NORTHERN BEACHES - DEMOGRAPHIC ANALYSIS

FINAL
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Prepared for
Northern Beaches Council

Independent insight.

Certified

B

Corporation

SGS Economics & Planning | Independent insight.

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1. INTRODUCTION

SGS Economics and Planning has undertaken a study of the demographic profile of Northern Beaches and associated growth, opportunities and challenges as part of the LSPS process

Northern Beaches Council is embarking on a preparation of a Local Strategic Planning Statement (LSPS) and review of the Local Environmental Plans (LEP), to respond to the strategic directions outlined in the Greater Sydney Region Plan and the North District Plan prepared by the Greater Sydney Commission. These documents and strategies will guide land use development in the Local Government Area (LGA), with the LSPS setting out a 20-year vision, the special character and values that are to be preserved and how change will be managed into the future.

The LSPS presents a significant opportunity for local councils to strategically plan for the future of their LGA it will facilitate the delivery of various strategies and presenting an LGA wide structure plan to ensure that centres and communities grow in the way they need to and with the infrastructure that they require.

SGS Economics and Planning (SGS) has been commissioned by Northern Beaches Council to complete a Demographic Study as part of the LSPS process. The purpose of the Demographic Study is to provide strategic context and tell the story of the local government area as it stands at present. It also reveals major trends or proposed projects that will impact on the future of the local area. This is consistent with the LSPS Guideline prepared by the Department of Planning and Environment.

The following chapters outline the content of and process that informed this report, which is aligned with the original request received form Council:

Chapter 2 – Overview Map: Map indicating the geography nomenclature used throughout this report;

Chapter 3 – Key Insights: outlines the key insights from the policy review and spatial data analysis covering a wide variety of measures and themes.

Chapter 4 – Policy and Planning Context: Review of the relevant plans, policies and documents which are shaping the growth of the Northern Beaches LGA and the North District;

Chapter 5 – Places and connectivity: This chapter profiles and compares the strategic centres within Northern Beaches across of a number of parameters and connectivity measures;

Chapter 6 – People: Analysis and insights based on demographic information for the Northern Beaches LGA and North District sourced from the Australian Bureau of Statistics and Transport for NSW's Transport Performance Analytics;

Chapter 7 – Housing: Analysis and insights based on dwelling and household information for the Northern Beaches LGA and North District sourced from the Australian Bureau of Statistics and Transport for NSW's Transport Performance Analytics;

Chapter 8 – Jobs and Skills (Resident): Analysis and insights based on employment (residents) information for the Northern Beaches LGA and North District sourced from the Australian Bureau of Statistics and Transport for NSW's Transport Performance Analytics;

Chapter 9 – Jobs and Skills (Workers): Analysis and insights based on employment (workers) information for the Northern Beaches LGA and North District sourced from the Australian Bureau of Statistics and Transport for NSW's Transport Performance Analytics;

2. OVERVIEW MAP

FIGURE 1: GEOGRAPHY DEFINITION – MAP (2016)
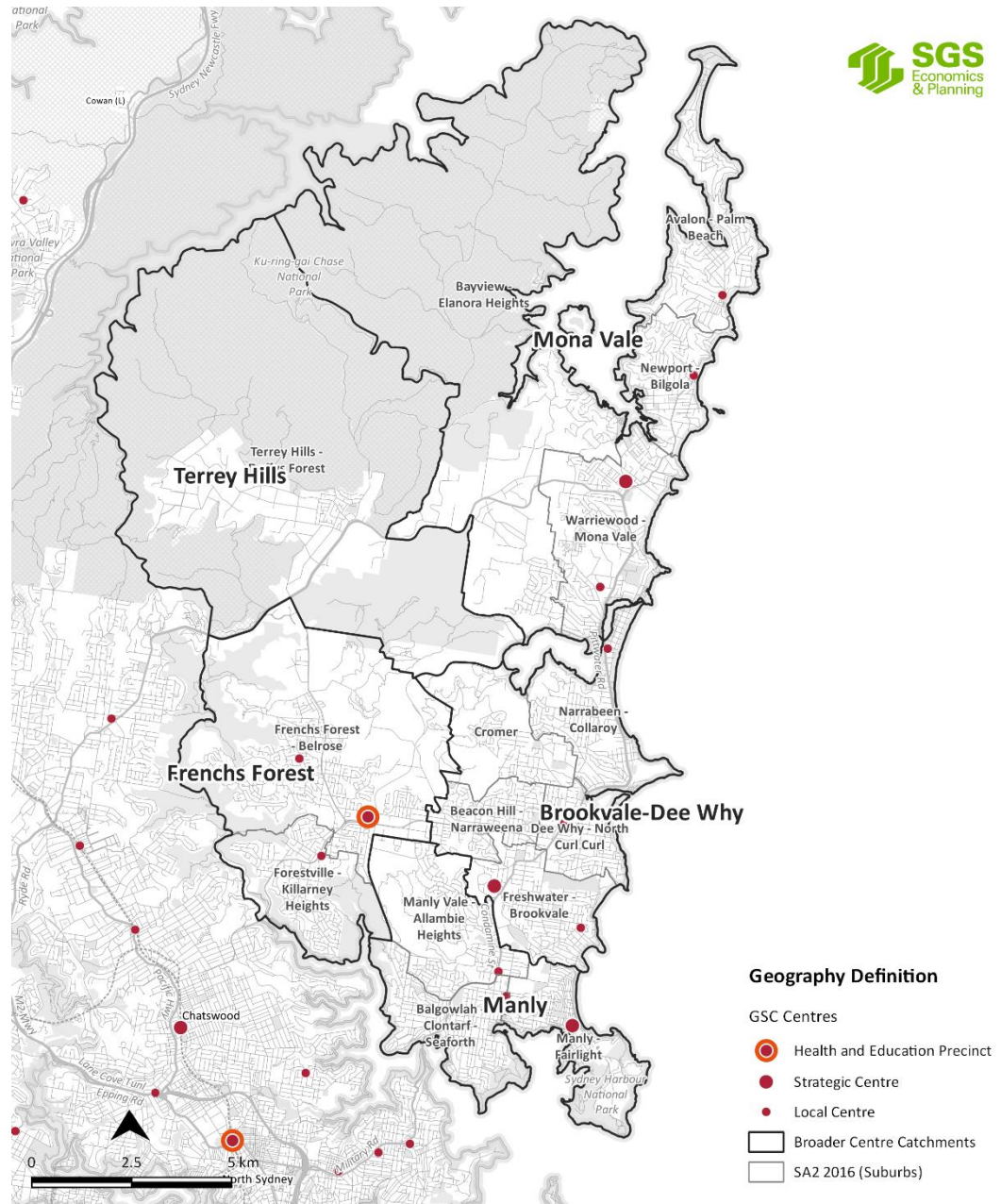
Source: ABS Census 2016 (TableBuilder Pro)

