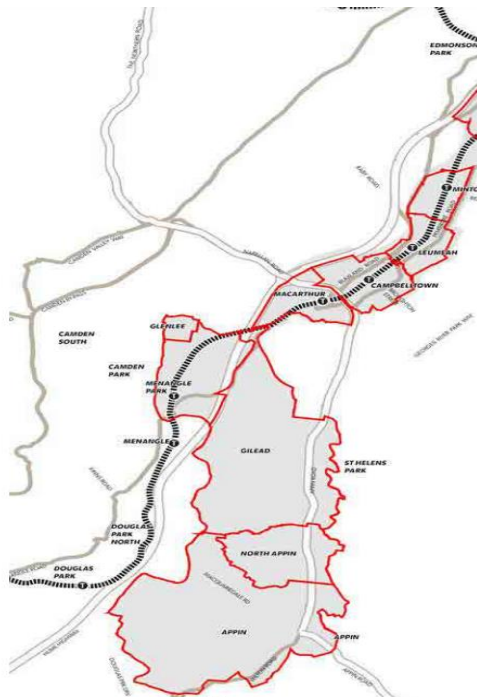
Source: Atlas

Greater Macarthur Growth Area

The Greater Macarthur Growth Area (GMGA) is a major growth area in the Campbelltown and Wollondilly LGAs and comprises a mix of greenfield release areas (Menangle Park, Gilead, North Appin, West Appin) and urban renewal areas, incorporating the Glenfield to Macarthur Urban Renewal Corridor. With a total of 11 individual greenfield and urban renewal areas, planning for the GMGA has identified the potential for some 56,000 dwellings upon build-out.

Only three precincts within the GMGA are currently being progressed. The Menangle Park (4,000 dwellings) and Gilead (1,250 dwellings – first stage) precincts received rezoning approval in 2019 with marketing expected to commence in 2020. The Leumeah precinct is the first precinct within the Glenfield to Macarthur Urban Renewal Corridor to be progressed for rezoning, with Campbelltown City Council progressing a rezoning of the precinct in early 2020.

Table 5.7: Summary of Planned Supply, Greater Macarthur Growth Area

	Greater Macarthur Growth Area	
	Location (LGA)	Campbelltown, Wollondilly
	Status	Precinct planning
	Planned Supply	56,230 dwellings
		Remaining Supply 56,230 dwellings

Source: Atlas

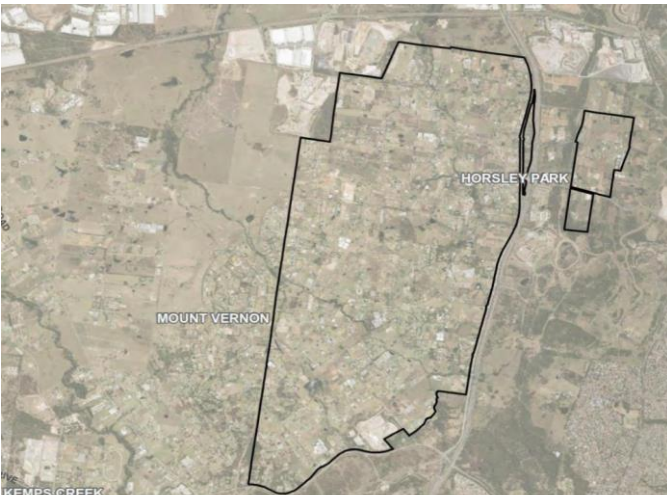
Fairfield Rural Lands Urban Investigation Area

The Fairfield Rural Lands Urban Investigation Area is located immediately north-east of the future Western Sydney Airport and comprises the peri-urban suburbs of Horsley Park and Cecil Park which border the Western Sydney Parklands.

Fairfield Council commissioned an Urban Capability Assessment for the Investigation Area which was placed on exhibition in early 2019. A Preferred Draft Structure Plan was adopted by Council in April 2019; the Structure Plan proposing between 14,152 and 20,000 dwellings, two village centres and 174ha of employment land.

Council are targeting to exhibit detailed Precinct Plans for the Area in 2021 with rezonings to occur from 2022. Whilst the area is currently serviced by essential infrastructure, the extent of upgrades required is yet to be determined.

Table 5.8: Summary of Planned Supply, Fairfield Rural Lands Urban Investigation Area

	Fairfield Rural Lands Urban Investigation Area	
	Location (LGA)	Fairfield
	Status	Early stages of structure planning
	Planned Supply	20,000 dwellings
		Remaining Supply 20,000 dwellings

Source: Atlas

Liverpool City Centre

The Liverpool City Centre is one of two metropolitan clusters within the Western City District and is a major commercial, civic, retail and residential hub within Sydney's South West. In 2018, the City Centre was rezoned B3 Commercial Core to B4 Mixed Use to facilitate high-density residential development. The Liverpool Place Strategy (2018) identified that the City Centre had the capacity to deliver an additional 18,800 dwellings based on the recently implemented planning controls.

There is a significant quantum of development activity underway in the Liverpool City Centre. As Liverpool grows in importance following the completion of the Western Sydney Airport and implementation of possible direct links (fast bus route), development activity is expected to further grow.

Table 5.9: Summary of Planned Supply, Liverpool City Centre

		Liverpool City Centre	
Location (LGA)	Liverpool		
Status	Rezoned		
Planned Supply	18,800 dwellings		
Remaining Supply	18,800 dwellings		

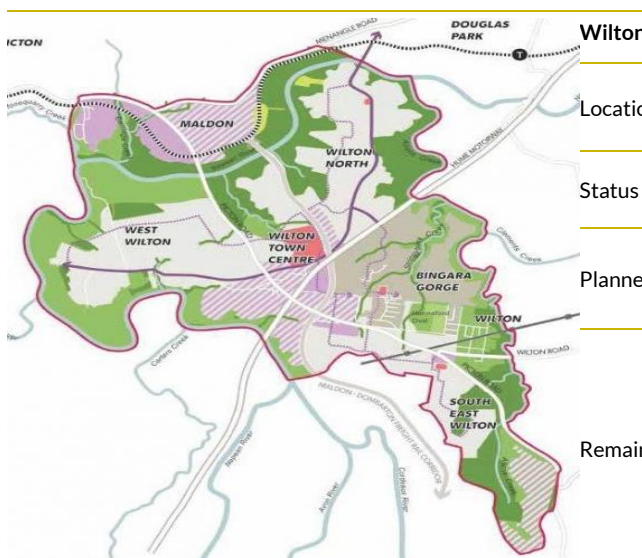
Source: Atlas

Wilton New Town

Wilton in the Wollondilly LGA has been identified as an area capable of accommodating additional housing and employment. The growth area is focused around the Hume Motorway and Picton Road intersection and comprises the existing village of Wilton in addition to new residential estate of Bingara Gorge.

The Wilton New Town is separated into six precincts and is controlled by four major landowners. The status of precinct planning varies with the Wilton Town Centre, South East Wilton and North Wilton the most advanced whilst Bingara Gorge has largely been developed. In total, the Wilton New Town precinct is expected to accommodate supply for 15,000 dwellings.

Table 5.10: Summary of Planned Supply, Wilton New Town

		Wilton New Town	
Location (LGA)	Wollondilly		
Status	Precinct planning underway		
Planned Supply	15,000 dwellings		
Remaining Supply	15,000 dwellings		

Source: Atlas

5.2.3 Summary of Findings

Based on the analysis of the various Growth Areas, Planned Precincts and Investigation Areas identified, the following key observations are made:

- There is planned supply for some 357,000 dwellings across the Western City in some 68 individual precincts.
- After deducting the number of dwellings which have been delivered to date, there is a remaining capacity of about **336,000 dwellings**.
- The greatest quantum of planned supply is in the Liverpool, Camden, Penrith, Campbelltown and Wollondilly LGAs.
- Assuming all of the remaining planned supply of 336,000 dwellings were delivered, this would be sufficient to meet the total implied dwelling requirement of 658,000 dwellings by 2041 under DPIE's Low Scenario.

The number of dwellings which could theoretically be delivered across the Western City (by LGA) is summarised in **Table 5.11** whilst **Figure 5.1** illustrates the location of the various Growth Areas, Planned Precincts and Investigation Areas across the Western City District.

Table 5.11: Planned Supply in Growth Areas, Planned Precincts and Investigation Areas, Western City District

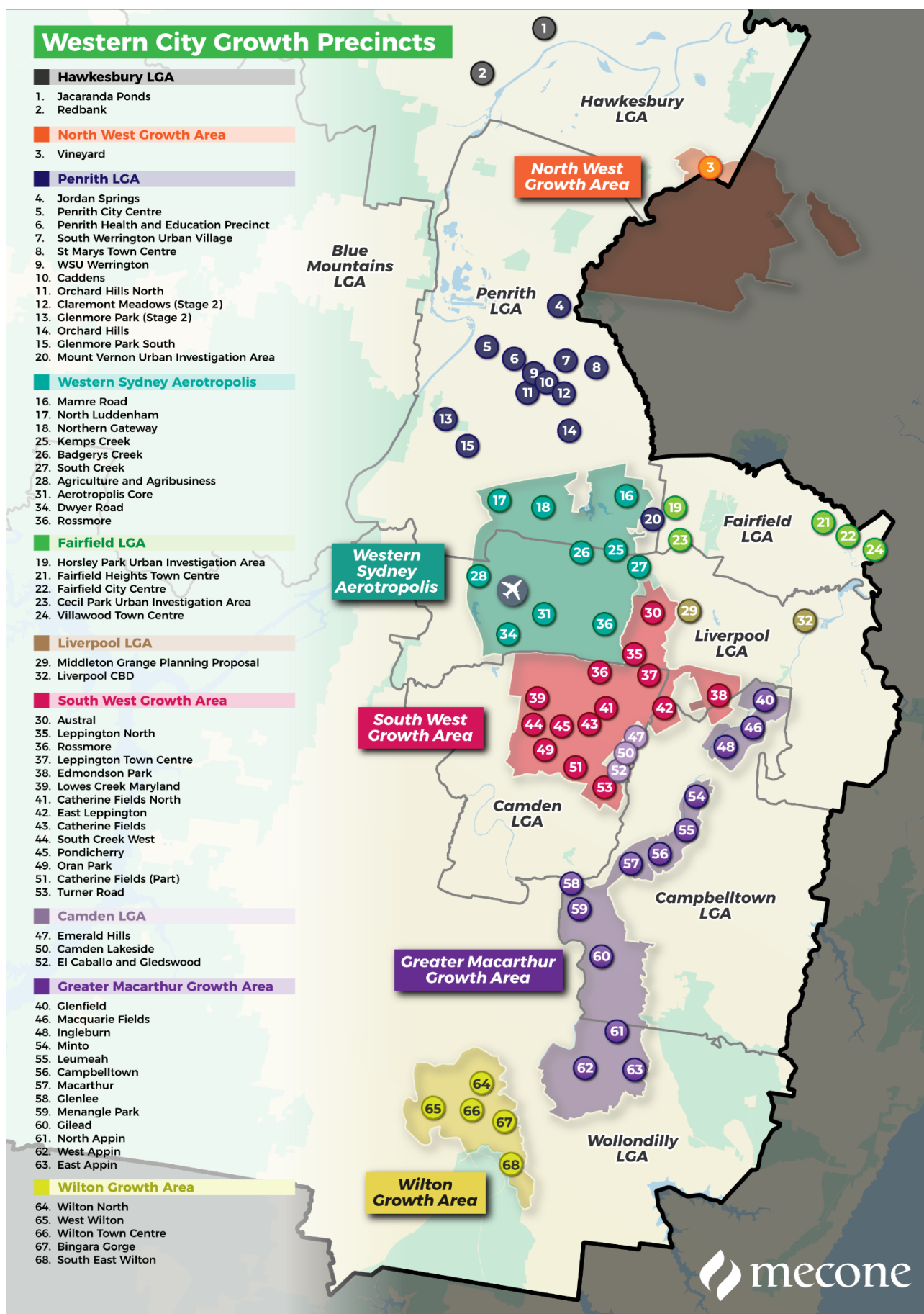
LGA	Total Planned Supply	Remaining Planned Supply*
Blue Mountains	550	485
Camden	84,382	71,714
Campbelltown	39,230	36,749
Fairfield	25,430	25,430
Hawkesbury	8,894	8,894
Liverpool	99,271	93,646
Penrith	65,425	65,299
Wollondilly	35,000	34,300
Western City	358,182	336,517

*after deducting dwellings already completed

Source: Various – see References

A detailed list of each Growth Area, Planned Precinct and Investigation Area is contained at Table S1-1 in Schedule 1.

Figure 5.1: Growth Areas, Planned Precincts and Investigation Areas, Western City District



Source: Mecone

5.3 Infrastructure Servicing Programme

The availability of essential services including water, sewerage and electricity is one of the key influencing factors of housing supply in the Western City. This is given the significant number of Growth Areas in the District which have not previously required services infrastructure given their existing uses (i.e. agricultural or large rural homestead uses).

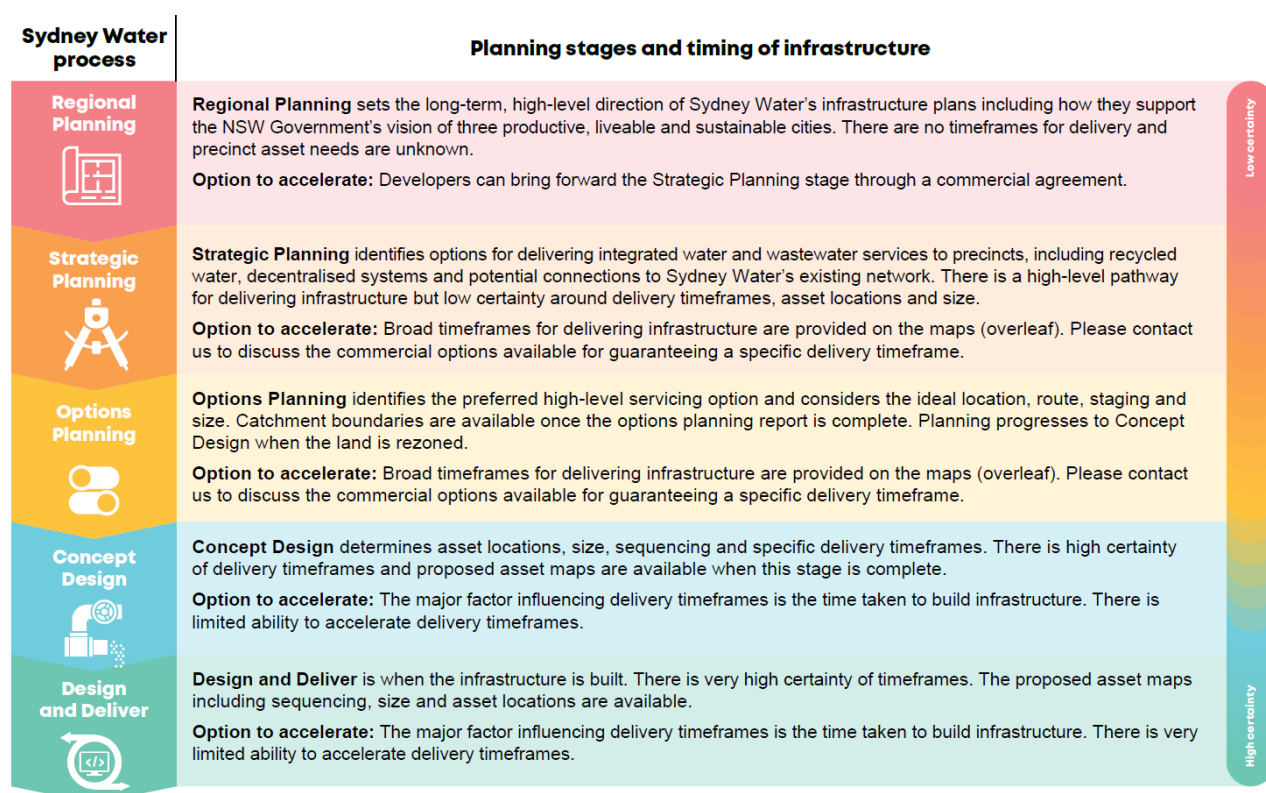
Water and Sewerage

The development and management of water and sewerage infrastructure across the Western City District is principally managed by Sydney Water. The Sydney Water Growth Servicing Plan 2020-2025 (the Servicing Plan) outlines proposed timelines for delivery of new water and sewerage infrastructure across Greater Sydney's Growth Areas.

The Servicing Plan outlines the status of water and sewerage infrastructure for each precinct across the Growth Areas through five main categories: Regional Planning, Strategic Planning, Options Planning, Concept Design and Design and Deliver. These categories reflect the certainty on infrastructure planning and delivery timeframes.

Figure 5.2 illustrates the various planning stages for water and sewerage infrastructure as defined by Sydney Water.

Figure 5.2: Water and Sewerage Planning Stages, Sydney Water



Source: Sydney Water (2019)

A review of the Servicing Plan (2020) shows that water and sewerage infrastructure is only expected to be operational in some precincts across the Western City's Growth Areas in the short-term. Austral and Leppington North are expected to be serviced by 2023 which will facilitate approximately 50% of the 15,557 dwellings planned in both precincts. The Aerotropolis's Northern Gateway and Aerotropolis Core precincts are expected to be serviced by 2022/23. Menangle Park is expected to be serviced by 2023, facilitating delivery of the 4,000 dwellings proposed.

The key precincts expected to be serviced for drinking and wastewater in the medium-term are those within the Western Sydney Aerotropolis, including many of Wilton's sub-precincts. These precincts are expected to have operational water servicing from 2025. These precincts are capable of accommodating 15,000 dwellings.

Table 5.12 describes the status and expected delivery timeframes of drinking water and sewerage infrastructure in the Western City's Growth Areas.