The *Broader Centre Catchments* (*Manly, Frenchs Forest, Brookvale-Dee Why, Terrey Hills* and *Mona Vale)* represent aggregations of ABS - Statistical Areas Level 2 (SA2) (2016) and are used for reporting data in tabular format throughout the report.

The SA2s have been used for most of the mapping (diagrams) throughout the report and are referred to as "suburbs".

3. KEY INSIGHTS

This chapter outlines the key insights derived from the policy review and spatial data analysis covering a wide variety of measures and themes

Note: Image references at the end of the section

A mix of vibrant centres

Northern Beaches has a mix of growing centres experiencing large-scale transformation on one side (Brookvale-Dee Why and Frenchs Forest) and more established, settled centres on the other (Mona Vale and Manly). Overall, there are five strategic centres identified in the Greater Sydney Commission's (GCS) policy framework - ***Brookvale-Dee Why***[1], ***Manly***, ***Mona Vale*** and ***Frenchs Forest*** which is also a health and education precinct. In addition, there are nine local centres identified as well:

- Avalon
- Balgowlah
- Forestville
- Freshwater
- Belrose
- Manly Vale
- Narrabeen
- Newport
- Warriewood

CENTRES				
	METROPOLITAN	**STRATEGIC**	**LOCAL**	**HEALTH AND EDUCATION PRECINCT** (SEE OBJECTIVE 21)
ROLE	Metropolitan centres are the economic focus of Greater Sydney, fundamental to growing its global competitiveness and where government actions and investment, including transport, will be focussed. The intent of these centres is to deliver very high levels of development and amenity. Metropolitan centres occur in two forms: single centres or a cluster of centres.	Strategic centres vary in size, location and mix of activities. They enable access to a wide range of goods, services and jobs. Strategic centres are expected to accommodate high levels of private sector investment, enabling them to grow and evolve. They will become increasingly important parts of the region's structure.	Local centres are important for day-to-day access to goods and services.	Health and education precincts can form parts of centres and include major hospitals, universities and medical research institutions, and connect the community to health and education services. They act as drivers of export services and provide major employment opportunities. They generally contain a principal referral hospital and tertiary education campus.

The policy envisions the strategic centres as evolving hubs of high-level private sector investment and growth. Their role and function within the district structure will become increasingly important enabling a wide range of goods, services and jobs.

The local centres are a key part in the broader network of centres, supporting the day to day needs of the local population by providing access to goods and services such as local retail, at a walkable and convenient distance.

Beyond the distinction between centre types (growing and established) there is also a difference between the centres with higher (Brookvale-Dee Why and Manly) and lower (Frenchs Forest and Mona Vale) population densities. These differences are evident across a number of indicators. The surrounding population catchments of higher density centres have a more varied housing stock, are more multicultural, have a younger population and smaller car ownership rates than lower density centres. Access to transport drives a variety of housing stock, reduces the need for private vehicle ownership and the restaurants and activities attract a diverse population.

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[1] Brookvale-Dee Why are identified in the North District Plan as a combined strategic centre and for the purpose of the report, they are referred to as a combined centre

Brookvale-Dee Why

Of the strategic centres, the *Brookvale-Dee Why* centre surrounding catchment has:

- Good connectivity to the other centres and a large workforce base (only centre accessible from all other Northern Beaches centres within 30min by using public transport)
- Almost 50% of the population growth (+7,090 people) has occurred in this area between 2011 and 2016 and approximately a quarter of the dwelling growth (+1,569 dwellings) - population density of 4,287 people per km² compared to Northern Beaches average of 2,675 people per km²
- It also represents the largest employment hub on the Northern Beaches, accommodating approximately one third of the LGA's jobs (27,492)

Brookvale-Dee Why has the youngest and most culturally diverse population, along with Manly. It also has higher rates of Overseas migration to the area. The area has experienced continued transformation in the past 5-10 years and is a thriving cultural and employment centre. Its housing mix is diverse and more affordable, with nearly half of the dwellings in the Flat, Units or Apartment housing typology. The population density is well above the LGA average - 4,287 people per km² and the area is home to about 90,000 people.

About 50% of residents work locally, with other popular work destinations being the City and North Sydney/Chatswood. The most preferred transport option for local workers (within Northern Beaches) are cars. However, people commuting to the City (and to some degree North Sydney) prefer using Public Transport options.

Brookvale-Dee Why has a high proportion of Population Serving jobs (see Appendix 2 – Broad Industry Categories (BIC) Definition for detailed industry breakdown). This is driven in a large part by Warringah Mall but also its good position and connectivity - making it easier for people to access regional level services. It represents a popular work destination for people from other centre catchments within the LGA as well.

Frenchs Forest

Frenchs Forest 's surrounding catchment has:

- Broad 30-minute public transport coverage and connectivity with neighbouring LGA centres (Chatswood)
- Smaller population densities compared to Brookvale-Dee Why and Manly centre catchments
- About 10% of the Northern Beaches' population growth (+1,611 people) has occurred in this area between 2011 and 2016 and approximately 5% of the dwelling growth (+317 dwellings)
- Important employment centre with approximately 15,000 jobs, but most of the workforce is located in the secondary catchment of the centre[2]
- Very high use of private vehicles (cars) for commuting to work (both residents and workers)

Frenchs Forest is a family orientated area, with the highest proportion of Couples with Children and greatest home ownership rates on the Northern Beaches. Detached dwellings account for the vast majority (90%) of housing types. The area also has a high number of cars per household compared to most of the other centres.

About a quarter of the residents work locally, and most of the remaining in the City and North Sydney/Chatswood. The most preferred transport option for local workers are cars, while people commuting to the City have a higher use of public transport. The future development of Frenchs Forest as a health and education precinct may create future challenges related to increasing congestion and parking demand. See section 5.1 Frenchs Forest for a more detailed description.

The employment mix is relatively diverse although most jobs relate to the nearby business parks. The centre also has a higher proportion of Industrial jobs compared to the other centres. Workers in the centre come from both within and outside of the LGA, reflecting the strategic nature of the centre.

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[2] Secondary catchments are those areas that can access strategic centres (i.e, Frenchs Forest) within 30min by using public transport, but less frequently than areas in the primary catchment

Manly

Manly centre surrounding catchment has:

- Relatively contained catchment and poor connectivity to other areas within the LGA, but good direct public transport connection to CBD via ferry
- High population density and workforce to population ratio
- About 20% of the Northern Beaches' population growth (+3,122 people) has occurred in this area between 2011 and 2016 and approximately 10% of the dwelling growth (+610 dwellings)
- Highest job growth of all the Northern Beaches' centres - 20% between 2011 and 2016 (+2,489 jobs)
- Very multicultural area, with high number of knowledge intensive workers
- Highest use of public and active transport[3] options amongst the centres

With Brookvale-Dee Why, Manly has the youngest and most culturally diverse population of the Northern Beaches' centres. It also has a higher number of Overseas migrants in the area. While growth over the past five years has been low, Manly has the largest population density of all the centres - 4,544 people per km² - reflecting its established compact structure and diverse housing options.

The two hotspots of employment for local residents are within Manly's surrounding and the Sydney CBD. This reflects some of the lifestyle choices residents make in living in and around Manly. Local workers have a high utilisation rate of active transport options while close to 75% of the CBD commuters use public transport (the highest rate on the Northern Beaches). Around half of the residents are employed within the Knowledge Intensive sector (primarily as Professionals and Managers) confirming the area's appeal to young professionals and acknowledging the relatively high housing and rent costs of the area.

Manly has the highest proportion of Health and Education[4] and Knowledge Intensive jobs (as proportion of all jobs in Manly), compared to the other centres, which could be a result of its skilled workforce but also its geographic position, large number of educational facilities and providers but also historical factors (i.e. earlier settlement with stronger sense of place). Most jobs are filled by local residents, but also people coming from the Brookvale-Dee Why area.

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[3] Active transport options include cycling and walking
[4] The catchment contains the Manly Hospital that has closed post-census (after 2016) and might change this profile. However, theremay be opportunities related to the Manly Hospital site and in North Head.

Mona Vale

Mona Vale centre surrounding catchment has:

- Mid-range 30min public transport area coverage
- Around 20% of the population growth (+3,272 people) has occurred in this area between 2011 and 2016 and approximately 15% of the dwelling growth (+1,192 dwellings)
- Lower densities - 2,032 people per km²
- Most diverse employment centre on the Northern Beaches with about 18,500 jobs
- Very high uses of private vehicles (cars) for commuting to work (both residents and workers)

Mona Vale, as with Frenchs Forest, is a family-orientated area with a large proportion of Couples with Children and high home/car ownership rates. It has a relatively diverse housing typology, although still dominated by detached dwellings (70%) - some suburbs experiencing an increase in this category (Avalon-Palm Beach and Newport-Bilgola). Most of the semi-detached housing has recently occurred in Warriewood-Mona Vale, with a historical pattern of Flat, Units or Apartment occurring between the centre and the beach and detached dwellings concentrating in the West section of the area.

More than 50% of residents work locally within Mona Vale (very high self-containment rate) with about 3,000 workers (10%) commuting to the City. The use of private vehicles (cars) for commuting to work is the highest amongst the centres, but so is the number of people that Worked from Home. This reflects the relative distance from major centres of employment, particularly those outside of the LGA.