Table 5.12: Status of Drinking and Waste Water Infrastructure, Western City Growth Areas

Area	Drinking Water		Waste Water	
	Status	Delivery Timeframe	Status	Delivery Timeframe
North West Growth Area				
Vineyard (Stage 1)	Options Planning	FY2022-FY2026	Options Planning	FY2022-FY2026
Western Sydney Aerotropolis				
Aerotropolis Core	Options Planning	FY2022-23	Options Planning	FY2024
Northern Gateway	Options Planning	FY2022-23	Options Planning	FY2024
South Creek	Options Planning	FY2022-23	Options Planning	FY2024
Rossmore	Strategic Planning	Unknown	Strategic Planning	Unknown
South West Growth Area				
Lowes Creek Marylands	Design and Deliver	FY2022-23	Concept Design	Unknown
South Creek West	Design and Deliver	FY2022-23	Strategic Planning/ Concept Design	Unknown
Austral	Concept Design	FY2023	Concept Design	Dec-2021
Leppington North	Concept Design	FY2023	Concept Design Design and Deliver	Dec-2019 Dec-2021-22
East Leppington	Adequate existing capacity		Adequate existing capacity	
Oran Park	Adequate existing capacity		Adequate existing capacity	
Turner Road	Adequate existing capacity		Adequate existing capacity	
Edmondson Park	Adequate existing capacity		Adequate existing capacity	
Pondicherry	Design and Deliver	Unknown	Concept Design	Unknown
Rossmore South	Strategic Planning	Unknown	Strategic Planning	Unknown
Catherine Fields (part)	Adequate existing	Adequate existing	Adequate existing capacity	Adequate existing
Catherine Fields North	Strategic Planning	Unknown	Strategic Planning	Unknown
Catherine Fields	Strategic Planning	Unknown	Strategic Planning	Unknown
Greater Macarthur Growth Area				
Menangle Park	Options Planning	FY2023	Options Planning	FY2023
Gilead	Concept Design	Unknown	Concept Design	Unknown
North Appin	Strategic Planning	Unknown	Strategic Planning	Unknown
West Appin	Strategic Planning	Unknown	Strategic Planning	Unknown
Wilton (All Precincts)	Options Planning	FY2022-2030	Options Planning	FY2021
Glenfield to Macarthur	Strategic Planning	Unknown	Strategic Planning	Unknown
Other Areas				
Greater Penrith- Eastern Creek	Strategic Planning	Unknown	Strategic Planning	Unknown
Redbank (Hawkesbury)	Concept Design	Unknown	Concept Design	Unknown

Source: Sydney Water (2019)

Maps illustrating the status and timing of water infrastructure across the Growth Areas are included at Appendix 1.

Electricity

The primary supplier of electricity network service provider in the Western City District is Endeavour Energy. Timing of upgrades to the existing network is aligned with the Sydney Water servicing plan. Upcoming upgrades to the network required to meet future residential and employment demand are outlined in the Endeavour Energy Growth Servicing Plan 2019-2024 and Distribution Annual Planning Report 2019.

Key projects required to facilitate residential growth in the Western City District include:

- The Menangle Park zone substation to support residential and employment growth in Menangle Park. Expected to be completed by 2021/2022. This will support the 4,000 dwellings planned.
- The South Leppington zone substation will be required to support residential development in the Leppington Town Centre/ Leppington precinct. Expected to be completed by 2021/2022. This is needed for the >9,000 dwellings planned.
- The Southern Macarthur 66kV Network to support broader electricity supply in the Macarthur and South West region; expected to be progressively completed over 2023-2025. This will be needed to support the additional dwelling capacity (circa 17,000 dwellings) to be unlocked in the Glenfield to Macarthur Corridor.

Zone substations may require upgrading depending on development take-up (which is largely determined by water servicing timeframes): Penrith Lakes, Austral, Bringelly, North Catherine Fields, Rossmore, North Rossmore and Kemps Creek.

Maps of existing and proposed substations across the Western City District are appended at Appendix 2.

5.4 Short-Term Dwelling Forecasts

The NSW DPIE carries out 5-year housing supply forecasts at the suburb and local government area level for the Greater Sydney region. The forecast is based on several factors:

- The current development pipeline (including DAs under assessment, approved or under construction);
- Analysis of likely future development under current zoning and planning controls;
- Information from state and local government and industry; and,
- Factors reflecting the outlook for housing demand and market conditions.

The 2020 forecast (released in December 2020) has taken into consideration the impacts of the COVID-19 outbreak and includes three scenarios that respond to the uncertainty resulting from the pandemic. These include:

- **Central Base Case:** reflects the market conditions and demand factors at the time of the forecast in October 2020.
- **High Growth:** reflects a faster recovery and improving conditions that are more favourable to housing development.
- **Low Growth:** reflects a slower recovery and more subdued conditions that are less favourable to housing development

Under the Central Base Case Scenario, the Western City is expected to deliver some 30,050 dwellings over the five years to 2025, averaging around 6,010 dwellings per annum. These forecasts are summarised in **Table 5.13**.

Table 5.13: DPIE Supply Forecasts (2020-2025), Western City

LGA	High Growth Scenario	Central Base Case Scenario	Low Growth Scenario
Blue Mountains	450	450	450
Camden	7,300	6,900	6,850
Campbelltown	4,800	4,550	4,400
Fairfield	2,400	2,300	2,250
Hawkesbury	600	600	600
Liverpool	8,000	7,200	6,200
Penrith	6,950	6,850	5,450
Wollondilly	1,250	1,200	1,200
Western City	31,750	30,050	27,400

Source: DPIE (2020)

6. Supply Capacity Assessment

A common misconception is that if land is zoned for urban uses it will be developed. In practice, this can be far from reality as the development potential of land is collectively influenced by environmental, market or economic constraints that can together impede development. This is directly observable in precincts in the SWGA (e.g. Leppington, Austral) where despite being zoned for urban development, it has not occurred. Other precincts such as Menangle Park and Gilead were identified for urban development decades ago but misalignment with infrastructure servicing has resulted in these precincts only now being progressed with servicing infrastructure being delivered by the landowners.

The capacity of urban land for new development is two-fold: Planning Capacity and Market Capacity.

- **Planning (Theoretical) Capacity** refers to the physical ability of land to be developed, taking into account permissibility under the planning framework, environmental and infrastructure constraints and other factors.
- **Market Capacity** refers to issues of commercial viability whether pricing levels, market acceptance/ attitudes, development costs, etc. make development a commercial proposition, i.e. if development is financially feasible.

This section investigates Market Capacity across the Western City over the coming decades to 2041.

6.1 Methodology and Approach

Housing supply forecasts are carried out at the precinct level (i.e. Growth Area, Planned Precinct, Investigation Area) and then collated by housing market area, LGA and District.

The assessment of the sufficiency of housing capacity in the Western City District is made using the following methodology:

- Calculate the remaining number of dwellings required to meet DPIE implied dwelling requirement of 658,000 dwellings by 2041 (by deducting the estimate of existing dwellings at Q4 2020). This is 'Remaining Dwelling Need'.
- Forecast take-up of **greenfield development** opportunities in the District's Growth and Investigation Areas based on:
 - Planned existing services infrastructure and future servicing programme.
 - Proximity to existing and future transport infrastructure and employment precincts.
 - Land ownership patterns and lot fragmentation.
 - Observed take-up rates in existing and greenfield precincts on the market.
- Carry out high-level feasibility testing in the District's major centres (Liverpool, Penrith, Campbelltown, Fairfield) to assess the likely take-up of **infill development** opportunities.
- Forecast take-up of infill growth in the District's existing centres and urban areas based on:
 - High-level development feasibility assessment of planning interventions implemented or proposed.
 - Assessment of market acceptance/ resistance to higher density living.
- Forecast take-up of dwelling growth elsewhere in the District by applying a nominal growth factor based on historical rates (2006-2016).
- Sum the housing supply forecasts by LGA and compare against the estimated Remaining Dwelling Need.

6.2 Remaining Dwelling Need

Based on future population and household growth in the Western City, it is estimated that under DPIE's Low Scenario population projections that there will be a need for approximately 658,000 dwellings by 2041. The assessment of existing supply in section 5.1.3 estimated that as at Q4 2020 there were about 393,000 private dwellings in the Western City.

By deducting the number of existing dwellings in the Western City against the implied dwelling requirement for 2041, a Remaining Dwelling Need of 265,000 dwellings is calculated. This equates to some 12,619 additional dwellings per annum (on average) over the next 21 years to 2041, at an average annual growth rate of 2.5%.

Figure 6.1 illustrates the how the remaining dwelling need to 2041 was calculated for the Western City District.

Figure 6.1: Remaining Dwelling Need, Western City District (2021-2041)



Source: Atlas

6.2.1 Take-Up of Greenfield Development

The Study undertakes a comprehensive assessment of the deliverability of development opportunities at a precinct-by-precinct level in Greenfield areas. Detailed examination is made of:

- The availability of services infrastructure and utility providers' timeframes for delivery.
- Lot and ownership patterns.
- Historical rates of take-up in existing/ ongoing subdivisions.

The assessment finds that in many precincts, despite planned supply, deliverability is challenged and unlikely to be delivered in the near term due to various constraints. The detailed precinct-by-precinct assessment is contained in Schedule 2.

The assessment finds that the scale and pace of greenfield development opportunities is hampered by:

- **Long lead-in times to availability of services infrastructure**

It is not uncommon for a mismatch between delivery of services infrastructure, for example electricity infrastructure may be available in 2021 but options planning for water services infrastructure may only commence in 2023 (delivery to occur some years after that).

- **Lot fragmentation in precincts**

Lot and ownership fragmentation makes site consolidation and large scale development difficult. For example, despite having been rezoned since 2013, there has been only limited development at Austral and Leppington North.

These challenges associated with take-up in greenfield areas have serious ramifications for overall housing supply in the Western City given the nature and scale of the housing role which is planned for these areas.

6.2.2 Feasibility of Infill Development

Generic feasibility assessments have been carried out in a select number of centres across the Western City to ascertain the likelihood of development under existing and/or proposed controls. The centres selected for testing include Liverpool, Penrith, Ingleburn, Campbelltown, Macarthur and Fairfield.

Where specific schemes are not available, feasibility testing is carried out in generic terms only and based on a desktop review of existing land values and development site values, also referred to as Residual Land Values (RLV).

The Residual Land Value (RLV) can be defined as the maximum price a developer would be prepared to pay for a site in exchange for the opportunity to develop the site, whilst achieving target hurdle rates for profit and project return. The residual value must be of a sufficient amount to encourage an owner to sell and/or displace the current use of the land. For development to be viable, the Residual Land Value of a development opportunity must exceed the 'as is' value of the land.

Assumptions in Aggregate

Feasibility testing relies on an assessment of aggregate 'as is' property values in the various centres. Different environmental conditions will influence the developability of land, ultimately influencing the value of the site. It is not the intention of the analysis to assess the land values at a fine grain, rather to make observations that can be aggregated at a centre-wide level.

Notional Development Scenarios

Where specific schemes are not available, the feasibility analysis is predicated on a hypothetical 2,000sqm site with the key variables being adopted land cost and density controls. This analysis, commonly referred to as 'tipping point analysis', allows for a high-level assessment of the density required for different sites in the centres to become viable redevelopment opportunities. Findings are then compared against planning controls (either existing or proposed) in each centre to ascertain the likely take-up of development opportunities and inform take-up forecasts.

It is not the intention of the feasibility to quantify the *quantum* of dwellings which could be delivered in each centre. Rather, the feasibility assessment is undertaken to inform assumptions used in forecasting infill housing supply across the District.

Development Feasibility Assessment

Liverpool City Centre

The Liverpool City Centre was formally rezoned from B3 Commercial Core to B4 Mixed Use in September 2018, facilitating capacity for approximately 10,000 dwellings. The Liverpool City Centre also forms part of the broader Liverpool Collaboration Area (which includes parts of Warwick Farm and Moorebank) which has capacity for some 18,800 dwellings.

Density controls across the Liverpool City Centre vary. In the R4 High Density Residential zone along the periphery of the centre, permitted densities range from FSR 1.5:1 to FSR 2:1, although greater densities (up to FSR 3:1) are permitted if minimum lot size requirements are achieved. Throughout the majority of the centre which is zoned B4 Mixed Use, permitted densities range from FSR 2.5:1 to FSR 3:1 although bonus floorspace up to FSR 10:1 are also achievable. Bonus density controls are largely based on location with the City Centre defined into four distinct areas known as Area 7, 8, 9 and 10.

The City Centre is characterised by a mix of building typologies and land uses; single storey, fine grain shop front buildings characterise uses along Macquarie Street and the area immediately west of the train station. Larger, two storey commercial buildings are interspersed throughout the Centre, with car showrooms located along Macquarie Street on the southern edge of the Centre. Single storey detached houses and aged, two storey unit blocks are observed on the periphery of the Centre.

A review of existing property values throughout the City Centre along with recent development site sale evidence has been undertaken and applied in a high-level feasibility analysis. The results of this analysis is summarised in **Table 6.1**.

Table 6.1: Summary of High-Level Feasibility Assessment, Liverpool City Centre

	R4 High Density Residential Zones		B4 Mixed Use Zones	
Base FSR	1.5:1, 2:1		2.5:1, 3:1	
Bonus FSR	3:1, subject to additional provisions ¹		10:1, subject to additional provisions ²	
Location	Periphery of the City Centre to the west, north and south of the B4 Mixed Use zone.		Majority of the City Centre (referred to as Area 7 and Area 8 in Liverpool CBD), including the main thoroughfares of George, Macquarie, Scott and Moore Street.	
Existing Improvements	Primarily aged, 2-3 storey unit blocks with small pocket of single storey detached housing.		Mix of aged, fine grain shopfronts, large commercial buildings, car showrooms and aged, 2-3 storey unit blocks.	
'As Is' Values (\$/sqm site area)	\$2,500/sqm	\$3,500/sqm	\$3,750/sqm	\$6,500/sqm
As Is Value	\$5,000,000	\$7,000,000	\$8,000,000	\$13,000,000
Development Site Values (\$/sqm GFA)	\$800/sqm	\$850/sqm	\$850/sqm	\$1,000/sqm
Tipping Point FSR	3.1:1	4:1	4.2:1	6.5:1

R4 High Density Residential Zones		B4 Mixed Use Zones
Likelihood of Development	Sites improved with detached houses present most likely opportunities for redevelopment. High-density development at base density controls is unlikely to be viable for most sites.	Fine grain commercial buildings unlikely to be developed given high cost of site consolidation. Larger commercial buildings within Area 8 more likely to be developed, particularly those with access to bonus FSRs.

Notes:

1 - Site must exceed 2,500sqm in site area, otherwise floorspace is calculated by (2+X:1) where X = site area-1,000/1,500

2 - Site must fall in Area 8, have a lot size exceeding 1,500sqm and have at least two street frontages

Source: Atlas

Penrith City Centre

The Penrith Urban Design and Public Benefit Analysis identified 11 Key Sites for redevelopment within the Penrith City Centre that could theoretically yield a total of 4,000 dwellings. This represents approximately 45% of the almost 9,000 dwellings which could be potentially delivered in the Penrith City Centre as identified in the Penrith Local Housing Strategy (Ethos Urban, 2019). Four of the Key Sites are zoned B3 Commercial Core with residential uses not permitted in this zone.

Of the seven Key Sites zoned for residential uses, four are currently being progressed for development (three having DA approval). These are: 39-49 Henry Street (205 dwellings), 634-638 High Street and 87-93 Union Street (187 dwellings) and 164 Station Street (570 dwellings). Development planning for the three remaining sites has yet to occur.

A high-level feasibility assessment of the Key Sites in the Penrith City Centre yet to be progressed for development has been undertaken and summarised in **Table 6.2**.

Table 6.2: High-Level Feasibility Assessment, Penrith City Centre Key Sites

Key Site	Address	Planning Controls	Description	Likelihood of Redevelopment
4	1 Kendall St 183-187 High St	B4 Mixed Use Base FSR 3.5:1 Bonus FSR 5:1	Two existing fast-food outlets (Red Rooster and McDonalds) located at eastern entrance of the City Centre.	Incentive FSR 5:1 is feasible. The investment value of both existing assets is the major determinant of future redevelopment on the Site.
5	122-160 Station St 93-101 Woodriff St	B4 Mixed Use Base FSR 1.5:1 Bonus FSR 2:1	Single level shopping centre known as the Nepean Village (owned by Vicinity Centres) comprising 23,000sqm GLAR.	Most recent valuation of the site in June 2019 identified at \$207m. Accordingly, redevelopment of the Site existing FSR is not considered feasible.
11	184-192 Lord Sheffield Cct	B2 Local Centre No Base FSR Bonus FSR 5:1	Vacant site forming part of the Thornton development precinct immediately north of Penrith train station.	Site is held in single ownership with future development anticipated as the later stages of the Thornton precinct are progressed. FSR control is feasible.

Source: Atlas

Based on the high-level findings observed from the analysis undertaken, it is considered likely that not all of the potential 4,000 dwellings across the various Key Sites in the City Centre will be delivered given the nature of existing land uses.

Beyond the Key Sites, the remainder of the Penrith City Centre (zoned B2 Local Centre and B4 Mixed Use) is subject to density controls ranging from FSR 1.5:1, FSR 2:1 and up to FSR 3.5:1. The majority of the City Centre is subject to a density control of FSR 3:1, including the main thoroughfare of High Street. These areas are predominantly improved.

A desktop review of market activity in the City Centre indicates a dearth of recent sales activity. Historical sales rates are indicative of land values ranging from \$1,500/sqm to \$3,500/sqm of site area for larger commercial buildings (in excess of 1,000sqm in overall site area), whereas smaller shop front buildings on fine grain allotments have achieved sale prices analysing to \$6,500/sqm to \$7,500/sqm of site area.

Based on development site values in the Penrith region, larger commercial buildings in the City Centre will in most instances be feasible at density controls of FSR 3:1. Sites with land values in excess of \$3,500/sqm of overall site area will likely require densities in excess of FSR 4:1. This has implications for the viability of development throughout much of the City Centre, particularly along High Street where the majority of sites are fine grain in nature and are highly valuable.

The Glenfield to Macarthur Urban Renewal Corridor represents one of the largest urban renewal projects in the Western City. Of the circa 17,000 dwellings expected to be theoretically realised upon implementation of new planning controls, around 11,500 dwellings, or almost 70%, are expected to be delivered in the centres of Ingleburn (3,200 dwellings), Campbelltown (3,600 dwellings) and Macarthur (4,700 dwellings). Accordingly, the commercial viability of development in these centres will be critical to the success of the Corridor.

Existing land uses and land values differ across these three precincts. The Ingleburn centre is characterised by a small cluster of aged commercial and shopfront buildings and single storey, older style detached houses. The Campbelltown centre is one of the largest commercial, retail and civic hubs in the Western City with a variety of existing land uses and building typologies including fine grain shop fronts, larger commercial buildings, large format retail showrooms and detached housing. Macarthur is dominated by the Macarthur Square shopping centre along with large format retail buildings and showrooms.

Implementation of the planning controls proposed in the Glenfield to Macarthur Corridor Strategy and various Precinct Plans is staged. The initial precinct to be progressed is Ingleburn with a planning proposal submitted by Campbelltown City Council in February 2020 to rezone the precinct in line with the Ingleburn Precinct Plan currently under assessment.

A high-level feasibility assessment of the Ingleburn, Campbelltown and Macarthur Precincts has been undertaken in **Table 6.3** based on the density controls proposed in the Ingleburn Planning Proposal (Campbelltown City Council, 2020) and Campbelltown and Macarthur Precinct Plans (DPIE, 2017).