Mona Vale's employment mix is amongst the most diverse out of all of the centres, ranging from industrial to population serving uses, which testifies to the self-sufficiency of the area. The largest number of the jobs is filled by local residents and the remainder with workers from other parts of the LGA.

Major infrastructure delivery for a more connected place

The Greater Sydney Regional Plan (GSRP) identifies the Beaches Link and Western Harbour Tunnel as committed motorways to improve accessibility to the Harbour CBD, Chatswood and Macquarie Park from the Northern Beaches. They provide improved North-South connections from Frenchs Forest and East-West connections from Manly. The Plan also identifies a potential Northern Beaches to Chatswood bus improvement to better connect the Northern Beaches Hospital and the Northern Beaches with the corridor.

Recent media announcements from Transport and Infrastructure Minister and Council have confirmed the intention to have frequent, reliable bus services running from Dee Why to Chatswood every 10min between 6am and 10am allowing Northern Beaches commuters to link up with Sydney Metro Services at Chatswood.

Improved bus services between the Northern Beaches and Chatswood, as well as an east-west public transport connection from Mona Vale to Macquarie Park are initiatives identified for investigation over the next 10 years.

Frenchs Forest is intended to be one of the largest growth areas in the Northern Beaches LGA, with the Northern Beaches Hospital development intended to anchor the presence of a Health and Education precinct as well as improved transport links, creating opportunities to invest in a major new centre and remove the disparate nature of the current Frenchs Forest employment centres.

Family orientated, but ageing population

The Northern Beaches is attractive to and populated by families, in particular Couples with Children - also reflected in the high numbers of Mature Adults (45-65 years) and Youth (5-20 years). The Beaches' natural amenity, safety and high social scores (i.e. SEIFA) act as attractors to these profiles. However, the population is ageing and at higher rates than Greater Sydney and North District averages. This is especially noticeable in the decline of Adults (30-45 years) and Young Adults (20-30 years) on the Northern Beaches, with most Young Adults migrating to more vibrant locations closer to Sydney CBD – Sydney, Inner West and North Sydney, most likely due to lifestyle, amenity, proximity to work and nightlife.

The influx of younger people and couples to the area, in particular Adults, is primarily coming from sources outside of the LGA - Overseas and Internal migration (other parts of Sydney or Australia). This means that, assuming trends continue, Northern Beaches growth trends will be driven by an inflow of people from outside of the LGA. Most of the Local residents (resided on the Northern Beaches for five years or more) are in the Mature Adult and Retiree[11] (65+ years) groups. In general, the Overseas migration rates are lower when compared to the District and Greater Sydney with most migrants finding home in the Manly or Brookvale-Dee Why centres.

Diverse, but less multicultural than Greater Sydney

Northern Beaches has a noticeable proportion of people of European ancestry (constituting about 65% of the community). These are principally people of British ancestry - close to half of the total population. Other relevant ancestry groups are Irish, Southern European and Western European. The most multicultural suburbs are Dee Why-North Curl Curl, Beacon Hill-Narraweena and Forestville-Killarney Heights. People of Australian decent constitute about 20% of the population.

English is the main language spoken at home, spoken by 85% of the population. This reflects the high proportion of residents with British ancestry. This is a lot higher than the District and Greater Sydney averages. However, Northern Beaches has a much lower proportion of Chinese Asian, Southern Asian and Southern European ancestries, as well as fewer people speaking Chinese, Indo-Aryan and Middle Eastern at home when compared to Greater Sydney and District averages. This indicates that while the population may have a diverse age profile, it has relatively low levels of multiculturalism.

A socially advantaged area

Northern Beaches is amongst the most socially advantaged areas in Sydney and more broadly Australia. The high SEIFA (Socio-Economic Indexes for Areas) scores are indicative not only of the high standard of living and skilled population, but also the larger number of opportunities available to the local residents. Small pockets of disadvantaged communities are located in Narraweena and Dee Why while the highest scoring suburbs are Balgowlah-Clontarf-Seaforth and Frenchs Forest-Belrose

Larger proportion of home ownership, with declining housing affordability

Home ownership rates are higher when compared to the District and particularly Greater Sydney, which is most likely correlated to generally larger household incomes and being considered a place to raise a family. However, the number of Outright owned estates is declining, with an increase of properties Owned with a Mortgage or Rent based tenures. - indicative of decreasing housing affordability as well as perhaps newer residents purchasing in the area with a mortgage. At a suburb level, home ownership rates are higher in Frenchs Forest and Mona Vale while the Brookvale-Dee Why and Manly centre catchments have an equal number of households renting and owning a home.

Increasing numbers of cars

Car ownership rates are relatively high, with Northern Beaches having a larger proportion of households with Two Motor Vehicles, and a lower proportion of those with No or One Motor Vehicle - compared to the District and Greater Sydney. This is understandable, considering the relative lack of mass transit and geographic isolation of parts of the LGA. The car ownership rates are especially increasing in the number of households with Three and Four and more Vehicles.

Per household rates have grown between 2011 and 2016 - by 4% with the average number of Motor Vehicles per household at about 1.7 cars. See 7.5 Motor Vehicle Ownership or more details.

A transition from tradies to office workers

Northern Beaches has a mix of occupations and education profiles, ascertaining the area's attractiveness to a variety of people and professions - as a place to live and work. Compared to the District and Greater Sydney, the area has a higher proportion of people with VET[12] qualifications and workers employed in the Population Serving industries.

However, most of the population is employed within the Knowledge Intensive sector (one third of residents are Professionals) - particularly high numbers in the Manly centre catchment, suburbs of Manly-Fairlight and Balgowlah-Clontarf-Seaforth and Manly Vale-Allambie Heights to a lower extent. Other areas with higher proportions of Knowledge Intensive workers are also Forestville-Killarney Heights and Frenchs Forest-Belrose.

Self-sufficient economy with the majority of people employed locally

Northern Beaches offers its residents a number of employment opportunities, having both the highest proportion of local jobs filled by local residents (self-sufficiency) and residents working locally (self-containment) in Greater Sydney - a testament to its strong economy and willingness of people to work locally (over 80%). This has a positive impact on reducing the potential for commuter-related private vehicle and public transport trips out of the LGA.

The majority of jobs on the Beaches are population serving

Northern Beaches is primarily a Population Serving economy (high job numbers particularly in Retail Trade), with strong growth trends in the Health and Education sector as well. The Industrial category is experiencing a decline in job numbers following city and nationwide trends.

Cars are still the preferred method of travel to work

Most commuters traveling within, to the Northern Beaches or other areas outside of the LGA use Private Vehicles (cars) for their commute to work - approximately 70%. With an increasing population and car ownership rates, this might pose a threat by further increasing congestion and travel times. Residents within the broader catchments of Manly and Brookvale-Dee Why have higher utilisation rates of Public and Active Transport options, while North sections of the LGA (Mona Vale catchment) have a prominent share of people Working from Home.

More people working from home, with increasing distance

Trends are showing that there has been a slight increase in the proportion of people working from home on the Northern Beaches, historically and compared to Greater Sydney, but also that there are relatively more people working from home in areas further away from Sydney CBD in the Northern Beaches (i.e. Mona Vale). Flexible workplace arrangements are an essential part of today's labour market and have a profound impact on the broader economy. There are numerous reasons why businesses and employee seek this type of arrangement, amongst other, in order to retain valuable staff, attract skilled members who add value, promote a culture of work life balance resulting in greater employee satisfaction and other.

From a locational point of view, this creates opportunities for local centre through increased retail trade or even by supporting innovative working arrangements (i.e. shared office space for local workers). New micro businesses might also seek to relocate to nearby centres as a result of continued growth, utilising local office space.

Brookvale - Dee Why at the crossroad of activity

Dee Why has good connectivity to other parts of the LGA, a large workforce base and is the only centre accessible from all other Northern Beaches centres, within 30min by using public transport. About 50% of the population growth has occurred in the *Brookvale-Dee Why* broader catchment area, and a third of jobs is located here - representing the largest employment hub on the Northern Beaches. Due to its positioning and accessibility, as well as its already established employment base, this centre can help further drive employment growth and serve as the primary location for regional services.

Image reference in order of appearance:

1. Centres Hierarchy - Greater Sydney Regional Plan - A Metropolis of Three Cities 2018
2. New Dee Why Centre - https://www.commercialview.com.au 2019
3. Development of Northern Beaches Hospital in Frenchs Forest - Department of Planning and Environment - NSW Government 2018
4. Manly Corso - ManlyAustralia.com 2014
5. Commercial offices in Mona Vale - Real Commercial 2019
6. B-Line at Dee Why - Daily Telegraph 2019
7. Beaches Link Tunnel Plan - NSW Government 2017
8. Family based area with ageing population - Shutterstock images 2019
9. Young adults and youth at beach - Migration SA 2019
10. Increasing car ownership rates - Shutterstock images 2019
11. Knowledge intensive worker in office - Shutterstock images 2019
12. Industrial worker - Shutterstock images 2019
13. Large number of retail jobs - ABC 2016
14. Congestion on Spit Bridge - Daily Telegraph 2019
15. Home office - https://www.beaming.co.uk/ 2018

4. POLICY AND PLANNING CONTEXT

This section of the report reviews a set of strategically important planning documents from different levels of government and agencies

Greater Sydney Region Plan

The Greater Sydney Commission's Greater Sydney Region Plan (GSRP) is a metropolitan strategy that seeks to align the provision of infrastructure investment and services with growth trends. It envisions Sydney as a *Metropolis of Three Cities:* the Western Parkland, Central River and Eastern Harbour City. Under this vision, Sydney would be a 30-minute city, with everyone able to access jobs, services and major centres.

The Plan seeks to deliver this vision through ten directions with associated objectives, priorities and actions to make Sydney more liveable, productive and sustainable. Given that the Northern Beaches sits within the Eastern Harbour City, its drivers of growth and change are relevant to the LGA's future planning strategies. The Plan identifies the Eastern Harbour City as a 'mature mix of well-established communities' with a number of infrastructure and transport investments projected to improve the liveability of the area.

725,000 additional homes are needed to meet the growing needs of Greater Sydney over the next 20 years, with the Northern District (City of Ryde, Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, Mosman, North Sydney, Northern Beaches and Willoughby Local Government Areas) required to provide 25,950 homes by 2021 and 92,000 by 2036. The vision broadly identifies future transport corridors and areas of investment within the LGA to appropriately support locations of new housing and facilitate greater job connectivity.