Table 6.3: Summary of High-Level Feasibility Assessment, Ingleburn, Campbelltown and Macarthur

	Ingleburn			Campbelltown			Macarthur
Existing Zone	B4	R4	R2	B4	R4	R3	B4
Proposed Zone	B4	R4	R4	B4	R4	R4	B4
Proposed FSR*	3.7:1 [#]	2.7:1	2.7:1	4:1	3:1	3:1	3:1
'As Is' Values (\$/sqm site area)	\$3,000	\$1,500	\$1,100	\$3,500	\$1,600	\$1,200	\$2,500
As Is Value	\$6,000,000	\$3,000,000	\$2,200,000	\$7,000,000	\$3,200,000	\$2,200,000	\$5,000,000
Site Values (\$/sqm GFA)	\$700/sqm	\$750/sqm	\$750/sqm	\$750/sqm	\$800/sqm	\$800/sqm	\$800/sqm
Tipping Point FSR	4.3:1	2.0:1	1.5:1	4.7:1	2.0:1	1.5:1	3.1:1
Likelihood of Development	Development unlikely to occur in the B4 zone unless large sites can be economically acquired. Development in the existing R2 and R4 zones more likely.			Similar to Ingleburn, development in the existing B4 zone is challenging given high existing land values. Development in the R3 and R4 is considered viable.			Development in the B4 zone is marginal and contingent on the value of existing large format retail buildings.

*Based on estimate of equivalent FSR controls from building height controls

[#]Includes a minimum non-residential density control of FSR 1.7:1

Source: Atlas

Based on the high-level findings observed from the analysis undertaken, it is highly unlikely that all of the 11,500 potential dwellings identified across Ingleburn, Campbelltown and Macarthur will be delivered.

Fairfield City Centre

Fairfield City Council commissioned a series of Urban Design studies over the course of 2017-2018 to investigate the capacity of the Fairfield, Fairfield Heights and Villawood centres to accommodate additional housing if changes to existing planning controls were permitted. The planning controls tested in the various Urban Design Studies have not been implemented into the Fairfield LEP, the intention to rather encourage landowners to submit planning proposals in line with the planning controls recommended by the studies.

In the Fairfield City Centre, a total of 12 Key Sites were identified with capacity for delivering an additional 3,440 dwellings based on a range of proposed planning controls. These Key Sites are large landholdings (ranging from 3,500sqm to 43,000sqm in overall site area) with many held in single ownership.

Of the 12 Key Sites identified in the Fairfield City Centre Urban Design Study (TPG, 2018) with potential for additional housing, one site is currently being progressed for development. This site (366 The Horsley Drive) has development approval for 280 apartments although construction is yet to commence.

To ascertain the likelihood of the Fairfield City Centre delivering the ~3,400 dwellings identified in the Fairfield City Centre Urban Design Study, a high-level feasibility assessment has been carried out for each Key Site as outlined in **Table 6.4**.

Table 6.4: High-Level Feasibility Assessment, Fairfield City Centre Key Sites

Key Site	Address	FSR Controls	Description	Likelihood of Redevelopment
1	8-36 Station St	Existing: 2.5:1 Proposed: 3:1	Large two storey enclosed mall (Fairfield Forum) located on the northern edge of the City Centre. Zoned B4 Mixed Use.	The landowner is preparing a planning proposal for development at FSR 3.5:1. Redevelopment of the Site in the short to medium term is likely.
2	1-29 Court Rd	Existing: 4:1 Proposed: 3.5:1	Large, aged enclosed mall (Neeta City) currently zoned B3 Commercial Core which does not currently permit residential uses.	The landowner is preparing a planning proposal for development at FSR 3.5:1. Redevelopment of the Site in the short to medium term is likely.
4	56-62 Court Rd	Existing: 3.5:1 Proposed: 4:1	Single storey building occupied by fast food retailer (McDonalds) with at-grade carparking. B4 Mixed Use.	The proposed FSR 4:1 is feasible. The occupancy arrangements of McDonalds will influence timing of future development.
5	311 The Horsley Dr	None	Large site held in single ownership used for industrial uses, specifically food manufacturing. Zoned B6 Enterprise Corridor. Site is understood to be heavily constrained.	Urban Design Study did not recommend specific controls given the level of detailed urban design analysis required. Feasibility of the site is contingent on these studies although a mixed-use development would likely be viable in the short to medium term.
6	291-303 The Horsley Dr	None	Large site used for industrial uses improved with several strata-titled warehouse buildings. B6 Enterprise Corridor. Site is understood to be constrained by environmental, flooding and traffic issues.	Urban Design Study did not recommend specific controls given the level of detailed urban design analysis required. Feasibility of the site is contingent on these studies although a future redevelopment would be challenging given fragmented ownership.
7	11-11a Alan St	Existing: 3.5:1 Proposed: 3.5:1	Large site improved with a single storey tavern located on the eastern edge of the Fairfield City Centre. Zoned B4 Mixed Use.	No increase in density controls was proposed in the Urban Design Study. Unlikely to be feasible given the high value of the site in its existing use.
8	14 Anzac Ave 19-29 Vine St	Existing: 2:1-4:1 Proposed: 2.5:1 to 4:1	Large site located south of Fairfield train station occupied by the Fairfield RSL. Zoned B4 Mixed Use.	Parts of the site was recommended for an increase in density under the Urban Design Study. Unlikely to be feasible due to high value of the site in its existing use.
9	1-3 Hamilton Rd 11 Railway Pde	Existing: 2:1 Proposed: 4:1	Large site including a double storey tavern and an aged single storey commercial building owned by Fairfield City Council. B4 Mixed Use.	Redevelopment in the short to medium term could be viable although this would be contingent on existing tavern and if Council were willing to divest of the adjoining site.
10	11-17 Kenyon St 25 Barbara St 36a-42 Harris St	Existing: 2:1 Proposed: 4:1	Large site including a mix of land uses including a Council-owned carpark, low rise commercial buildings and vacant Crown land. B4 Mixed Use.	Given the highly fragmented nature of land tenure and importance of Council's existing carpark, redevelopment is considered unlikely in the short to medium term.
11	11 Barbara St 5, 5a, 8 Kenton Ln	Existing: 2:1 Proposed: 4.5:1	Centrally located site comprising large commercial building.	Proposed FSR 4.5:1 is considered feasible with development possible in short term.
12	73-75 Ware St	Existing: 4:1 Proposed: 5:1	Centrally located site comprising large commercial building.	Proposed FSR 5:1 is considered feasible with development possible in short term.

Source: Atlas

Based on the high-level findings observed from the analysis, it is considered likely that not all ~3,400 dwellings identified in the Urban Design Study will be delivered given the variety of constraints impacting some of these sites.

Summary of Feasibility Analysis

Some of the centres examined are undergoing a transition to more intensive uses brought about by increased development and investment activity. Penrith and Liverpool centres in particular have been the beneficiary of high density development with market attitudes towards high density living observed to be shifting.

Notwithstanding the shift in market attitudes towards high density living and development interest in the Western City's centres, development feasibility is still challenging in many of these centres.

As is evident from the feasibility analysis results, the feasibility of higher density development (under current and proposed planning controls) varies between centre, influenced by the following key factors:

- **Existing uses and values**

Where numerous lots are required for consolidation, the payment of incentives over and above market value is often required to incentivise individual landowners to sell.

It is an unfortunate reality that site consolidation is a high-risk and costly exercise. Consolidation of sites in multiple ownership can be cost-prohibitive unless there is notable planning upside (i.e. where planning controls are amended).

Most of the centres have fine grain lot patterns. In some instances, redevelopment into higher densities is sufficient to displace existing uses (enabling site consolidation) however landowner objectives are not always financial in nature and do not always align to enable development.

- **Development typology and construction cost**

The cost of construction increases as buildings become taller. Service requirements specify that more lifts are required so that vertical transportation times are not compromised. Service shafts and fire escapes too are correspondingly wider in taller buildings.

Tall buildings will only be developed in locations where the increased cost of construction (taller buildings and more basement levels) can be offset with higher revenue levels. Accordingly, residential towers are not feasible in all markets.

Table 6.5 outlines the potential cost and venue differential as buildings become taller. For comparison purposes, indicative revenue potential in the Parramatta CBD is also provided.

Table 6.5: Indicative Cost v Revenue Comparison

No. of Storeys	Western City (\$/ sqm)		Parramatta LGA (\$/ sqm)	
	Avg. Cost	Avg. Revenue	Avg. Cost	Avg. Revenue
<3 storeys	\$1,800-\$2,400	\$4,000-\$6,000	\$1,800-\$2,400	\$6,000-\$8,000
Multi-storey	\$2,400-\$4,000	\$6,000-\$9,000	\$2,400-\$4,000	\$8,000-\$14,000

Source: Atlas

The cost of building construction is not too dissimilar across Sydney. Medium density dwellings are a relatively cost-effective typology to deliver, offering more living space than a unit and more economical to construct (i.e. without the need for basement carparking). Notwithstanding, the cost of site consolidation is often the largest impediment to large scale development of medium density dwellings in established areas. In many centres, the prices paid to consolidate sites requires a higher density response (higher than medium density) for development to be viable.

- **Effective demand for higher density product**

Residential markets are diverse. Market acceptance for higher density product is established within most inner ring suburbs of Sydney. In these areas, end sale prices of completed product justify higher construction costs.

Effective demand (rather than underlying demand) is the principle that is relevant for market demand. Households must be able and willing to pay for housing, which in turn underpins the type of development the market can respond with.

While market attitudes in the Western City are also shifting and smaller residential product is enjoying growing market acceptance prices achieved for residential units are nevertheless limited by prices paid for detached/ attached dwellings. For example, if a 3 bedroom detached dwelling is available for say \$550,000, it is unlikely a 3 bedroom unit will be able to achieve to same level of pricing. This is observed in and around all the centres examined.

The findings of the high-level feasibility analysis in the centres of Liverpool, Penrith, Ingleburn, Campbelltown, Macarthur and Fairfield show that it is unlikely that all planned housing supply for these centres will eventuate. Existing-use values, fine lot patterns and ownership fragmentation (all which are supply-side issues) are modest end sale values and market attitudes (demand-side issues) are all significant challenges for new development to overcome.

There is considerable development activity in the Western City's existing urban areas and centres, however is mostly confined to areas where existing buildings are nearing the end of their economic useful lives, where planning upside has been significant or where vacant blocks of land are available or in majority ownership/ control.

The feasibility analysis findings are used to inform dwelling forecasts for various urban centres across the Western City.

6.3 Dwelling Forecasts

The Study undertakes dwelling forecasts at a precinct level and then aggregates the forecasts by respective LGA across the Western City. Forecasts are carried out on a year-by-year basis and summed into five-year forecast periods.

The forecasts indicate that a total of just over **147,000** dwellings could be delivered over the coming decades to 2041. These dwelling forecasts reflect the *total* dwellings rather than *net* dwellings (net dwellings would account for existing housing which is demolished for the purposes of new development which was not considered in the housing forecasting).

These forecasts are underpinned by several factors including the timeframes for land release and rezoning, infrastructure servicing timeframes, known and observed ownership patterns, market attitudes and the feasibility of development.

Table 6.6 summarises the housing forecasts for each LGA within the Western City over the 2021-2041 period.

Table 6.6: Dwelling Forecasts (2019-2041), Western City

LGA	Forecast Period					Remaining Capacity		
	2021	2021-2026	2026-2031	2031-2036	2036-2041	2021-2041	No.	% of Total
New Dwellings (No.)								
Blue Mountains	100	350	-	-	-	450	-	0.0%
Camden	1,150	8,635	7,184	6,545	6,270	30,359	44,533	62%
Campbelltown	1,287	6,835	7,612	6,518	4,180	26,432	12,720	35%
Fairfield	200	1,949	2,783	2,565	2,530	10,027	16,685	66%
Hawkesbury	182	1,683	2,167	1,393	193	5,617	3,788	43%
Liverpool	1,100	8,399	7,469	6,283	5,561	29,472	69,445	74%
Penrith	680	6,180	8,338	7,182	7,216	29,596	38,008	58%
Wollondilly	630	4,131	3,804	3,510	3,030	15,105	22,025	64%
Western City	5,329	38,163	39,357	33,994	28,980	147,058	207,204	100%
Average Annual Dwelling Supply (No.)								
Blue Mountains	100	70	-	-	-	21		
Camden	1,150	1,727	1,437	1,309	1,254	1,446		
Campbelltown	1,287	1,367	1,522	1,304	836	1,259		
Fairfield	200	390	557	513	506	477		
Hawkesbury	182	337	433	279	39	267		
Liverpool	1,100	1,680	1,494	1,257	1,112	1,403		
Penrith	680	1,236	1,668	1,436	1,443	1,409		
Wollondilly	630	826	761	702	606	719		
Western City	5,329	7,633	7,871	6,799	5,796	7,003		

Source: Atlas

Key findings from the dwelling forecasts outlined in **Table 6.6** are detailed below:

- Overall, the dwelling forecasts indicate that the Western City could deliver (on average) just over 7,000 dwellings per annum over the next 21 years to 2041. This is lower than the rate of average annual growth (8,122 dwellings) in the most recent past (2016-2020) when Sydney's residential markets experienced peak investment conditions.
- The greatest number of new dwellings is forecast over the 2026-2031 period with a total of 39,357 dwellings at an average annual rate of 7,871 dwellings. Dwelling growth is forecast to taper from 2031; forecasts of ~6,800 dwellings over 2031-2036 and ~5,800 dwellings per annum over 2036-2041.
- The vast majority of new dwellings forecast to be delivered across the Western City is expected in the Camden, Penrith and Liverpool LGAs which account for about 60% of the ~147,000 forecast dwellings to 2041. Campbelltown is the other key source of new housing to 2041 at almost 18% of total forecast supply. Unsurprisingly, the peri-urban Hawkesbury and Blue Mountains LGAs are forecast to account for just 4% of new supply to 2041.
- Based on the forecast supply of 147,00 dwellings over the 2021-2041 period, there remains a Theoretical Capacity of 207,200 dwellings across the Western City which could be delivered post-2041. The majority of this remaining capacity is located within greenfield precincts within the Liverpool, Camden, Penrith and Wollondilly LGAs.

Dwelling forecasts by individual precinct and LGA are included at Schedule 2.

It is important to differentiate dwelling forecasts by development type given take-up rates for each development type differ accordingly. Three development types have been defined in the dwelling forecasts - greenfield, infill and undefined.

- **Greenfield** development refers to new housing in non-urban areas. Take-up of greenfield development is principally determined by agreement from various Government agencies to the development, availability of services infrastructure and nature of surrounding transport connections.
- **Infill** development refers to new housing in existing urban areas and often involves intensifying existing residential areas with denser forms of housing (townhouses, apartments). Market factors and development feasibility are the principal determinants of take-up of these forms of development.
- Not all future supply across the Western City is defined in local strategic planning policies or in the existing development pipeline. Development is expected to continue to occur as permitted under existing planning controls (e.g. dual occupancy, medium density, etc.). To account for this unspecified development, an additional quantum of supply referred to as **Undefined** has been included in the overall dwelling forecast. This could occur in either greenfield or infill areas.

The equivalent split between greenfield, infill and undefined housing in the housing forecasts is outlined in **Table 6.7**.

Table 6.7: Dwelling Forecasts (2021-2041) by Development Type, Western City*

LGA	Greenfield		Infill		Undefined		Total	
	No.	% of LGA	No.	% of LGA	No.	% of LGA	No.	% of LGA
Blue Mountains	-	0.0%	450	100.0%	-	100.0%	450	100.0%
Camden	28,181	89.5%	-	0.0%	3,178	10.5%	30,359	100.0%
Campbelltown	10,019	37.9%	14,010	53.0%	2,403	9.1%	26,432	100.0%
Fairfield	3,740	37.3%	5,005	49.9%	1,282	12.8%	10,027	100.0%
Hawkesbury	4,336	77.2%	770	13.7%	511	9.1%	5,617	100.0%
Liverpool	9,547	32.4%	16,121	54.7%	3,804	12.9%	29,472	100.0%
Penrith	12,674	42.8%	13,150	44.4%	3,772	12.7%	29,596	100.0%
Wollondilly	12,275	81.3%	-	0.0%	2,830	18.7%	15,105	100.0%
Western City	79,772	54.2%	49,506	33.7%	17,780	12.1%	147,058	100.0%

Source: Atlas

As shown in **Table 6.7**, greenfield development is expected to account for the majority of new housing across the Western City over the coming decades to 2041 with just over 54% of new dwellings. Infill development is expected account for around a third of new housing with the Liverpool, Campbelltown and Penrith LGAs to be the primary areas for future infill housing. Undefined development (which could be in either greenfield or infill areas) accounts for just over 12% of forecasted supply.

*The Study highlights that dwelling forecasts represent 'totals' rather than 'net new' dwellings. The forecasts do not account for where development results in demolition of existing dwellings. The demolition/ withdrawal of housing stock should rightfully be deducted from dwelling forecast totals before they are added to existing dwelling stock.

The implications of the housing forecasts undertaken for the Western City in the context of future demand projections are outlined next in Chapter 7.

7. Sufficiency of Housing Capacity in Western City

7.1 Housing Supply and Housing Demand

The District Plan housing targets for the Western City are:

- **Short-Term Target (2016-2021):** 39,850 additional dwellings.
- **Long-Term Target (2016-2036):** 184,500 additional dwellings.

The District Plan's long-term targets are superseded by recent population and dwelling projections released by the NSW Government (December 2019).

When using DPIE's Low Scenario population projections, analysis suggests a **need for a total of around 658,000 dwellings by 2041**. After deducting the census count of dwellings at 2016 (~356,000), an additional 302,000 dwellings would be required over the 2016 to 2041 period.

Remaining Dwelling Need after Accounting for Supply Completions in 2016-2020

By deducting estimated existing dwellings (393,000 dwellings at Q4 2020) against the implied dwelling requirement for 2041 of 658,000 dwellings, a Remaining Dwelling Need of 265,000 dwellings is calculated. To meet Remaining Dwelling Need, an average annual dwelling supply of 12,619 is required over the next 21 years to 2041.

Figure 7.1: Remaining Dwelling Need, Western City District (2019-2041)



Source: Atlas

We note that at the peak of dwellings completions in 2017-2018, annual completions were at 9,000 and 9,100 dwellings respectively. Average annual completions over the 2016-2020 period was around 8,100 dwellings. Even if peak completions (9,100 dwellings) were sustained from 2021 to 2041, a deficit would still result. We highlight that if the DPIE Main Series population projections (and implied dwelling requirement) was adopted, this shortfall would be even greater.

Each year completions fall short of the quantum of required dwellings, unmet demand grows and exacerbates the shortfall.

Over/ Undersupply of Dwellings (2020-2041)

The factors that influence housing supply capacity and housing demand were examined in Chapters 4 and 5. Dwelling completions peaked in 2017 and 2018 (9,100 dwellings and 9,000 dwellings respectively) commensurate with a peak in Sydney's residential market. Unsurprisingly completions fell in 2019 as sales experienced lengthy take-up periods and price discounting.

Following the onset of COVID-19, the residential market across the Western City, predominantly the detached housing market, is beginning to return to peak conditions. Even if investment confidence returns to peak levels (which could happen with time), dwelling completions will take some time before they return to peak levels of 2017 and 2018. Development activity is 'lumpy' in nature and will take time to re-mobilise.

Even at peak levels (9,000 dwellings) sustained to 2041, dwelling completions (9,000 x 21 years) would be insufficient to meet the Remaining Dwellings Need of 265,000. A housing shortfall (76,000 dwellings) would still result.