The GSRP identifies the Beaches Link and Western Harbour Tunnel as committed motorways to improve accessibility to the Harbour CBD, Chatswood and Macquarie Park. They provide improved north-south connections from Frenchs Forest and east-west connections from Manly. However the Plan notes that the corridors are indicative only and subject to a final business case. Since then, the corridors have been reviewed by the NSW Government and Roads and Maritime Services[5] with the release of a detailed design in July last year remaining consistent with the GSRP's illustration of the corridors. The population will be able to benefit from the committed projects as through improved accessibility to employment, services, and retail hubs.

The Plan also identifies a potential Northern Beaches to Chatswood bus improvement to better connect the Northern Beaches Hospital and the Northern Beaches with the corridor.

Manly, Brookvale-Dee Why, Frenchs Forest and Mona Vale are the identified strategic centres of the Northern Beaches LGA. Furthermore, Frenchs Forest has also been identified as a Health and Education Precinct and Planned Precinct. In October 2018, a $600m hospital opened in Frenchs Forest[6], anchoring the region's projected growth as a Health and Education Precinct. As a proposed Collaboration Area, the GSRP has also identified several

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[5] RMS 2018, *Western Harbour Tunnel and Beaches Link take major steps forward*, NSW Government, accessed 31 January 2019, <https://www.nsw.gov.au/your-government/the-premier/media-releases-from-the-premier/western-harbour-tunnel-and-beaches-link-take-major-steps-forward/>.

[6] Cross, J 2017, 'Northern Beaches Hospital ahead of schedule and due to open October 30, 2018', *The Daily Telegraph*, 25 August, accessed 31 January 2019, <https://www.dailytelegraph.com.au/newslocal/manly-daily/northern-beaches-hospital-ahead-of-schedule-and-due-to-open-october-30-2018/news-story/d91e6c5f38cb0070e662d13c08067afd>.

agencies that should work together with the Northern Beaches Council in order to grow more jobs, housing and infrastructure in the precinct. The increased economic development may impact the area's desirability and demographics of its local population.

The GSRP identifies the Northern Beaches B-Line as an existing infrastructure investment project. The B-Line is a bus rapid transit network that has been operational since November 2017 and runs between Mona Vale and Wynyard Park. Since its opening the B-Line has been successful, carrying 5.9 million passengers in its first year[7]. The recently improved connections, as well as proposed transport corridors, may further increase the area's desirability and impact the demographics of its local population into the future.
Other strategic directions within the GSRP which may have implications for the demographics of the Northern Beaches include:

- Providing an increased supply of housing that is diverse and affordable, which would meet the needs of the Council's different households. Council is progressing towards meeting this goal having undertaken an Affordable Housing Needs Analysis to support its successful inclusion in SEPP70.
- Celebrating and retaining diversity of people in our cities, and providing services to meet their changing needs, for which Council will need an understanding of the likely demographic mix in the Council in future.
- Strategic centres seeking co-location of a wide mix of land uses including residential.

North District Plan

The North District Plan (NDP) implements the GSRP's strategic directions with more detailed directions and planning priorities to be implemented in local planning for the Northern District.

The Plan identifies strategic priorities for the Northern Beaches LGA at a local scale including Avalon, Newport, Warriewood, Narrabeen, Freshwater, Manly Vale, Balgowlah, Belrose and Forestville as local centres. Local centres, as a collection of shop and health, civic or commercial services, play a key role in creating a sense of place within the local community. Strengthening these areas may increase the area's desirability and impact its demographic mix into the future.

The Plan sets a strategic 20 year housing target of 92,000 additional dwellings for the Northern District between 2016-2036. To accommodate population growth, a housing supply target of **3,400 additional dwellings** between 2016-2021 has been set for the Northern Beaches, 13% of the Northern District's total. If the proportion is replicated over a longer time-frame, a population increase in the Northern Beaches would be expected.

As the Northern Beaches contains significant environmental conservation areas towards the north and west of the LGA, the majority of urban development has historically occurred closer to the lagoons and beaches in the east, with little undeveloped land left. This means that most of the growth will need to occur through infill development and renewal of centres, which may impact the lifestyle enjoyed by existing residents.

In considering the type and distribution of housing supply, the NDP has identified several demographic trends that may affect Council's approach including:

- 20% of the District's population to be aged 65 and over in 2036, up from 16% in 2016.
- Number of single-person (mostly single parent) and couple only houses are expected to increase by 2036.
- Households of couples with children will still remain the highest proportion of households.

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[7] RMS 2018a, *B-Line success – 5.9 million passenger trips in first year*, NSW Government, accessed 31 January 2019, <https://www.transport.nsw.gov.au/news-and-events/media-releases/b-line-success-59-million-passenger-trips-first-year>.

- An extra 21,900 students will need to be accommodated in both government and non-government schools in the North District by 2036, a 20% increase. While most of this growth will occur in Ryde (8,160), a significant proportion of it will also occur in the Northern Beaches (3,454).
- Northern Beaches residents speak 99 languages other than English including Spanish and Italian

Furthermore, strategic centres are also projected for significant growth, potentially increasing the attractiveness of the Northern Beaches as a place to live and work.

Frenchs Forest is intended to be one of the largest growth areas in the Northern Beaches LGA, with the Northern Beaches Hospital development intended to anchor the presence of a Health and Education, sustainable precinct as well as improved transport links. This vision will be further realised with the creation of a vibrant centre with new homes and jobs. 12,000-13,000 jobs are projected for 2036, up from its 2016 estimate of 9,300 jobs. This growth may shift the demographics of the Northern Beaches towards a greater proportion of high wage local employment and health professionals working and/or residing in the LGA into the future.

Brookvale-Dee Why is an industrial and mixed-use area supporting niche manufacturing wholesale industries in the day, as well as a vibrant local night-time economy. It contains Warringah Mall, one of the largest retail areas in Greater Sydney, as well as a TAFE NSW campus. Its 2016 estimate of 20,000 jobs is projected to grow to 23,000-26,000 by 2036. This growth could potentially encourage a wider mix of people living and working in the LGA.

Manly has been identified as an area bringing a variety of cultural, tourist, and entertainment activities in close proximity to Manly Beach, one of the most popular beaches in Sydney. It is well served by public transport and includes a ferry and bus service from the Sydney CBD. Its 2016 estimate of 5,000 jobs is projected to grow to 6,000-6,500 by 2036. This growth could potentially encourage a greater presence of visitors and tourists in the LGA, and increase the desirability of living there with more local jobs available.

Mona Vale is a mixed use area containing retail, commercial, community, light industrial and residential services. Given its improved transport connection via the B-Line, and further improvements to travel time intended, its 2016 estimate of 4,300 jobs is projected to grow to 5,000-6,000 jobs by 2036. This growth could encourage a greater proportion of people living in the LGA or surrounding LGAs to work in Mona Vale as the centre becomes more accessible. The increased economic development at each of these strategic centres may impact the LGA's overall desirability and demographics of its population.

The implementation of the Coast Walk will see improved connectivity along the coast, including Council's four coastal lagoons and improved links to parks, open spaces, bushland, walking and cycling paths.

Future Transport 2056

Future Transport 2056 is Transport for NSW's overarching strategy to deliver transport infrastructure investment over the next 40 years. The vision is built on the following six outcomes:

- Customer Focused
- Successful Places
- A Strong Economy
- Safety and Performance
- Accessible Services
- Sustainability

In terms of the Northern Beaches, the Western Harbour Tunnel and Beaches Link are committed transport projects due to be delivered over the forthcoming years, furthering the improved accessibility of the area facilitated by the Northern Beaches B-Line.

Improved bus services between the Northern Beaches and Chatswood, as well as an east-west public transport connection from Mona Vale to Macquarie Park are initiatives identified for investigation over the next 10 years.

The Strategy also identifies city shaping corridors from the Harbour CBD to Brookvale-Dee Why and Mona Vale by 2056. A strategic road connecting the Northern Beaches to Macquarie Park and Newcastle via the Northern Beaches is a visionary initiative potentially undergoing investigation over the next 20+ years.

Completion of the major transport infrastructure projects discussed in *Future Transport 2056* but not yet committed to by the NSW Government or in planning would likely be accompanied by intensive redevelopment. This would change the demographic characteristics of the areas around these projects, with consequences for the level and type of services that the Council needs to provide.

Northern Beaches Planning for Our Sustainable Future January 2019

The Northern Beaches Planning for Our Sustainable Future was a booklet released by Council intending to help the community understand the changes underpinning planning decisions for the LGA.

Within the booklet, Council identified a number of trends which directly relate to and help to inform what the future demographics of the LGA may look like. Some of these include the following:

- The Northern Beaches needing to house and service around 35,000 more people over the next 20 years.
- 3,400 new homes by 2021.
- 7,400 to 12,000 more jobs by 2036 mostly in Brookvale-Dee Why and Frenchs Forest
- Separate houses making up 56% of the household type in the LGA, significantly above high density (26%) and medium density living (17%).
- Couples with children making up 37% of the household composition in the LGA, significantly above couples without children (25%), lone person (21%), and one parent families (3%).
- An **ageing population**, having seen a 3.3% increase in persons aged 70-74 from 2011 to 2016 compared to the Greater Sydney average of 2.8%.
- **Smaller proportion of young adults** compared to Greater Sydney, with 27.3% aged between 20-37 compared to the Greater Sydney average of 30.5%.
- 45.5% of total households are **families.**
- Housing is **unaffordable** for owners and renters as housing costs make up 53% and 65% of moderate income households respectively.
- Land for jobs being in short supply.
- Council seeking to have more people living and working locally.

These trends will help to inform future planning strategies for the Northern Beaches as it identifies groups within its demographics which will need attention over the forthcoming years, as well as centres which may require further planning.

The Geography of Time- Mapping Sydney's Effective Job and Service Density

The Committee for Sydney published a paper in 2017 which seeks to map the relative accessibility of jobs and services to a person within 30 minutes, given state metropolitan strategies are striving towards Sydney as a collection of 30-minute cities.

In short, the paper investigates how many jobs a worker can access from their home by public transport or private vehicle in 30 minutes.

The paper found that the Northern Beaches has relatively average effective job density, with the number of jobs accessible within 30 minutes in Sydney on a weekday morning ranging

from 0-400,000, in comparison to Drummoyne which has the highest number of jobs accessible at 786,929.

The Northern Beaches has slightly 'below average' results, related to the access of hospitals, schools and shopping centres within a 30 minute cut off time.

With major transport infrastructure investments in the pipeline for the LGA, as well as the strengthening of strategic centres as retail and employment hubs, the effective job and service density of the Northern Beaches could improve. This would impact the area's desirability as a place to live and work, potentially changing the demographic characteristics of the LGA.

Northern Beaches Council LEP Review- November 2018

This LEP Review was undertaken by Council in response to the release of the *Greater Sydney Region* and *North District Plan* by the Greater Sydney Commission in March 2018, identifying priorities for investigation in the development of Council's new LEP.