Dwelling forecasts indicate there will be a shortfall of just over 167,000 dwellings across the Western City by 2041. Whilst there is sufficient *theoretical* housing supply to meet projected demand for the Western City, supply forecasts indicate that only around 40% of this theoretical supply will be delivered by 2041.

Figure 7.2 summarises the forecast dwelling undersupply by 2041 after considering the deliverability and take-up of planned supply.

Figure 7.2: Dwelling Demand v Forecast Dwelling Supply (2041), Western City District



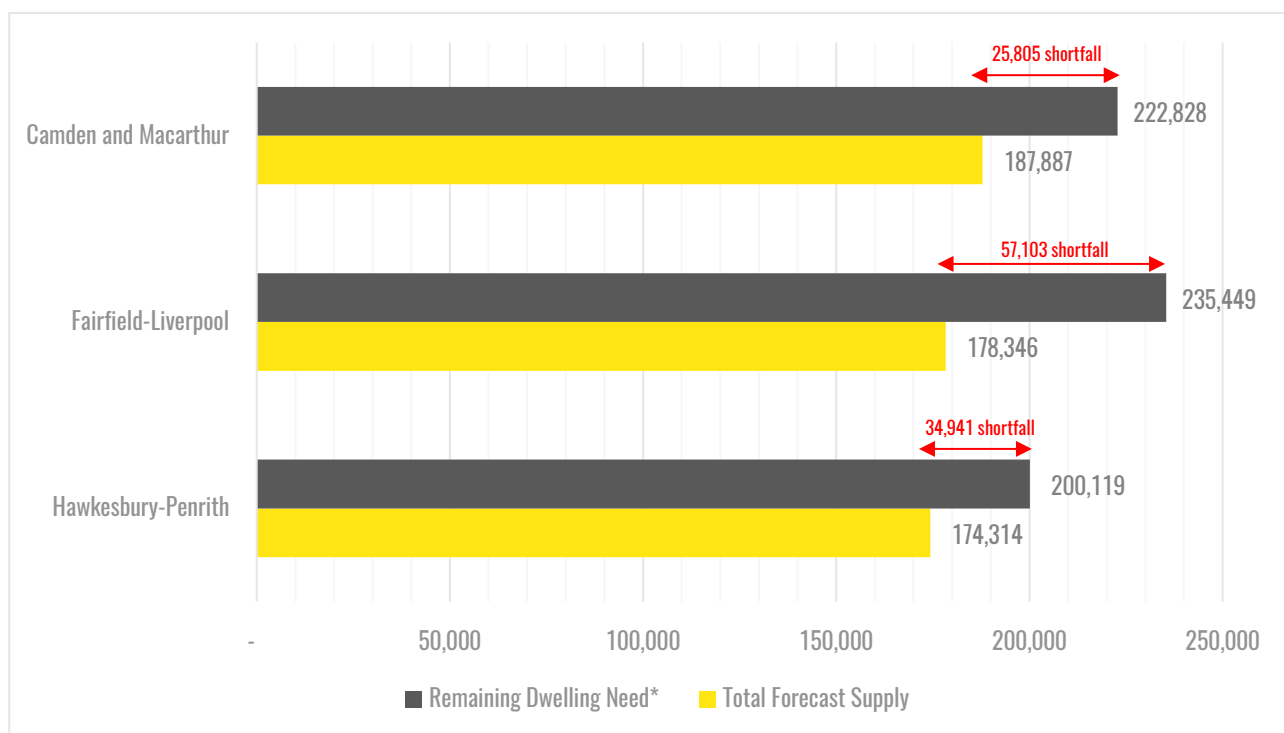
Source: Atlas

It is important to note that housing demand is not contained in a vacuum – unmet housing demand in one LGA will attempt to be met in comparable (often neighbouring) LGAs. In considering the capacity of the Western City to meet projected housing demand, the eight LGAs within the District have been grouped into three distinct housing market areas based on their comparable locational and market characteristics. These include:

- **Camden and Macarthur Housing Region:** Camden, Campbelltown and Wollondilly LGAs.
- **Fairfield-Liverpool Housing Region:** Fairfield and Liverpool LGAs.
- **Hawkesbury-Penrith Housing Region:** Blue Mountains, Hawkesbury and Penrith LGAs.

Figure 7.3 illustrates the assessment of housing demand and supply forecasts for the defined housing market regions within the Western City District with **Table 7.1** providing the detailed figures of the assessment.

Figure 7.3: Housing Demand and Supply Assessment (2020-2041), Western City District



Source: Source: Atlas/ DPIE (2019)

*Based on DPIE's Low Scenario population projections (2019).

Table 7.1: Housing Demand and Supply Assessment (2020-2041), Western City District

Market Region	Existing Dwellings (2020)	Remaining Need (2021-2041)	Forecast Supply (2021-2041)	Over/ Under Supply (2019-2041)	Remaining Capacity (2041+)
Hawkesbury-Penrith	138,550	200,119	35,764	-25,805	41,796
Blue Mountains	34,942	36,940	450	-1,548	-
Hawkesbury	25,004	30,337	5,617	284	3,788
Penrith	78,604	132,842	29,698	-24,540	38,008
Fairfield-Liverpool	138,817	235,449	39,529	-57,103	86,130
Fairfield	64,328	88,191	10,027	-13,806	16,685
Liverpool	74,489	147,258	29,472	-43,297	69,445
Camden and Macarthur	115,991	222,828	71,896	-34,941	79,278
Camden	36,780	105,129	30,359	-37,990	44,533
Campbelltown	61,027	88,462	26,432	-1,003	12,720
Wollondilly	18,184	29,237	15,105	4,052	22,025
Western City	393,358	658,396	147,189	-117,850	207,204

Source: Atlas/DPIE (2019)

Whilst there is adequate *planning* capacity across the Western City, not all of that capacity is deliverable.

Delays in the rezoning process and availability of services infrastructure are major impediments in Greenfield areas while in Infill areas, fragmented lot and ownership patterns challenge the deliverability of housing capacity. Market attitudes towards high density living and the availability of lower density housing options at relatively affordable prices constrain the supply of higher density dwellings.

7.2 Implications of Supply Shortfall

Adequate housing supply is essential to the vitality of Greater Sydney. It is no surprise that a lack of sufficient housing supply was one of the key factors attributed to Sydney's residential property boom over the course of 2012-2017. Not only is Greater Sydney the least affordable capital city in Australia (ANZ/CoreLogic, 2019), it has been consistently ranked as the third most unaffordable city globally, behind only Vancouver and Hong Kong (Demographia, 2021).

The market and economic impacts of a lack of adequate housing supply in the Western City are broad. Some of the key impacts which could conceivably result include:

- **Significant rises in residential property values** is arguably the most significant impact which would impact the Western City and further exacerbate growing housing affordability issues in the region. This would jeopardise the ability of the District to meet Planning Priority W5 of the Western City District Plan which seeks to improve housing affordability.
- A lack of adequately housing supply in the District's designated Growth Areas and Priority Precincts would invariably result in **pressure on existing non-residential land uses** as developers seek to meet market demand.
- Less than anticipated dwelling growth in the Western City would limit the expected economic benefits of the future **Western Sydney Airport** and **Western Sydney Aerotropolis** as a source for local employment.
- Inadequate housing supply in the Western City would inadvertently result in **spillover demand** to neighbouring Districts and regions as households seek alternative locations. A lack of supply in one area does not equate to a lack of demand; demand for housing is generally **inelastic** and fluid.

Overall, a lack of housing in the Western City has significant repercussions for the liveability and productivity of the broader Greater Sydney region. The reasons for the forecasted undersupply vary for each precinct although accessibility and timing for services infrastructure is arguably the key factor impeding the delivery of new housing.

7.3 Constraints to Planned Supply

The planning process is arguably a major impediment to the deliverability of planned supply across Greenfield areas. A lack of coordination between key stakeholders; local councils, State government, State government agencies and infrastructure authorities has historically resulted in major delays in decisions or frequent stoppages during the planning process. This issue can be directly observed across the Western City. For instance, precinct planning for the Lowes Creek Maryland originally commenced in 2009 with rezoning still possibly 12 months away. Similarly, Menangle Park and Gilead were identified for rezoning in the early 1980's with rezoning only occurring in 2019.

Largely linked to the process of planning and land release are the constraints to planned supply in greenfield areas posed by a lack of servicing infrastructure as explored in detail in section 5.3. Whilst this issue can be mitigated through the commercial delivery of key infrastructure through the PAP process, this option is typically limited to large developers with sufficient capital to forward fund infrastructure planning and delivery.

Equally important in understanding is the impact fragmented lot patterns and land ownership can have on the capacity of greenfield areas to be developed as envisaged.

The most prominent example of the impact fragmented lot and ownership patterns can have on housing delivery is observed in the Leppington North and Austral precincts of the SWGA. Despite being rezoned for urban development in 2013, very little take-up has occurred to date. This is largely attributed to the highly fragmented nature of both lots and ownership in the precincts, presenting significant difficulties for site consolidation. Highly fragmented precincts are difficult and expensive to amalgamate with developers instead focusing on large land parcels in other precincts of the SWGA.

To illustrate the fragmented nature of the Leppington North and Austral precincts, the composition of lot sizes in Austral, Leppington North and Oran Park prior to their release and rezoning are detailed in **Table 7.2**.

This shows that in Austral and Leppington North, the number of lots smaller than 3ha was more than 90%. By comparison, lots smaller than 3ha were around 60% of total lots in Oran Park whilst lots larger than 42ha accounted for almost 20% of all lots. In Austral and Leppington North, there were no lots larger than 18ha. This is directly related to the strong take-up of development opportunities in Oran Park to date compared to Leppington North and Oran Park.

Table 7.2: Lot Sizes in Austral, Leppington North and Oran Park

Size (ha)	Austral		Leppington		Oran Park	
	No. Lots	% of Total	No. Lots	% of Total	No. Lots	% of Total
<0.8	220	25%	87	12%	3	10%
0.8-3.0	615	70%	580	80%	16	50%
3.0-8.0	35	4%	44	6%	3	10%
8.0-18.0	9	1%	7	1%	3	8%
18.0-38.0	-	0%	-	0%	1	3%
38.0-42.0	-	0%	-	0%	0	0%
>42.0	-	0%	7	1%	6	19%
Total	879.0	100%	725	100%	32	100%

Source: Department of Planning, Infrastructure and Natural Resources (2003)

7.4 Conclusions and Recommendations

The outlook for growth in the Western City is good. Investment and delivery in road and rail infrastructure and the Western Sydney Airport positions the District on a new trajectory of growth.

A range of growth precincts have been identified for dwelling growth by state and local government, with these precincts at various stages of planning and delivery (from early investigations to rezoning).

Housing Capacity Issues

The Study forecasts a mismatch between housing demand and supply which will result in a supply shortfall of some **118,000 dwellings to 2041**. This would create further pressure on property prices, exacerbating the housing affordability issue.

Dwelling forecasts indicate that despite there being sufficient planned supply to meet projected housing demand across the Western City by 2041, only around 42% of this is likely deliverable by 2041. This is due primarily to:

- The lengthy timeframes of the planning process;
- The availability and delivery of services infrastructure in Greenfield areas; and
- Development feasibility issues in Infill areas driven by a combination of valuable existing uses, fragmented lot and ownership patterns and immature market attitudes towards higher density living.

Key Matters for Consideration and Recommendations

Given the majority of housing capacity is in Greenfield areas, the following matters are the focus of recommendations:

- **Additional land release for precinct planning and rezoning**
Investigation areas which have been earmarked for future residential and urban development have the potential to play a major mitigating role in the forecast undersupply of housing to 2041.
- **Services infrastructure capacity**
Not all rezoned precincts benefit from having immediate services infrastructure capacity. In many precincts there is only partial capacity for services. Attention to these precincts is needed particularly where there are lots suitable for large scale delivery and/ or where developer interest is keen.
- **Lot patterns and ownership fragmentation**
Critically, the issue of ownership fragmentation has a number of implications. The cost of infrastructure servicing is beyond the capability of many private landowners (highlighting the importance of developer participation), yet unrealistic owner expectations are not uncommon, making site assembly for developers difficult.

The issue of ownership fragmentation with environmental and other constraints can effectively hinder housing delivery. This issue is manifest in precincts such as Austral and Leppington North where despite being rezoned for urban development, development has only occurred on an incremental level. Precincts such as Edmondson Park, Oran Park, Turner Road and East Leppington are testament to the importance of majority ownership for large scale development.

At its simplest in economic theory, price in the market is determined by the dynamics of demand and supply. This would suggest the amount of available supply influences the price of housing.

Due to various housing capacity issues identified (site acquisitions and amalgamation, availability of services infrastructure, development consent), long lead-in times are generally associated with meaningful increase in dwelling supply in greenfield areas. Even though land is zoned for urban development it can be many years before housing is delivered on the ground.

In infill areas, services infrastructure is also constrained but generally requiring augmentation rather than trunk and lead-in. Market attitudes will take time to evolve and accept higher density living. Centres such as Liverpool and Penrith and to a lesser extent Campbelltown and Fairfield are already transitioning to becoming higher density mixed use centres.

Based on expected future population and especially considering the uncertainty surrounding deliverability of housing on Greenfield lands previously identified, an alternate growth scenario should be considered.

- **Prioritise and augment precinct planning**
The Study has observed the misalignment between planned housing supply and actual housing supply, evidenced by precincts where land is identified for growth but yet to be meaningfully planned so it can be developed.

- **Work with developers with significant landholdings to expedite planning and delivery of housing**
Supporting the release of more housing across through the Precinct Acceleration Protocol (PAP) process will be a vital step in addressing the current forecast undersupply of housing. Large sites held in majority ownership will be critical in facilitating new supply given the difficulty many existing precincts have faced in delivering new housing where land ownership is highly fragmented (e.g. Austral and Leppington North).
- **Bring forward release of Investigation Areas**
Given the large quantum of theoretical capacity unlikely to be delivered due to a lack of services infrastructure, it is important that opportunities to unlock further supply are investigated, and where found to be viable, prioritised.

The number of dwellings required to meet housing demand is significantly more than dwellings completed even at peak levels in 2017 and 2018. For each year that dwellings completed fall short, the greater the risk of compromise to the Western City's vision and missed opportunity to leverage the billions of dollars of public investment into the Western City District.

The development of an alternate growth scenario and in particular leveraging lands in majority ownership will facilitate certainty of future greenfield land supply. Importantly, the availability of housing product that is both diverse and sufficient in quantum to meet need will ensure the Western City's growth potential is able to be realised and that significant government investment committed to the region is leveraged for optimum economic benefit.

Areas for Focus

There are several precincts across the Western City which could be prioritised for development (through the PAP protocols) given they are held in single or majority ownership. Fragmented land ownership is identified as amongst the principal drivers behind poor take-up of development opportunities across the District's Growth Areas.

Given many of the issues facing housing delivery across the Western City are beyond the control of planning authorities (i.e. fragmented land ownership, development feasibility, etc), it is recommended that Government focus on prioritising the release and rezoning of precincts held in single or majority ownership. These precincts have the capacity to delivery housing in a timely manner and will be crucial in mitigating the shortfall of some 118,000 dwellings that could result by 2041.

Table 7.3 outlines key precincts held in majority ownership which, subject to detailed planning, could fast-track the delivery of new housing.

Table 7.3: Housing Precincts Held in Majority Ownership

Precinct	LGA	Planned Supply	Forecast (2041)	Description
WSU Werrington Precinct	Penrith	5,000	4,600	Large precinct being targeted for urban renewal. Held in majority ownership by two landowners. Potential for precinct planning to be fast-tracked subject to alignment with planning for future rail line.
Mt Vernon/Horsley Park Urban Investigation Area	Fairfield	5,000	-	Large rural precinct identified for future urban development. Large portion of the precinct is held in single ownership which expedite precinct planning.
Orchard Hills South	Penrith	25,000	1,400	Significant precinct zoned for rural uses. Large portion of the precinct is government-owned which could expedite precinct planning.
North Appin/ West Appin	Wollondilly	20,000	-	Two significant precincts currently zoned for rural land uses held in majority ownership by three landowners.

Source: Atlas

The North Appin, West Appin and Orchard Hills South precincts could alone potentially deliver an additional 45,000 dwellings. The North and West Appin precincts in particular are prime candidates for expediting given they are held in single ownership and unlikely to face the same level of environmental constraints at Orchard Hills South.

Realignment of Housing Targets with Supply Capacity

Compared against the number of dwellings required by 2041 under DPIE's Low Scenario population projections, the Study forecasts a supply shortfall in the order of **118,000 dwellings**. When compared against housing targets in the District Plan, the Study forecasts a shortfall of some **67,000 dwellings by 2036**. Both these shortfalls result from a 'No Intervention' scenario.

Table 7.4 summarises dwelling demand projections and the Study's dwelling forecasts for each housing market area.

Table 7.4: Summary of Dwelling Projections and Study Forecasts, Western City District

Market Region	2016 ¹	2020 ²	2021	2026	2031	2036	2041	Remaining Supply
Hawkesbury-Penrith								
Dwelling Projections (Low Scenario)	133,194		144,317	151,205	170,058	193,064	200,119	
Dwelling Projections (Main Series)	133,194		146,059	156,232	178,057	204,512	215,540	
Study Dwelling Forecasts	129,517	138,550	139,512	147,725	158,229	166,803	174,212	41,796
Projections Met?			No	No	No	No	No	
Fairfield-Liverpool								
Dwelling Projections (Low Scenario)	137,454		151,997	166,293	183,579	208,105	235,449	
Dwelling Projections (Main Series)	137,454		153,779	171,528	192,055	220,259	252,232	
Study Dwelling Forecasts	128,713	138,817	140,117	150,466	160,718	169,565	177,656	86,130
Projections Met?			No	No	No	No	No	
Camden-Macarthur								
Dwelling Projections (Low Scenario)	102,261		126,812	141,343	159,819	187,632	222,829	
Dwelling Projections (Main Series)	102,261		128,154	145,586	166,827	197,860	236,929	
Study Dwelling Forecasts	98,215	115,991	119,058	138,660	157,260	173,832	187,312	79,278
Projections Met?			No	No	No	No	No	
Total Western City District								
Dwelling Projections (Low Scenario)	372,909		423,126	458,840	513,455	588,802	658,397	
Dwelling Projections (Main Series)	372,909		427,992	473,346	536,938	622,632	704,701	
Study Dwelling Forecasts	356,445	393,358	398,687	436,850	476,207	510,201	539,180	207,204
Projections Met?			No	No	No	No	No	

1 - Dwelling count as at 2016 Census

2 - Dwelling estimate based on 2016 Census count and DPIE dwelling completions data

3 - DPIE Dwelling Projections (released in 2016)

4 - DPIE Dwellings Projections (released in 2019)

Source: Atlas/DPIE (2016, 2019b, 2019c)

Compared against dwelling projections (DPIE's Low Scenario and Main Series), dwelling supply is forecast to be below projected demand. This is true in all housing market areas across the Western City District.

Should population growth exceed that expected that in DPIE's Low Scenario population projections, the supply shortfall (118,000 dwellings) concluded in this Study would could be further exacerbated.

To avoid perpetuating the growing housing shortfall and unsustainable price escalation, significantly higher council housing targets than currently being considered in each respective Council's Local Strategic Planning Statements will be required.

Forward funding of essential infrastructure will also be required to ensure the Western City is assisted in overcoming the expected shortfall. These are considered to be the essential 'next steps' following completion of this Study.

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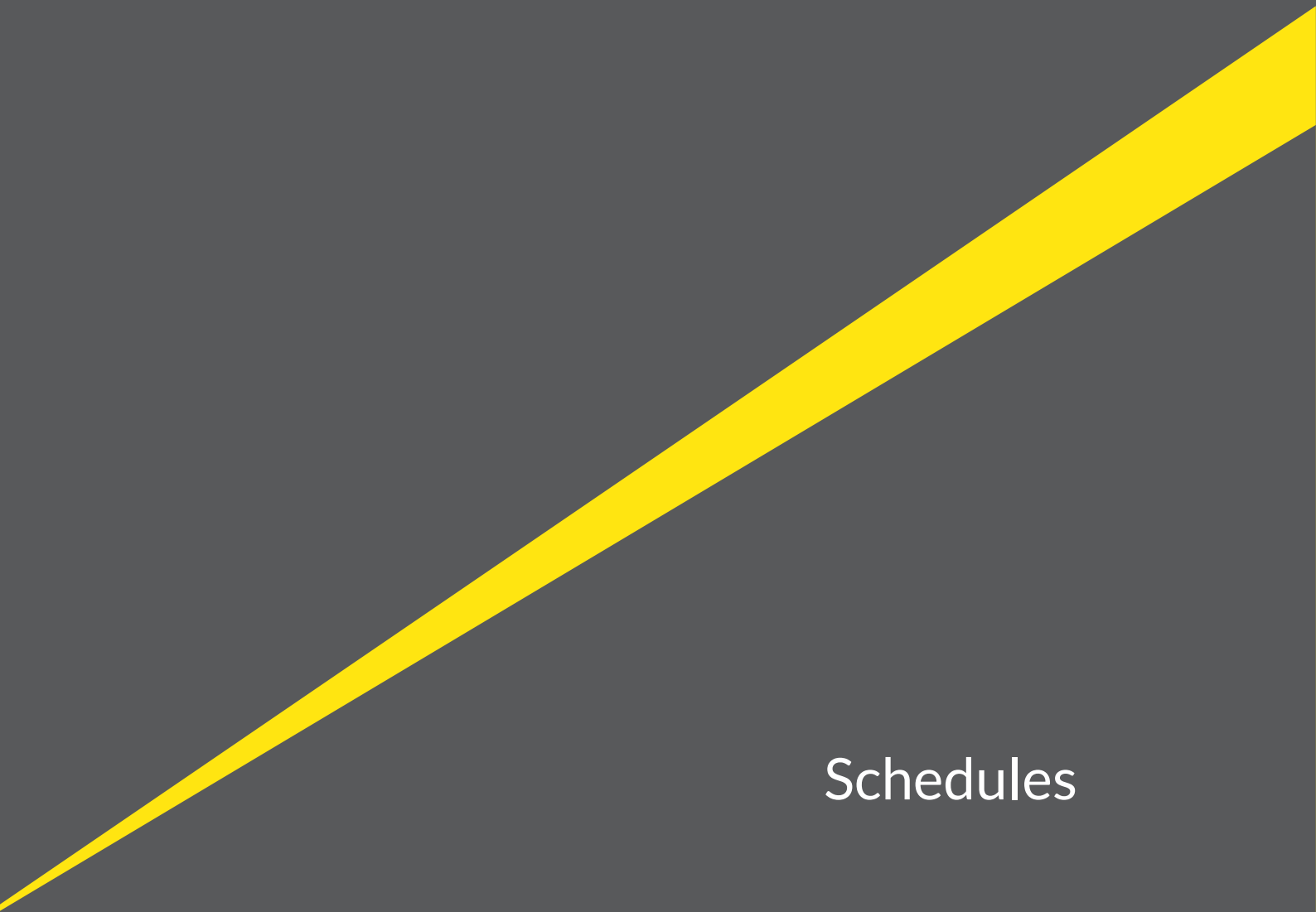
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Schedules

Planned Supply in Western City's Growth Areas, Planned Precincts and Investigation Areas

Table S1. 1: Planned Supply in Key Growth Areas, Planned Precincts and Investigation Areas, Western City

Map Ref.	Name	Original Planning Housing Capacity	Current Planning Capacity
Hawkesbury LGA			
1	Jacaranda Ponds	570	570
2	Redbank	1,396	1,396
North West Growth Area			
3	Vineyard (Stage 1)	2,395	2,395
Penrith LGA			
4	Jordan Springs	700	700
5	Penrith City Centre	8,950	8,950
6	Penrith Health and Education	400	400
7	South Werrington Urban Village	500	500
8	St Marys Town Centre	1,850	1,850
9	WSU Werrington	7,000	7,000
10	Caddens	1,250	1,250
11	Orchard Hills/Orchard Hills North	4,000	4,000
12	Claremont Meadows (Stage 2)	200	200
13	Glenmore Park (Stage 2)	500	374
14	Orchard Hills South	25,000	25,000
15	Glenmore Park South	3,200	3,200
20	Mount Vernon Investigation Area	5,000	5,000
Western Sydney Aerotropolis			
16	Mamre Road	-	-
17	North Luddenham	-	-
18	Northern Gateway	3,400	3,400
25	Kemps Creek	-	-
26	Badgerys Creek	-	-
27	South Creek	300	300
28	Agriculture and Agribusiness	1,467	1,467
31	Aerotropolis Core	8,000	8,000
34	Dwyer Road	-	-
36	Rossmore	48,300	48,300
Fairfield LGA			
21	Fairfield Heights Town Centre	695	695
22	Fairfield City Centre	3,440	3,440
19/23	Cecil Park Urban Investigation	20,000	20,000
24	Villawood Town Centre	1,295	1,295
Liverpool LGA			
29	Liverpool CBD	18,800	18,800
32	Middleton Grange	671	671

Map Ref.	Name	Original Planning Housing Capacity	Current Planning Capacity
South West Growth Area			
30/35	Austral/Leppington North	17,350	15,725
36	Rossmore	2,500	2,500
37	Leppington Town Centre	9,000	9,000
38	Edmondson Park	6,000	2,000
39	Lowes Creek Maryland	6,983	6,983
41	Catherine Fields North	9,500	9,500
42	East Leppington	4,450	519
43	Catherine Fields	5,000	5,000
44	South Creek West	30,000	30,000
45	Pondicherry	2,500	2,500
49	Oran Park	7,540	1,440
51	Catherine Fields (Part)	3,229	2,131
53	Turner Road	4,020	-
Campbelltown LGA			
40	Glenfield	4,000	4,000
46	Macquarie Fields	340	340
48	Ingleburn	3,240	3,240
54	Minto	350	350
55	Leumeah	900	900
56	Campbelltown	3,600	3,600
57	Macarthur	4,700	4,700
58	Glenlee	-	-
59	Menangle Park	4,000	4,000
60	Gilead	15,100	15,100
Camden LGA			
47	Emerald Hills	600	600
50	Camden Lakeside	1,200	1,200
52	El Caballo and Gledswood	860	860
Wollondilly LGA			
61	North Appin	5,000	5,000
62	West Appin	15,000	15,000
Wilton Growth Area			
64	North Wilton	5,600	5,600
65	West Wilton	2,350	2,350
66	Wilton Town Centre	1,600	1,600
67	Bingara Gorge	1,800	1,100
68	South East Wilton	3,600	3,600
TOTAL		349,724	331,376

Source: Various – see references

Dwelling Forecasts (2021-2041), Western City District

Table S2. 1: Dwelling Forecasts (2021-2041), Precinct and LGA

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
Blue Mountains									
Undefined		100	350	-	-	-	450	-	<p>The <i>Blue Mountains Local Housing Strategy</i> (2019) identified potential for an additional 550 theoretical dwellings which could be delivered over the coming 20 years across the LGA. Some 100 dwellings were delivered in 2020.</p> <p>The historic rate of dwelling take-up across the LGA over 2006-2016 was recorded at 145 dwellings per annum. A rate of 100 dwellings per annum has been adopted, reflecting the minimal level of development currently proposed in the development pipeline.</p>
Total		100	350	-	-	-	450	-	It is expected that the remaining 450 theoretical dwellings will be delivered by 2025.
Camden									
Lowes Creek Marylands	Released	-	1,450	1,700	1,500	1500	6,150	833	<p>Large release area in close proximity to Western Sydney Airport and Aerotropolis with potential for future rail station. Land fragmentation is limited. Developer is expected to deliver necessary trunk infrastructure.</p> <p>Sydney Water note water infrastructure was scheduled for completion 2019-2020 with sewerage works to be finished by 2022. Endeavour Energy works were to be delivered by 2023-2024 with interim capacity (prior 2023) to accommodate 1,300 lots.</p> <p>Take-up is expected to be strong over the coming decades given its proximity to the Aerotropolis and Oran Park.</p>
South Creek West	Released	-	1,350	1,650	1,900	2,150	7,050	22,950	<p>Large release area close to Western Sydney Airport and Aerotropolis with potential for future rail station. Number of major landholdings though fragmentation is more significant compared to Lowes Creek Maryland.</p> <p>Sydney Water infrastructure is scheduled for completion by 2022. Details on the extent of works to be undertaken by Endeavour Energy works is limited; it is understood a substation is to be completed by 2024-25.</p> <p>Take-up is expected to be strong over the coming decades given its proximity to Aerotropolis and Oran Park.</p>
Leppington Town Centre	Rezoned	-	1,200	1,200	800	750	3,950	5,050	Substation works to be completed by 2021-22 to service 14,000 lots (both Leppington Town Centre and East Leppington). Water infrastructure to be completed by 2022-23.

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									Highly fragmented land ownership will impede the rate of take-up. Potential for rezoning of existing B3 and B7 precincts. Take-up not expected to commence until 2023.
East Leppington	Rezoned	-	-	-	-	-	-	-	- For the purpose of the Study, all remaining capacity in the East Leppington precinct has been assumed to fall within the Campbelltown LGA.
Oran Park	Rezoned	400	1,040	-	-	-	1,440	-	- One of the most established precincts within the SWGA. Held in single ownership with services infrastructure. It is expected that take-up will remain strong over the short to medium term with build out by 2025.
Pondicherry	Not Released	-	300	750	750	700	2,500	-	- Large precinct held in majority ownership in close proximity to Oran Park. Water infrastructure to be completed by 2022 although sewerage infrastructure likely completed closer to 2025. Substation works to be completed by 2022-23. Take-up is expected to be strong and commence in 2025.
Rossmore South	Not Released	-	-	-	-	-	-	2,500	Timing on delivery of water and sewerage infrastructure is unknown; status is noted as 'strategic planning' in the Sydney Water Servicing Plan 2019-2024'. Not identified as a short to medium term project by Endeavour Energy. Theoretical yield of 2,500 lots has been adopted. No development expected prior to 2041.
Catherine Fields (part)	Rezoned	300	1,300	531	-	-	2,131	-	Substation works to be completed by 2024-25 to service 12,500 lots. Timing for water infrastructure is unknown and possibly developer-led. Catherine Fields (part) is expected to be taken-up prior commencement of other Catherine Fields precincts.
Catherine Fields North	Not Released	-	-	200	500	300	1,000	8,500	
Catherine Fields	Not Released	-	200	500	500	300	1,500	3,500	
Emerald Hills	Rezoned	600	600	-	-	-	1,200	-	- Construction is currently underway. Take-up is expected to be strong with build out expected by 2025.
El Caballo/ Gledswood	Rezoned	300	560	-	-	-	860	-	- Construction is currently underway. Take-up is expected to be strong with build out expected by 2024.
Camden Lakeside	Rezoned	150	450	-	-	-	600	-	- Construction is currently underway. Take-up is expected to be strong with build out expected by 2023.
Undefined		575	785	653	595	570	3,178	-	- A factor of 50% is applied to the 2021 dwelling forecast to reflect the existing construction pipeline with a factor of 10% applied over 2022-2041 to account for infill development. This accounts for ongoing development at Spring Farm and elsewhere across the LGA.

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
Total		1,725	8,635	7,184	6,545	6,270	30,359	44,533	It is forecast that about 42% (30,359) of 73,200 theoretical capacity in Camden will be delivered by 2041.
Campbelltown									
East Leppington	Rezoned	350	169	-	-	-	519	-	Established residential precinct with existing town centre and market profile. Take-up is expected to remain strong over the short-term with build-out expected by 2022.
Gilead	Rezoned	150	1,000	1,350	1,500	1,500	5,500	9,600	Large release area held in majority ownership with marketing currently underway. Take-up is expected to commence in 2021 with additional releases expected to commence in 2030.
Menangle Park	Rezoned	250	1,400	1,300	1,050	-	4,000	-	Large precinct rezoned held in majority ownership with marketing currently underway. Take-up is expected to commence in 2021 with additional releases expected to commence in 2030.
Glenfield	Not Rezoned	-	750	1,500	1,250	500	4,000	-	<p>The Glenfield precinct is split into two main precincts; the Western precinct (the Hurlstone Agricultural High School site) and the Eastern precinct (characterised by existing low-density housing surrounding Glenfield train station).</p> <p>Following the recent announcement that the Hurlstone Agricultural High School would not be relocating to Richmond, the NSW Government has announced that only part of the site (further west of the school site and train station) will be developed. This portion of the site is expected to yield up to 3,500 homes, new local centre and primary school although masterplanning is still underway.</p> <p>There is no documentation on theoretical capacity of the eastern portion of the Glenfield precinct. For the purposes of this Study, it is assumed there is theoretical capacity for 500 dwellings in the Eastern precinct.</p> <p>The draft Glenfield Place Strategy was released in December 2020 for public exhibition. The Place Strategy retains the existing Hurlstone Ag. High School and plans for a new town centre with heights of up to 12 storeys. The Place Strategy was subsequently been removed from DPIE's website. Unable to confirm total yield.</p> <p>It is expected that take-up could commence in 2023 at a rate of 150 dwellings/annum. The Eastern precinct is expected to deliver infill housing opportunities. Assuming rezoning occurs by 2022, the precinct could contribute 20 dwellings per annum over the short to medium term.</p>
Macquarie Fields	Not Rezoned	20	100	100	50	50	320	-	<p>The Macquarie Fields Precinct Plan (2017) outlines the proposed land uses and density controls for the local centre and surrounding residential area. Medium-rise residential buildings (3-6 storeys) are envisaged around the train station with lower density uses closer to the existing shopping centre. Overall, the precinct is noted as having the theoretical capacity for an additional 340 dwellings.</p> <p>Take-up in Macquarie Fields to 2041 is expected to be soft; price points for existing detached housing limit the potential sale prices for new apartments to a level which is generally unfeasible to deliver. The market for higher-density uses is yet to mature; this type of demand is more likely to occur in Campbelltown prior to the smaller centres along the Corridor.</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									Medium-density development is more likely to occur over the short to medium term.
Ingleburn	Rezoning Underway	1 25	550	500	500	500	2,175	1,065	<p>The Ingleburn Precinct Plan is the first precinct in the Glenfield to Macarthur Corridor to be progressed into the Campbelltown LEP; a Planning Proposal to implement the proposed planning controls was lodged in September 2019 and is currently under assessment by Campbelltown Council.</p> <p>The Planning Proposal envisages a mix of density controls across the centre with theoretical capacity for 3,200 new dwellings. Existing R2 land adjoining the B2 Local Centre is to be rezoned to R4 High Density Residential with a FSR 2.7:1. Mixed-use development in the B2 zone will be subject to FSR 3.7:1 with a minimum non-residential FSR 1.7:1. In most instances, these are considered viable for redevelopment to occur in the short to medium term.</p> <p>Whilst Ingleburn is similar to Macquarie Fields in some respects given its limited market profile and soft demand for apartment product, the centre enjoys a much greater level of amenity and retail offerings. This will contribute to moderate take-up of development opportunities over the short to medium term, although it is not expected that all theoretical capacity will be achieved by 2041.</p>
Minto	Not Rezoned	30	150	120	50	-	350	-	<p>The Minto Precinct Plan (2017) outlines the proposed land uses and density controls for the local centre and surrounding residential area. Medium-rise residential buildings (3-6 storeys) are envisaged around the train station with lower density uses further north. Overall, the precinct has the theoretical capacity for an additional 350 dwellings.</p> <p>Take-up in Minto to 2041 is expected to be soft; price points for existing housing limiting the potential sale prices for new apartments to a level which is generally unfeasible to deliver.</p> <p>Medium-density development is more likely to occur over the short to medium term. Take-up is assumed to commence in 2021 at a rate of 10-30 dwellings/annum.</p>
Leumeah	Not Rezoned	20	270	200	125	-	615	285	<p>The Leumeah Precinct Plan (2017) outlines the proposed land uses and density controls for the local centre and surrounding residential area.</p> <p>High rise residential (7+ storeys) is proposed immediately adjacent the station, medium-rise residential buildings (3-6 storeys) are envisaged around the train station with lower density uses closer to the existing shopping centre. Overall, the precinct is noted as having the theoretical capacity for an additional 900 dwellings.</p> <p>Owing to the significant increases in densities proposed, particularly in those areas immediately around the train station, take-up in Leumeah in the short-term is expected to be good. As these opportunities are taken up, development is expected to decline with medium density forms of infill development more likely.</p>
Campbelltown	Not Rezoned	100	1,000	850	750	500	3,450	150	<p>The Campbelltown Precinct Plan (2017) envisages a range of high rise mixed-use and residential uses (7+ storeys), medium rise residential flat buildings and low rise residential uses.</p> <p>Development activity within Campbelltown has already begun to emerge, with several high-rise apartment buildings in excess of 70 units recently completed or under construction.</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									Infill development within the City Centre is expected to be strong over the coming 20 years, although the opportunities for development will likely diminish post-2031.
Macarthur	Not Rezoned	125	825	1,000	650	500	3,100	1,600	<p>The Macarthur Precinct Plan (2017) outlines the proposed land uses and density controls for the local centre and surrounding residential area.</p> <p>High rise mixed use (7+ storeys) is proposed along Melicar Road immediately east of the station, medium-rise residential buildings (3-6 storeys) is proposed north of the station with lower density uses on the periphery of the centre. Overall, the precinct has theoretical capacity for an additional 4,700 dwellings.</p> <p>Take-up of high-rise mixed-use opportunities is expected in the medium to long term - many of these existing buildings are improved with valuable large format retail facilities.</p> <p>Market dynamics are yet to shift enough to displace these current uses. The medium-rise residential uses proposed north of the train station are more likely to occur in the short-term given this land is unimproved and owned by WSU and Landcom.</p>
Undefined		117	621	692	593	380	2,403	-	A factor of 10% is applied to the 2021 dwelling forecast to reflect the existing construction pipeline with a factor of 10% applied over 2022-2041 to account for infill development.
Total		1,287	6,835	7,612	6,518	4,180	26,432	12,720	Circa 72% (12,720) of the 36,749 theoretical capacity in the Campbelltown LGA could be delivered by 2041.
Fairfield									
Fairfield Rural Lands Urban Investigation Area	Not Rezoned	-	320	770	1,150	1,500	3,740	16,260	<p>The Fairfield and Horsley Park Urban Investigation Area is a 1,575ha rural-residential area stretching north-south immediately west of the M7 Motorway. The area is located circa 10km north-east of the Western Sydney Airport and adjoins the Eastern Creek industrial precinct.</p> <p>A Preferred Draft Structure Plan was adopted by Fairfield Council in 2019; the Structure Plan proposes between 14,152 and 20,000 dwellings (detached and attached housing), two village centres and 174ha of employment land.</p> <p>Council are targeting to exhibit detailed Precinct Plans for the Area in 2021 with rezonings to occur from 2022. Whilst the area is currently serviced by infrastructure, the extent of upgrades required is yet to be determined.</p> <p>Much of the area is dominated by large rural lots; the Urban Capability Assessment noted the majority of lots range from 2ha to 5ha. The area is highly fragmented which will make future development challenging.</p> <p>Take-up is expected to commence by 2024. Owing to the more desirable locations of neighbouring release areas, take-up is expected to be modest with the majority of take-up expected post-2041.</p>
Fairfield City Centre	Not Rezoned	100	825	1,000	750	500	3,175	265	The Fairfield City Centre Urban Design Plan (2018) investigated the capacity of the Fairfield, Fairfield Heights and Villawood town centres to accommodate additional housing should densities and building heights be lifted. A series of key sites were identified for the purposes of

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									<p>the plan. Urban design testing found that there would be a maximum theoretical yield of 3,440 dwellings should planning controls envisaged in the Plan be implemented in Fairfield.</p> <p>It is intended that the Study will form the basis of landowner or applicant initiated planning proposals to amend the Fairfield Local Environmental Plan 2013.</p> <p>It is expected that take-up in the City Centre will be strong over the coming years as developers target existing centres with good transport connectivity and amenity.</p>
Fairfield Heights Town Centre	Not Rezoned	50	190	150	110	100	600	95	<p>The Fairfield City Centre Urban Design Plan (2018) investigated the capacity of the Fairfield, Fairfield Heights and Villawood town centres to accommodate additional housing should densities and building heights be lifted. A series of key sites were identified for the purposes of the plan. Urban design testing found that there would be a maximum theoretical yield of 695 dwellings should planning controls envisaged in the Plan be implemented in Fairfield Heights.</p> <p>It is intended that the Study will form the basis of landowner or applicant initiated planning proposals to amend the Fairfield Local Environmental Plan 2013.</p> <p>Owing to feasibility issues and land fragmentation, take-up of development opportunities in Fairfield Heights is expected to gradual over the coming decades.</p>
Villawood Town Centre	Not Rezoned	50	360	500	220	100	1,230	65	<p>The Fairfield City Centre Urban Design Plan (2018) investigated the capacity of the Fairfield, Fairfield Heights and Villawood town centres to accommodate additional housing should densities and building heights be lifted. A series of key sites were identified for the purposes of the plan. Urban design testing found that there would be a maximum theoretical yield of 1,295 dwellings should planning controls envisaged in the Plan be implemented in Villawood.</p> <p>It is intended that the Study will form the basis of landowner or applicant initiated planning proposals to amend the Fairfield Local Environmental Plan 2013.</p> <p>Following completion of existing in the pipeline, take-up in Villawood is expected to be gradual to 2041.</p>
Undefined		30	254	363	335	330	1,312	-	<p>A factor of 15% is applied to the 2021 dwelling forecast to reflect the existing construction pipeline with a factor of 15% applied over 2022-2041 to account for infill development.</p>
Total		230	1,949	2,783	2,565	2,530	10,057	16,685	<p>Approximately 40% (10,057 dwellings) of 25,400 theoretical dwellings in Fairfield could be delivered by 2041.</p>
Hawkesbury									
Vineyard (Stage 1)	Not Rezoned	-	475	1,100	795	-	2,370	25	<p>Existing servicing is limited and would not be able to accommodate more than 500 dwellings until future upgrades by Sydney Water and Endeavour Energy.</p> <p>Sydney Water are expected to service the area between 2022-2026. Endeavour Energy are expected to commence upgrades between 2020-2024. It is assumed more intense development will not occur until 2026.</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
Redbank	Rezoned	100	500	500	296	-	1,396	-	Estate is already rezoned and serviced with vast majority of lots already released and sold. Take-up of remaining lots is expected to be good.
Jacaranda Ponds	Rezoned	-	375	195	-	-	570	-	Large estate held in single ownership expected to receive planning approval in the next 2-3 years. Take-up expected to commence in 2026.
Undefined		82	333	372	302	193	1,281	3,763	A factor of 10% is applied to the dwelling forecast over 2020-2041 to account for infill development. The draft Hawkesbury Local Housing Strategy (Hawkesbury City Council, 2019) identified a planning capacity of 4,533 dwellings in existing centres outside the greenfield areas of Vineyard, Redbank and Jacaranda Ponds.
Total		182	1,683	2,167	1,393	193	5,617	3,788	Some 63% (5,600) of the 8,900 theoretical dwellings in the Hawkesbury LGA could be delivered by 2041.
Liverpool									
Aerotropolis Core	Rezoned	-	-	1,000	900	625	2,525	5,475	Development expected to align closer to the opening of the Western Sydney Airport in 2026. Sydney Water intend on delivering water and sewerage infrastructure in 2023-2024. Construction of the substation to service the airport and surrounding area is to be Government-led as part of the development of the WSA. Other substations to support development across the WSGA will be delivered by Endeavour Energy over the course of 2019-2024. Take-up is expected to be strong, commencing in 2027 with 2,525 dwellings delivered by 2041.
South Creek	Rezoned	-	-	-	25	125	150	-	Minimal development expected in the short to medium-term as activity is focused in the Aerotropolis Core and Northern Gateway precincts. Location along South Creek is likely to offer high level of amenity and enjoy good level of take-up in the longer term.
Agribusiness	Rezoned	-	62	310	310	190	872	595	Residential development expected to be focused in the existing Luddenham Village.
Rossmore	Not Rezoned	-	-	-	-	-	-	48,300	Highly fragmented landholdings with delivery of water and energy infrastructure not expected in the medium term. Take-up is expected to occur post 2041.
Austral/Leppington North	Rezoned	250	1,250	1,050	825	625	4,000	11,725	Zoned residential precinct yet to be serviced; Sydney Water intend on delivering water and sewerage infrastructure in 2022 with Endeavour Energy expected to complete the North Leppington and Austral substations by 2021-2022. Precinct is highly fragmented with multiple landowners and small lots. Development is expected to gradually increase in line with completion of the Western Sydney Airport.
Edmondson Park	Rezoned	450	1,550	-	-	-	2,000	-	One of the more established precincts within the SWGA. 945 dwellings were completed in 2020 - a record for the precinct. Remaining dwellings expected to be exhausted by 2026.

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
Liverpool CBD	Rezoned	400	3,900	4,250	3,500	3,400	15,450	3,450	<p>The Liverpool CBD was rezoned from B3 Commercial Core to B4 Mixed Use in early 2018 with FSRs ranging from FSR 2.5:1 to FSR 3:1 (although higher FSRs can be achieved subject to conditions being met). In 2018, the Liverpool Place Strategy (2018) identified the City Centre had the capacity to deliver an additional 18,800 dwellings by 2036.</p> <p>Whilst much of the Liverpool City Centre is characterised by fine grain lot patterns, there remains significant redevelopment opportunities throughout the CBD with older style commercial buildings on large lots representing immediate opportunities. This is reflected in the quantum of development proposed in the pipeline. As Liverpool grows in importance following the completion of the Western Sydney Airport and implementation of possible direct links (Fast bus route), development activity will further grow.</p> <p>Take-up over 2021-2022 expected to be slower as market shifts towards lower density housing formats. Take-up anticipated to ramp up from 2023.</p>
Middleton Grange	Rezoned	-	671	-	-	-	671	-	Planning proposal for a new town centre and mixed-use precinct servicing the Middleton Grange release area. The area was rezoned in mid-2018 with take-up expected to occur in 2022.
Undefined		660	966	859	723	596	3,804	-	A factor of 30% is applied to the 2020 dwelling forecast to reflect the existing construction pipeline with a factor of 15% applied over 2021-2041 to account for infill development.
Total		1,760	8,399	7,469	6,283	5,561	29,472	69,445	Some 31% (29,472) of the 91,000 theoretical dwellings in the Liverpool LGA forecast to be delivered by 2041.
Penrith									
Orchard Hills North	Not Rezoned	-	150	950	700	500	2,300	1,700	<p>Large rural area immediately north of the M4 Motorway just south of the Caddens Release Area. Identified as an Investigation Area in the Penrith Housing Study (2019) with potential for 4,000 dwellings. Status is noted as 'pre-exhibition' with the expected delivery horizon noted as 1,000 dwellings within the next 6-10 years and the remaining 3,000 dwellings over the following 10-20 years.</p> <p>Legacy Property is currently undertaking a rezoning within the precinct of 164ha in partnership with over 50 landowners for delivery of 1,700-1,900 dwellings. The proposal received Gateway in February 2019 with an update to the LEP recommended for completion within 24-months.</p>
Orchard Hills South Investigation Area	Not Rezoned	-	-	-	400	1,000	1,400	23,600	<p>Large rural area immediately south of the M4 Motorway. Comprises the Defence Establishment Orchard Hills (munitions storage facility, training facility, landfill, sewerage treatment plant) and multiple small rural-residential lots. The precinct is identified in the Penrith Housing Study (2019) as having potential for 25,000 dwellings. The Study notes a delivery horizon of 5,000 dwellings within the next 6-10 years, 10,000 dwellings in the next 10-20 years and the remaining 10,000 dwellings in the next 20+ years.</p> <p>These timeframes are considered optimistic; the precinct lacks immediate transport connectivity and could have contamination issues given the activities carried out on the DoD's landholdings.</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									It is expected take-up will not commence until 2035 with a total of 1,400 dwellings delivered by 2041.
Glenmore Park South	Not Rezoned	-	-	550	1,000	1,000	2,550	8	<p>Large area of rural land (circa 218.5ha) immediately south of the existing Glenmore Park Release Area. Multiple allotments although it is understood that Mirvac control approximately 122.4ha. The area is identified in the Penrith Housing Study (2019) as having theoretical capacity for circa 3,200 dwellings. The Housing Study envisages delivery of 1,000 lots in 6-10 years with a further 2,200 lots from 2029-2039.</p> <p>Owing to lack of proximity to rail infrastructure, it is expected take-up will not commence until 2028. Take-up will be moderate given competition from other better located release areas.</p>
WSU Werrington Precinct	Not Rezoned	-	-	100	1,050	1,250	2,400	4,600	<p>The WSU Werrington precinct is located immediately south-west of Werrington train station and is bisected into two campuses by the Great Western Highway. The Northern Campus comprises 58ha with the Southern Campus comprising 47.4ha. The Nepean TAFE Campus is also located adjacent the Werrington South Campus.</p> <p>It is understood that WSU is currently progressing a masterplan for both campuses for a mixed-use development. The Penrith Housing Study (2019) identifies both campuses have the theoretical capacity for 7,000 dwellings with the masterplan currently under assessment by Penrith City Council. The Housing Study expects 1,000 dwellings will be delivered over 2026-2036 with 6,000 dwellings over 2030-2040.</p> <p>Owing to the early stage of development and potential for integration with a new rail line, take-up is not expected to occur until 2031 (likely on the northern site initially).</p>
Mt Vernon/Horsley Park Urban Investigation Area	Not Rezoned	-	-	-	-	-	-	5,000	<p>Located on the border of the Penrith, Liverpool and Fairfield LGAs, the Mount Vernon/Horsley Park Urban Investigation Area is a rural-residential area located in close proximity to the Western Sydney Airport and Aerotropolis. Precinct investigations for Mount Vernon have been undertaken in conjunction with Cecil Park and Horsley Park (Fairfield LGA).</p> <p>Mount Vernon is identified in the Penrith Local Housing Study (2019) as having the theoretical capacity for circa 5,000 dwellings. The precinct is not expected to deliver new housing until 2040.</p> <p>It is understood a local developer owns a 180ha landholding in the precinct and is seeking to progress a 1,000-lot development in the medium term. It is not expected that Mount Vernon will deliver new housing until post 2041.</p>
Jordan Springs and Central Precinct	Rezoned	-	500	200	-	-	700	-	<p>Vacant rural land adjoining the existing Jordan Springs precinct. Development is governed by the St Marys REP. It is identified in the Penrith Local Housing Study (2019) as having theoretical capacity for 700 dwellings.</p> <p>There is existing approval for a 200-unit apartment project with the remaining 500 dwellings expected to be released within the next 5 years. Take-up is expected to be good with build-out by 2028.</p>

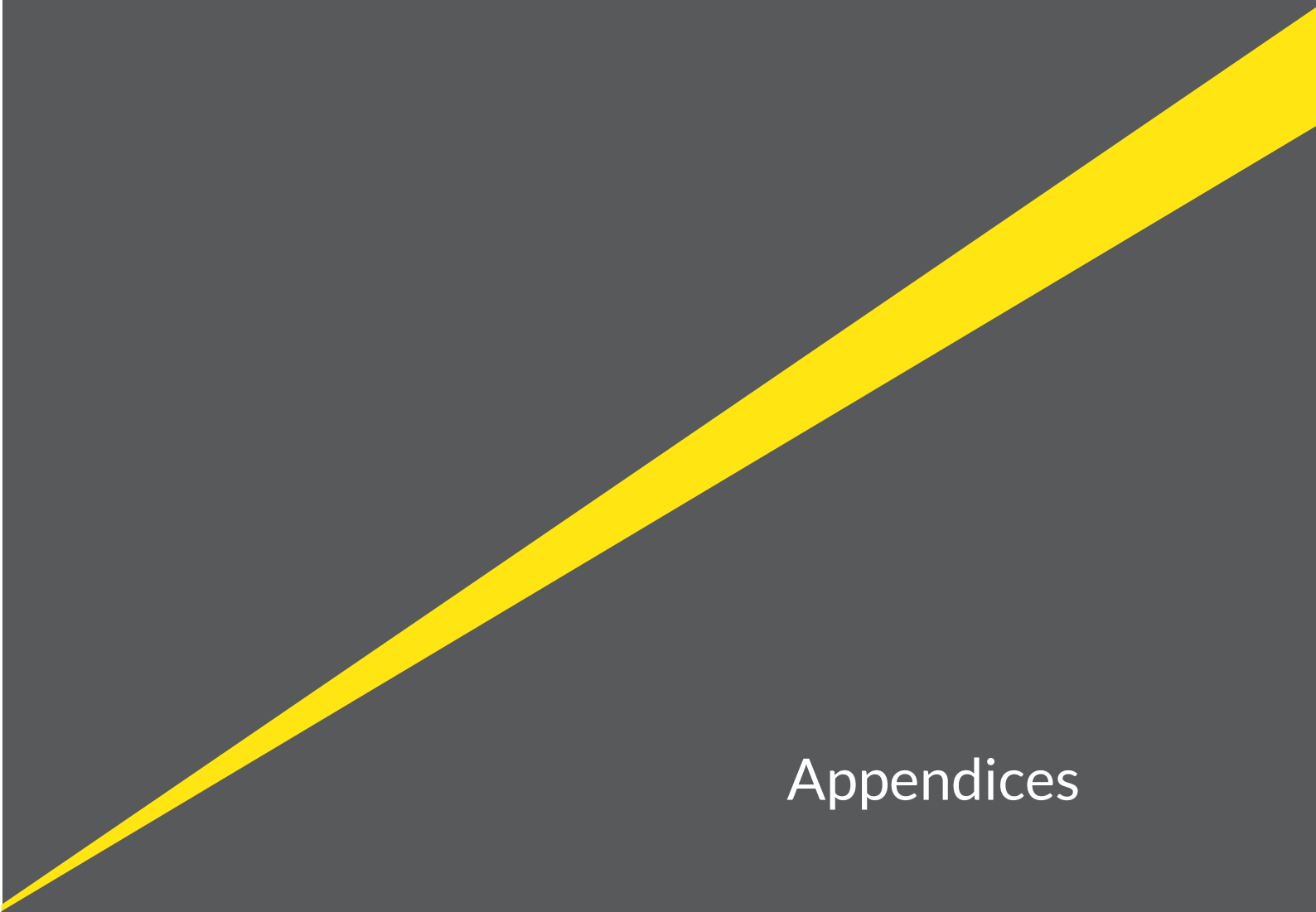
Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
Caddens Release Area	Zoned	80	500	500	170	-	1,250	-	Zoned and serviced land with next estate (500 lots) currently marketing. Sales data indicates an average sales rate of circa 60-70 lots per annum since 2016. It is expected that take-up will be good with build out by 2032.
Claremont Meadows	Zoned	-	200	-	-	-	200	-	Zoned and serviced land initially released in 2015 and received well by the market (sales data indicative of 55 land sales per annum since 2016). No marketing is currently underway with no DA's currently under assessment.
Glenmore Park	Zoned	100	274	-	-	-	374	-	Zoned and serviced land which was initially released in 2015 and received well by the market (sales data indicative of 55 land sales per annum since 2016). Marketing and construction is currently underway.
South Werrington Urban Village	Zoned	-	250	250	-	-	500	-	Large precinct which has been zoned (mix of R1, R3 and R4) and released for a number of years. No development yet to occur given fragmented land ownership. Number of DA's have been progressed however change in developer has stalled progression to date. No marketing is currently underway. Given its location, likely to face some level of stigma (particularly for higher-density uses).
Penrith City Centre	Zoned (partial)	250	1,900	2,150	1,450	1,100	6,850	2,100	The Penrith Local Housing Study (2019) identified theoretical capacity for 8,050 dwellings within the Penrith City Centre under existing planning controls. This would include the theoretical capacity of 4,000 dwellings through the 'Key Sites' incentive floorspace mechanism. The Housing Study also identified potential for an additional 900 dwellings should further amendments to planning controls be made.
Penrith Health and Education Precinct	Not Rezoned	-	-	300	100	-	400	-	The Penrith Health and Education Precinct is a planned medical, commercial and residential precinct anchored by the Nepean Hospital. The Penrith Local Housing Study (2019) identifies the potential for 400 dwellings to be delivered in 6-10 years. Owing to the high-level of fragmentation within the precinct and early stage of precinct planning, this timeframe is considered reasonable.
St Marys Town Centre	Not Rezoned	50	400	500	500	400	1,850	-	<p>The Penrith Local Housing Study (2019) identified theoretical capacity for 1,250 dwellings within the St Marys Town Centre under existing planning controls. The Housing Study also identified potential for an additional 600 dwellings should further amendments to planning controls be made. The Study expected these dwellings would be taken up in 6-10 years.</p> <p>Dwelling take-up in the St Marys Town Centre averaged about 77 dwellings per annum over 2006-2016, with slightly faster growth over 2011-2016 with 88 dwellings/annum over 2011-2016.</p> <p>A review of the development pipeline shows that since 2016 just under 470 dwellings have been delivered (analysing to 157 dwellings/annum). That vast majority of these have been medium-density typologies on the fringes of the Town Centre. Looking forward, the pipeline suggests potential for 1,240 dwellings to be delivered throughout the City Centre and surrounding residential area. That said, only ~50 of these are currently under construction with 690 having</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									<p>some form of approval. The remainder are in early planning or are yet to be determined by Penrith City Council.</p> <p>It is assumed that all existing projects under construction will be developed in the short-term with development peaking over 2026-2031 as the market seeks to align housing delivery with commencement of the Western Sydney Airport and North-South Rail Link. Post 2028, development is expected to taper as sites become more difficult to consolidate.</p>
Panthers Redevelopment	Rezoned	200	650	-	-	-	850	-	<p>Large masterplanned development on land owned by Penrith Panthers Leagues Club adjacent the existing Leagues Club, Nepean River and Penrith Panthers Football Stadium. Includes a variety of uses, including a significant retail precinct and aged care facilities which will attract good interest from local buyers. Assumed to be staged over 15 years with take-up rates increasing as precinct matures and enjoys greater market acceptance.</p>
Glossop Street	Rezoned	-	200	500	-	-	700	-	<p>The Glossop Street Precinct has been identified by Penrith City Council as a future high-density residential precinct given its proximity to the St Marys town centre. The precinct has been rezoned to R4 High Density Residential and is currently improved with low-density detached housing and medium-density townhouses and villas.</p> <p>The Penrith Housing Study (2019) identifies theoretical capacity of 700 dwellings in the precinct. Take-up is expected to occur in 6-10 years.</p> <p>Limited higher-density development has occurred to date. As St Mary emerges as a key interchange for the Western Sydney Airport and as the town centre grows, higher-density development in this precinct will likely become more viable.</p>
North Penrith Depot	Not Rezoned	-	150	350	-	-	500	-	<p>The North Penrith Multi User Depot is a Department of Defence owned site located immediately north of the Penrith train station. It is understood Defence intend on divesting the site in 2020-21. The site is currently zoned SP2 - any rezoning will be progressed by the future landowner.</p> <p>The Penrith Housing Study (2019) identifies the site as having the theoretical capacity for 500 dwellings with take-up expected in 6-10 years.</p> <p>Given the site will be in single ownership and is ideally located, it is expected that this site will be fully taken up.</p>
Rodgers and Somerset Streets, Kingswood	Rezoning Underway	-	100	100	100	150	450	-	<p>Several sites owned by Penrith City Council currently zoned RE1. Council has progressed a Planning Proposal to rezone the sites to B4 Mixed Use. The Proposal received Gateway approval in late 2018 although rezoning has yet to occur.</p> <p>The Penrith Housing Study (2019) notes that take-up of these sites is expected to occur progressively; 200 dwellings are likely to be taken up in 6-10 years with the remaining 250 dwellings in 10-20 years.</p> <p>Take-up is expected to be fully achieved by 2041.</p>
Northern Gateway	Rezoned	-	100	800	750	750	2,400	1,000	<p>Development expected to align closer to the opening of the Western Sydney Airport in 2026. Sydney Water intend on delivering water and sewerage infrastructure in 2024-2025.</p>

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
									Endeavour Energy have designated construction of the substation needed to facilitate the Science Park and other integrated residential development will occur by 2023. Take-up is anticipated to be strong with build out by 2041.
South Creek	Rezoned	-	-	-	25	125	150	-	Minimal development expected in the short to medium-term as activity is focused in the Aerotropolis Core and Northern Gateway precincts. Location along South Creek is likely to offer high level of amenity and enjoy take-up in the long-term.
Undefined		102	806	1,088	937	941	3,874	-	A factor of 15% was applied to the 2021 dwelling forecast with a factor of 15% applied over 2021-2041 to account for infill or unplanned greenfield development.
Total		782	6,180	8,338	7,182	7,216	29,698	38,008	It is forecast that approximately 47% (29,700) of 64,500 theoretical capacity in Penrith will be delivered by 2041.
Wollondilly									
North Appin	Not Rezoned	-	-	-	-	-	-	5,000	Large undeveloped land holdings used for rural purposes. Identified in the Greater Macarthur Urban Capability Assessment as having potential for significant housing development. Assumed take-up post 2041.
West Appin	Not Rezoned	-	-	-	-	-	-	15,000	
South East Wilton	Rezoned	150	1,050	1,100	1,000	300	3,600	-	Large landholding held in single ownership forming part of the Wilton New Town. Take-up is expected to good and commence in 2023 with build-out by 2039.
Wilton Town Centre	Not Rezoned	-	675	825	100	-	1,600	-	Large landholding held in majority ownership forming the new town centre of Wilton New Town. Take-up is expected to be more modest compared to the other precincts in Wilton New Town given the higher densities envisaged which will likely face slower market acceptance. Build-out expected by 2035. The Department of Planning Industry & Environment placed the draft Wilton Town Centre Rezoning Package on exhibition for feedback until December 2020. Rezoning expected in the short-term.
Bingara Gorge	Rezoned	200	900	-	-	-	1,100	-	The Bingara Gorge Estate has approximately 1,100 dwellings remaining to be delivered. These are expected to generate strong interest with build-out likely by 2025.
North Wilton	Rezoned	-	650	1,225	1,125	1,100	4,100	1,500	Large landholding held in majority ownership forming part of the Wilton New Town. Take-up expected to good and with 4,100 dwellings to be completed by 2041.

Precinct	Status	2021	2021-2026	2026-2031	2031-2036	2036-2041	2020-2041	Remaining Capacity	Commentary
West Wilton	Not Rezoned	-	-	-	700	1,125	1,825	525	Large landholding forming part of the Wilton New Town. Held in fragmented ownership which will likely impede development in the short to medium term. Take-up expected to good and with 1,800 dwellings to be completed by 2041.
Undefined		280	856	654	585	505	2,880	-	A factor of 80% was applied to the 2021 dwelling forecast with a factor of 25% applied over 2022-2041 to account for infill or unplanned greenfield development.
Total		630	4,131	3,804	3,510	3,030	15,105	22,025	About 44% (15,100) of the 34,300 theoretical dwellings in the Wollondilly LGA forecast to be delivered by 2041.
Total Western City		6,696	38,163	39,357	33,994	28,980	147,190	207,204	Overall, the Western City District is expected to deliver around 147,000 dwellings by 2041, accounting for some 42% of total theoretical supply.

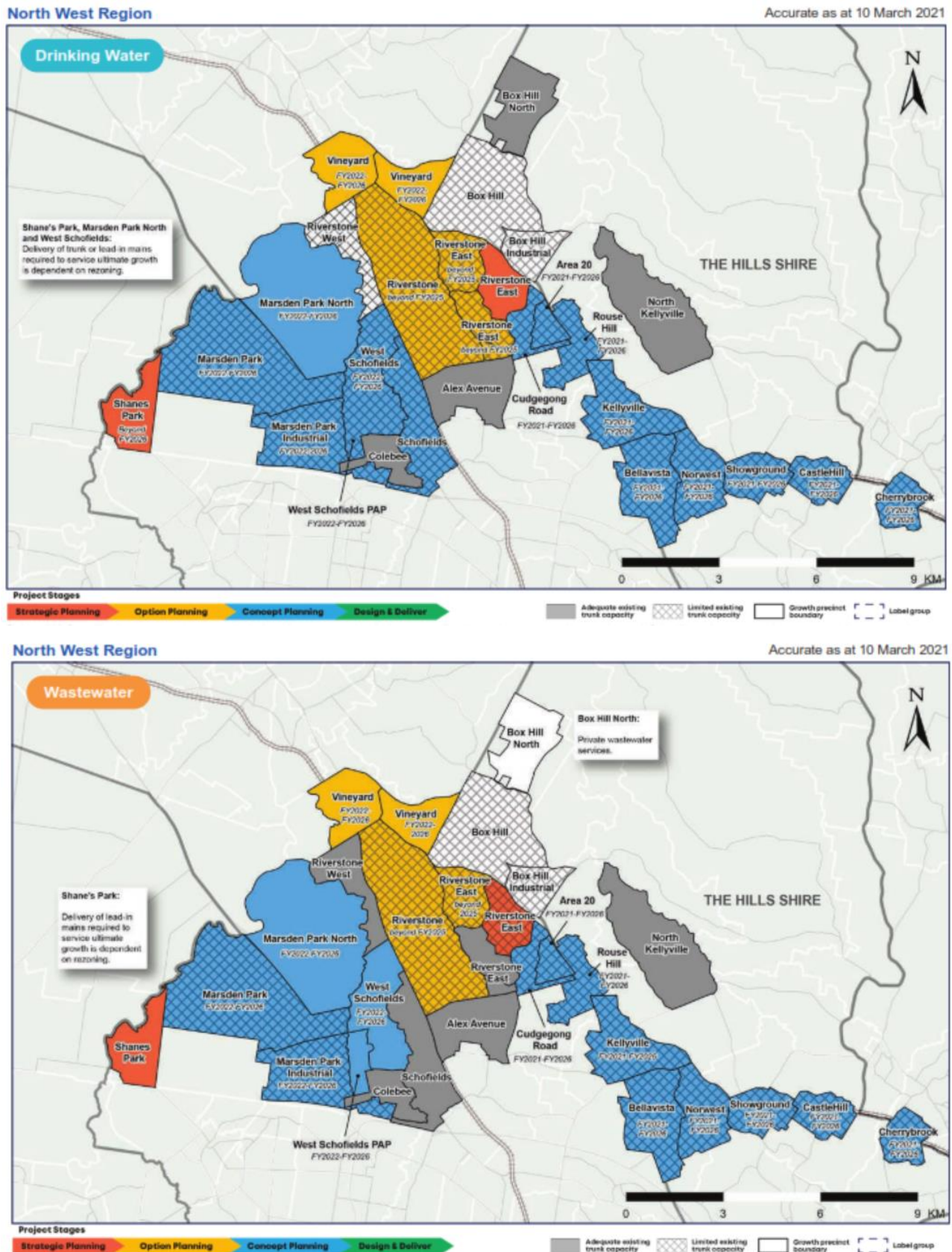
Source: Atlas



Appendices

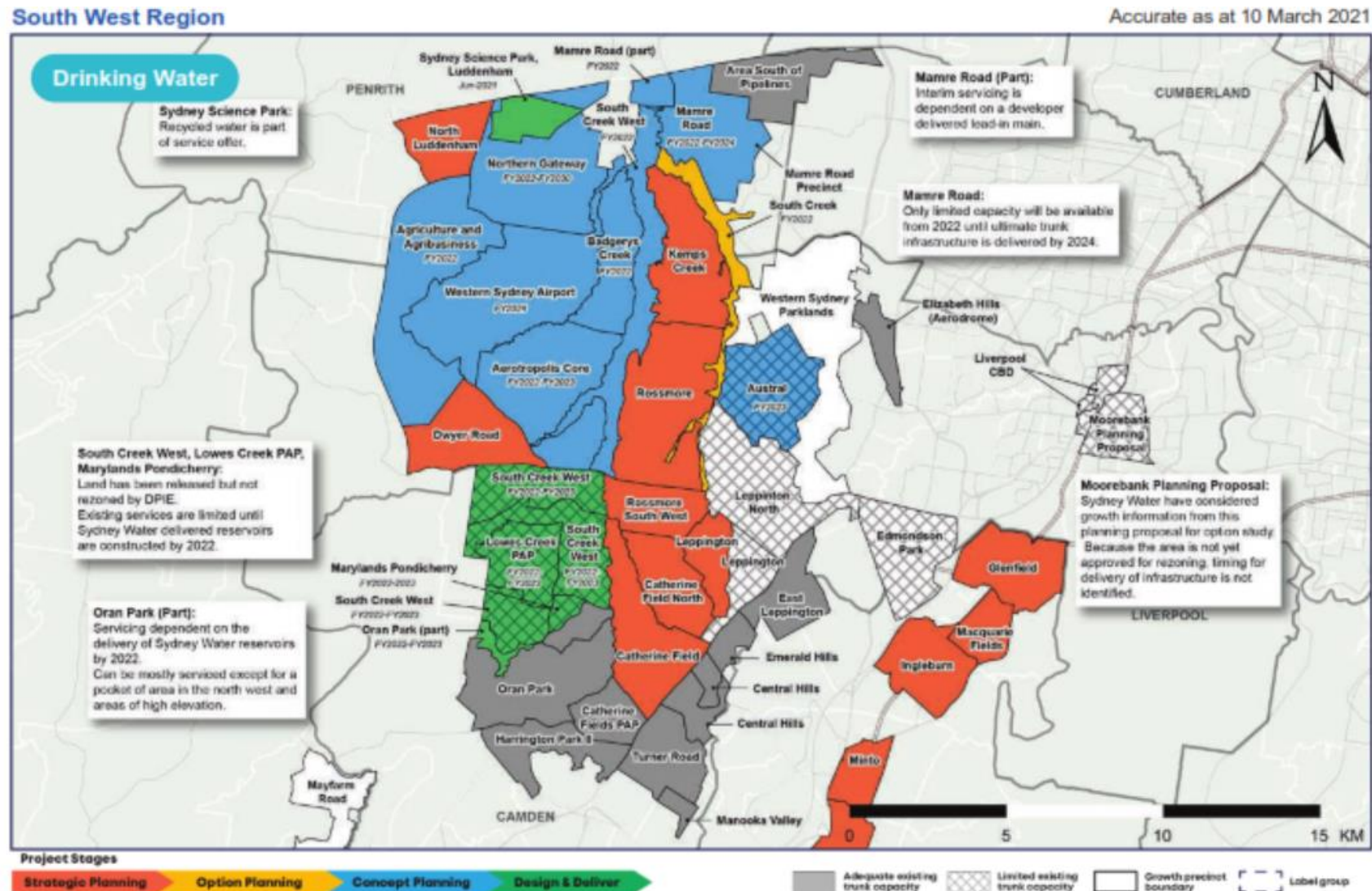
Sydney Water Servicing Plans

Figure A. 1: North West Region



Source: Sydney Water (2020)

Figure A. 2: South West Region



Accurate as at 10 March 2021

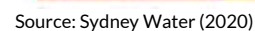
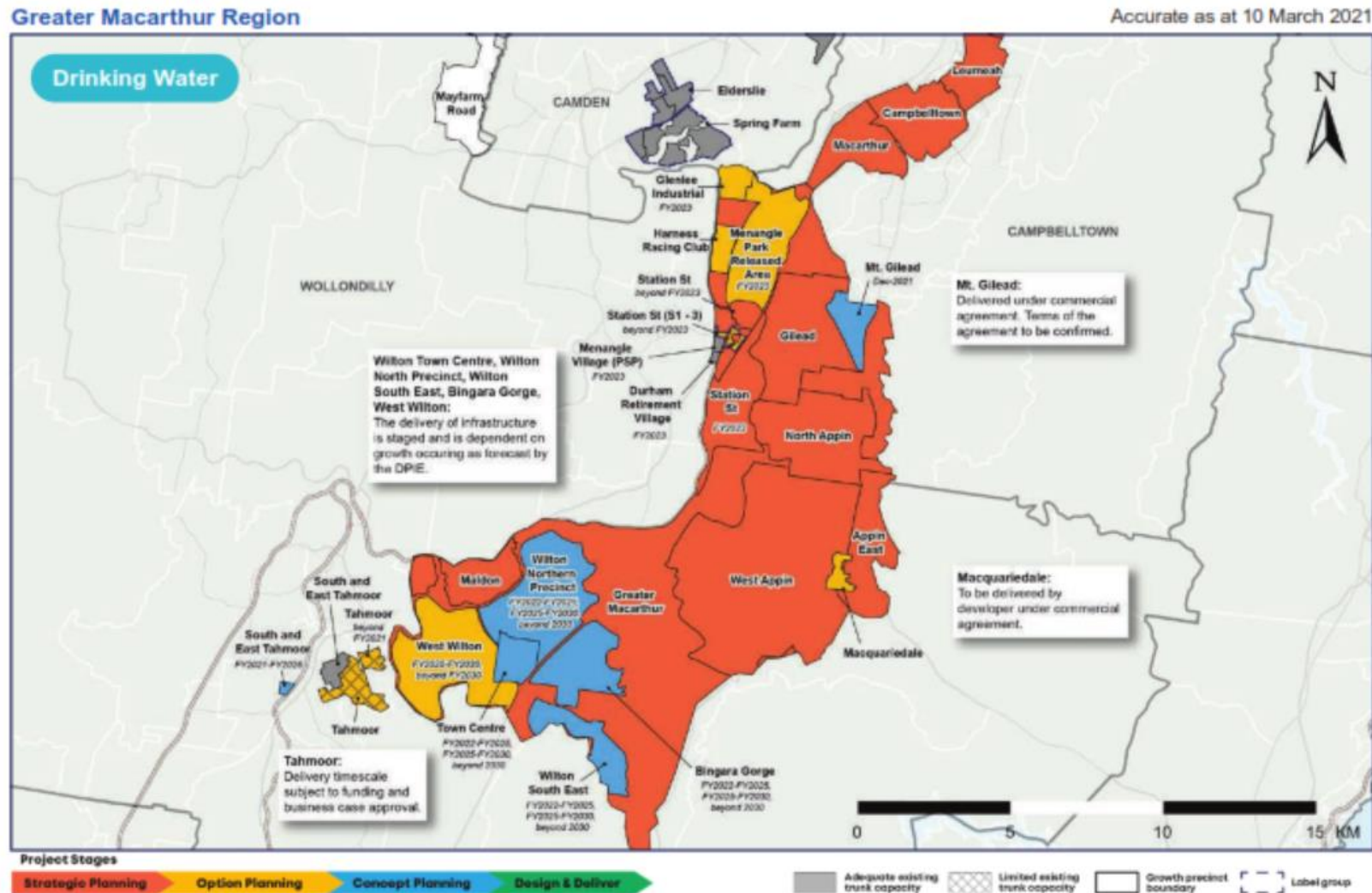
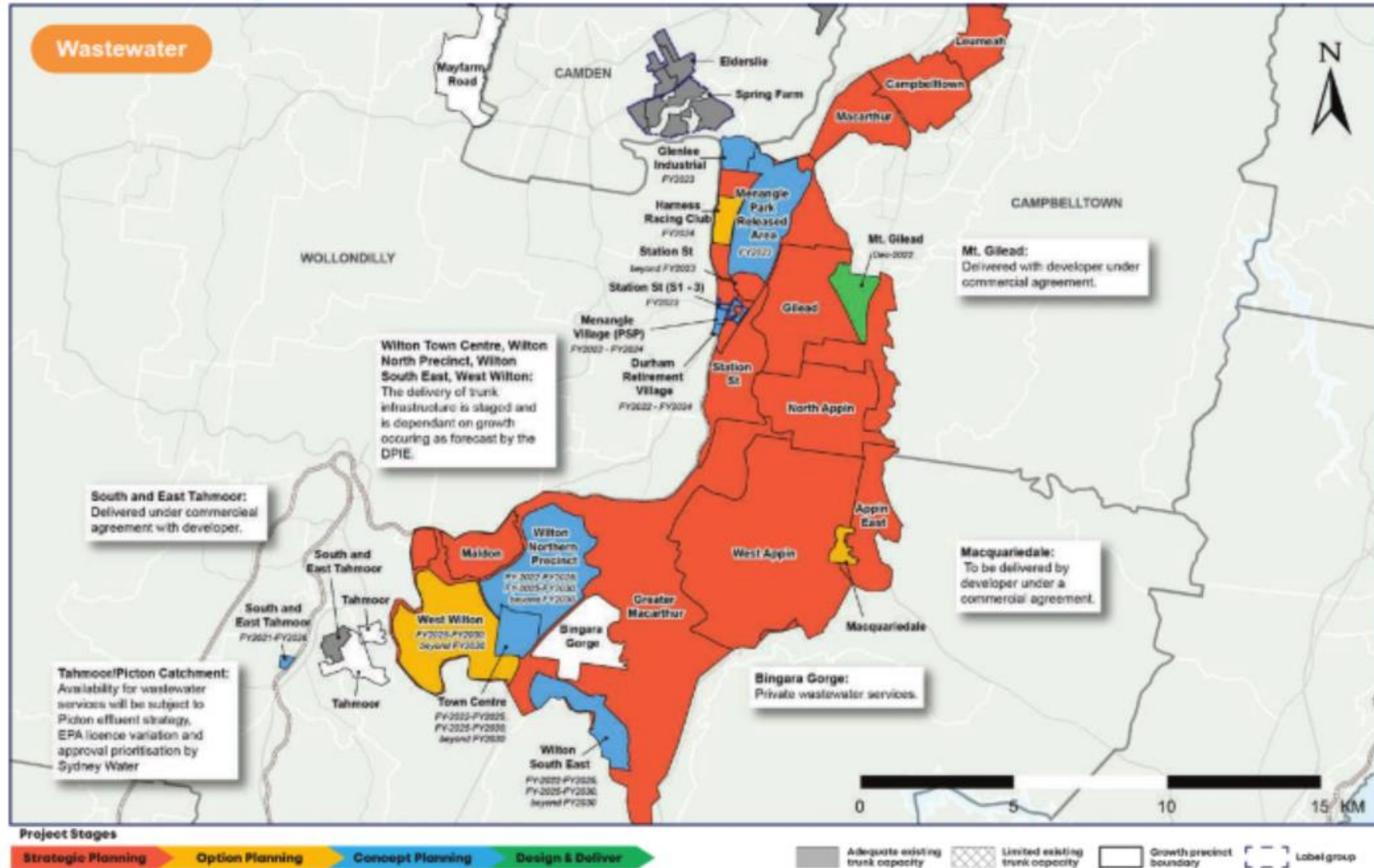


Figure A. 3: Greater Macarthur Region

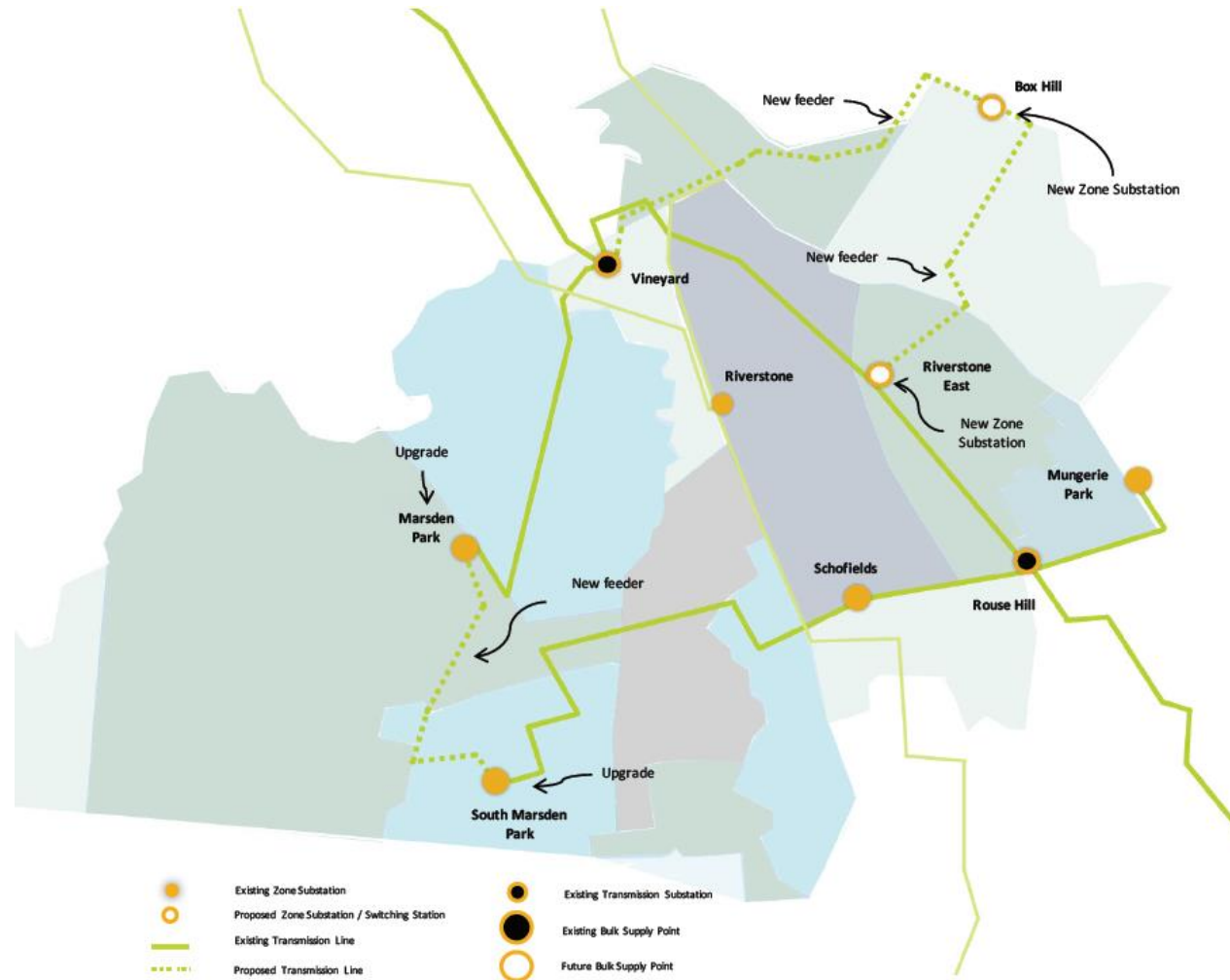




Source: Sydney Water (2020)

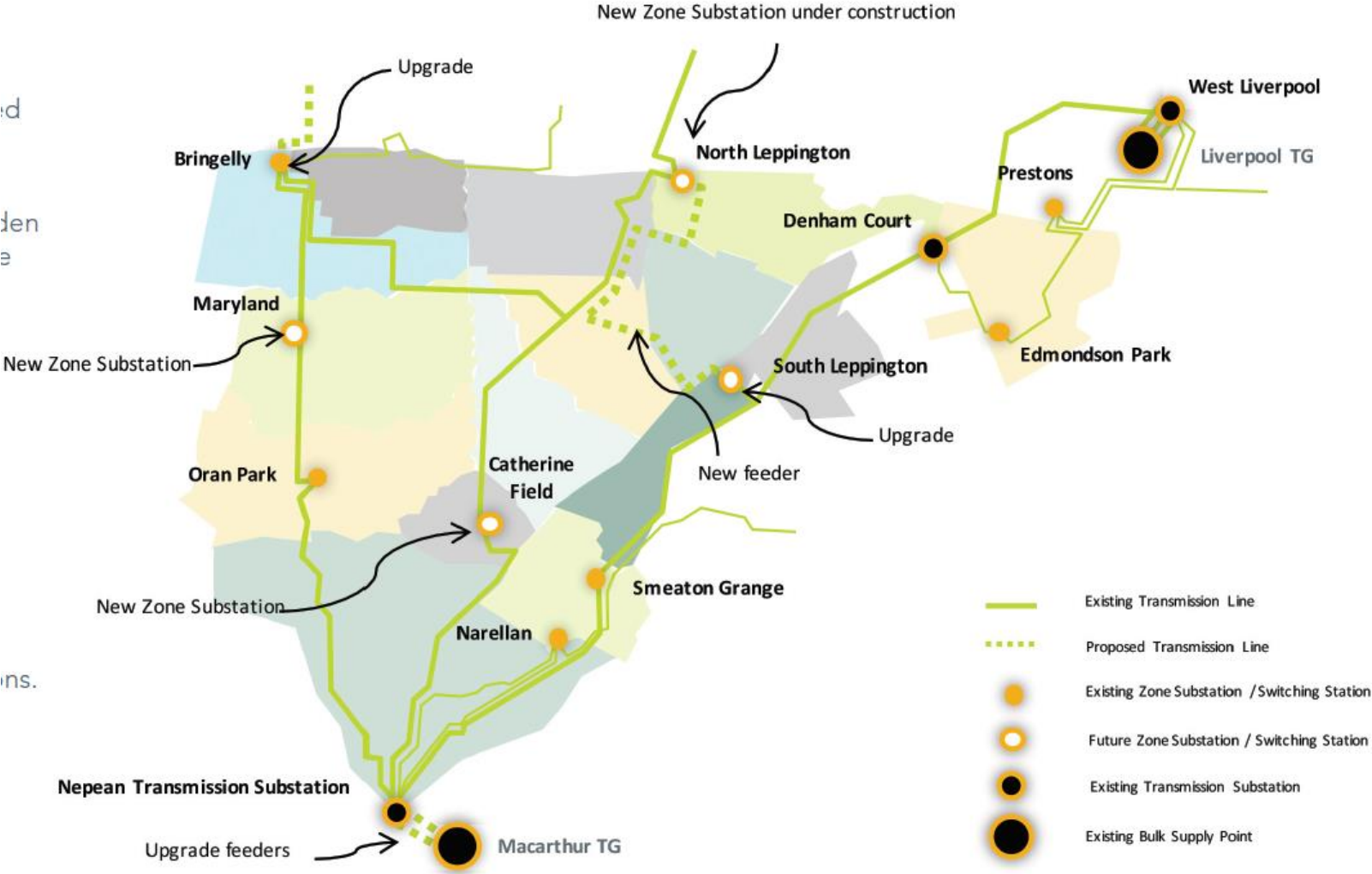
Existing and Proposed Electricity Assets

Figure A. 4: Existing and Proposed Electricity Assets, North West Growth Area



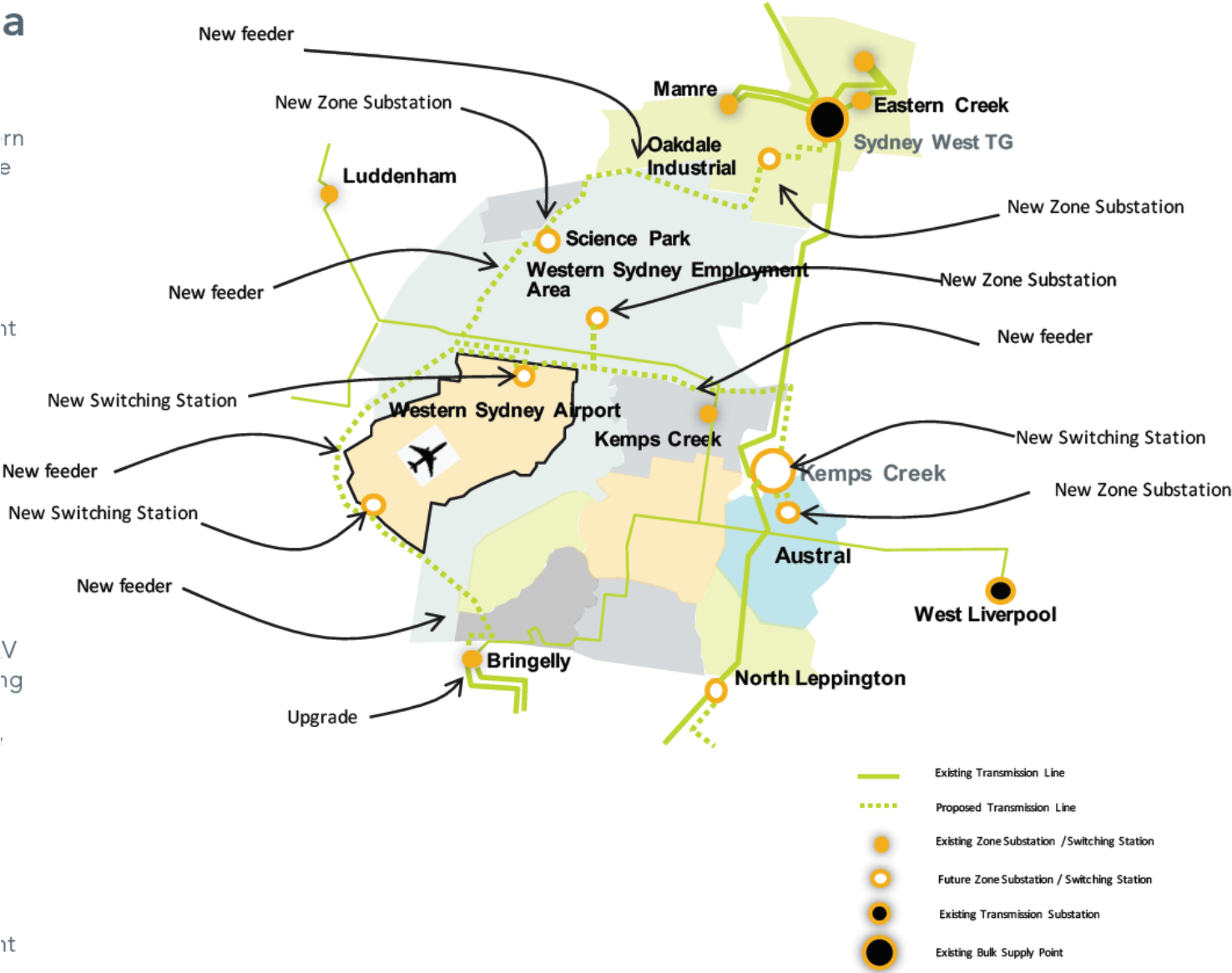
Source: Endeavour Energy (2019)

Figure A. 5: Existing and Proposed Electricity Assets, North West Growth Area



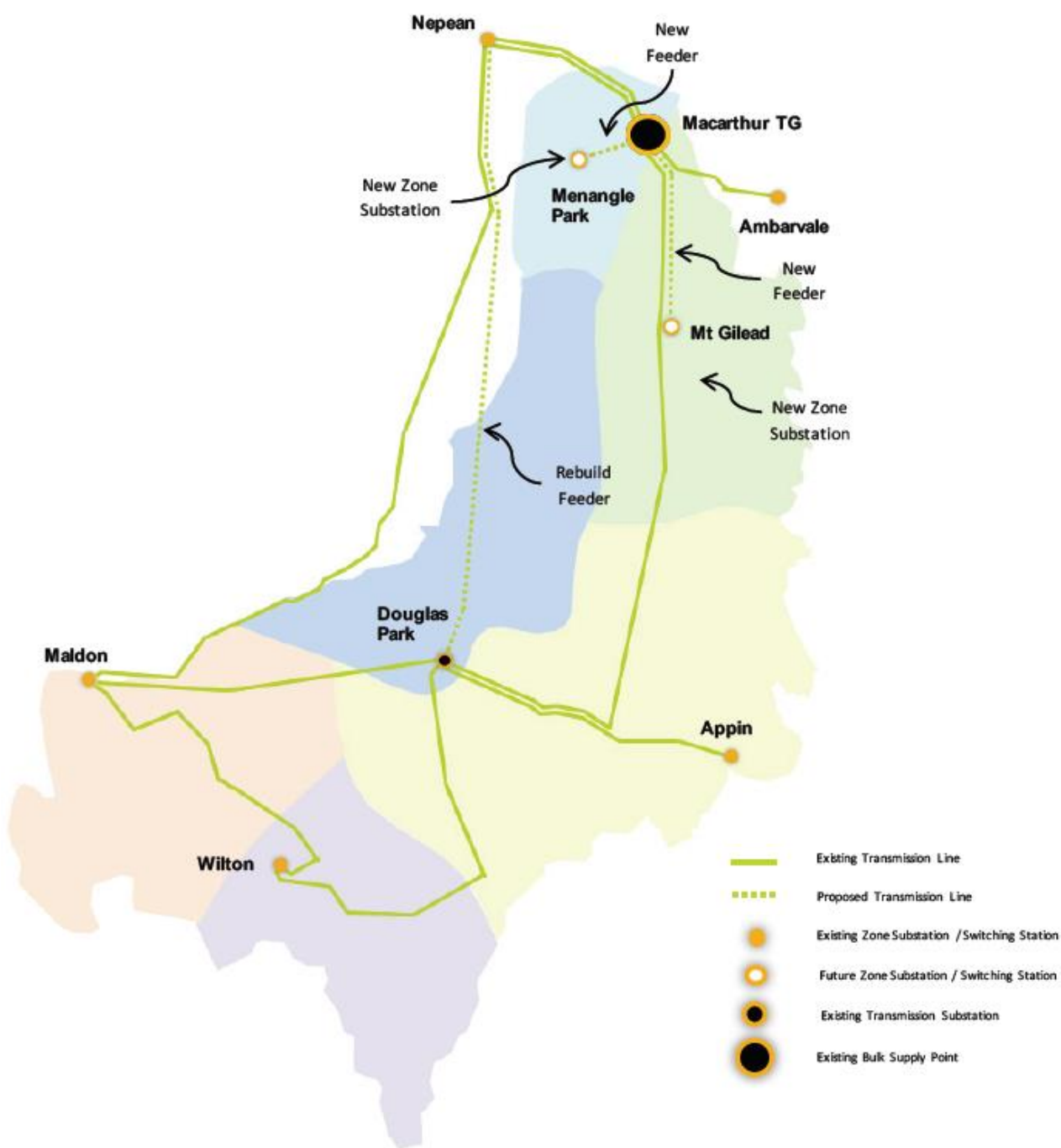
Source: Endeavour Energy (2019)

Figure A. 6: Existing and Proposed Electricity Assets, Western Sydney Employment Area



Source: Endeavour Energy (2019)

Figure A. 7: Existing and Proposed Electricity Assets, Greater Macarthur Growth Area



Source: Endeavour Energy (2019)

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