Its discussion of key areas of change and growth into the future within the LEP Review incorporate references to a number of explicit and implicit demographic trends which may impact the mix of the area. Some of these include the following:

- A focus on a well-functioning transport network, integrated access to local jobs and affordable homes for key workers- identified as vital considerations for the Northern Beaches' future liveability.
- Major challenges for the Northern Beaches being an ageing population and housing affordability.
- The working age population, while increasingly made up of highly skilled professionals and managers, is projected to decline.
- Young adults are leaving for more affordable coastal locations, to access education opportunities and live closer to job opportunities aligned to their skills and aspirations.
- Community Strategic Plan – SHAPE 2028- A plan that, amongst other objectives, intends to create a more connected and caring community and advocates the embracement of its diverse sports and recreational culture. This may impact the type and level of demographic services Council will need to provide in the future.
- There is a presence of Indigenous culture within the LGA, with 0.6% of the Northern Beaches population identified as Aboriginal and/or Torres Strait Islander descent.
- Some communities are considered disadvantaged. The Northern Beaches is characterised by relative socio-economic advantage, however, relative advantage is considerably diverse across the LGA.
- High car use rates for Northern Beaches residents, with 60% travelling to work via car and 80% of household trips (social, recreation, education and shopping trips).

Northern Beaches Council LEP Review – Appendix 2 – 'Health Check'

This section compiled by Council seeks to identify how closely aligned Council's existing local environmental plans are to the relevant actions provided in the North District Plan.

Its references to existing council plans, strategies and research that contribute to those actions provides insight into the factors shaping how the LGA will grow, and posing questions about how that may change the demographics of the area.

Predominantly, a number of transport infrastructure priorities were identified by Council. Each of these would increase the liveability of the LGA as accessibility to jobs and services would improve synonymously, potentially changing the demographic mix of the LGA.

These transport projects include a Bus Rapid Transit Service between Brookvale-Dee Why, Frenchs Forest and Chatswood, followed by services between Mona Vale and Macquarie Park. A high frequency mass transit service for the Northern Beaches as part of its draft transport

strategy MOVE 2038 as well as a turn up and go public transport service east-west of the LGA were also identified.

Furthermore, Council seeks a Green Star Communities rating for the Frenchs Forest Planned Precinct and Ingleside Growth Area. This would involve making the area healthier, safer and more inclusive for people of all ages and abilities. A potential *Social Plan* done separately for the whole LGA, would attract a diverse demographic mix to the area, with consequences for the level and type of services that the Council may need to provide.

Council also envisions the Northern Beaches as an 'Ideas Incubator' and be the go-to place for IOT (Internet of Things), start-ups and researchers. While this would foster the growth of innovative projects, ideas and initiatives in the area, it would also introduce a greater number of people living entrepreneurial lifestyles in the Northern Beaches which may need to be planned for accordingly.

Local Housing Strategy Guideline

The Local Housing Strategy Guideline was put together by the Department of Planning and Environment (DP&E) in order to provide a step-by-step process for producing a local housing strategy.

It encourages the alignment of housing growth directions with an appropriate type and level of service for its demographics. Some of these demographic services include schools, social services and health facilities.

Council will need an understanding of its demographic mix in the future in order to cater for its population and consequently meet the guidelines of the local housing strategy.

5. PLACES AND CONNECTIVITY

This chapter profiles and compares the strategic centres within Northern Beaches across of a number of parameters and connectivity measures

Disclaimer: When comparing growth rates between multiple time periods, Compound Annual Growth Rate (%) has been used. The Compound Annual Growth Rate (CAGR %) is a useful measure of growth over multiple time periods. It can be thought of as the growth rate that gets you from the initial value to the ending value.

As Census data (2006-2016) has exclusively been used for reporting historical data/trends in this study, this can be imagined as a Compounded *Census* Growth Rate, representing growth rates at five year (5-yr%) increments. The same can be applied for future projections (TPA data), representing a forecasted growth rate each five years (5-yr%).

For more information, please reference: https://www.investopedia.com/terms/c/cagr.asp

Percentage Point (PP%) – represents the difference between two percentages. Percentage point is used to show the changes in an indicator with respect to its previous standings (e.g. between growth rates in 2016 and 2011);

Due to differences in methodology and the way data is captured, direct comparisons between absolute ABS historical data values (2006-2016) and TPA (Transport Performance and Analytics) forecasts (2021-2036) is strongly discouraged. It is recommended to use general trends and proportions when observing future trends and comparing across. There is also limited comparison for some indicators over Census periods due to changes in how ABS captures data;

Place of Usual (PUR) - some undercounting inevitably occurs for various reasons during Census count. Although adjustments are available for certain indicators in the form of Estimated Resident Population (ERP) these haven't been used in this report, in order to achieve consistency across all indicators;

Place of Work (POW) - ABS has introduced a new imputation method in 2016 for assigning workplace destination (Destination Zones) to persons that provided partial or no information about their place of work. The imputed data was excluded from this report, in order to achieve compatibility across previous Census years and 2016. As different imputations are applied to different geographies as well, LGA totals will not match sums of lower level geographies (e.g. SA2);

Broad Industry Category (BIC) - represents Greater Sydney Commission (GSC) broad categorisation of 1 digit ANZSIC industries;

Some discrepancies might be present in the Suburb level data, due to changes in ABS geographies between 2011 and 2016;

Totals derived from summing up suburb level data are slightly different to LGA totals due to ABS perturbations applied to protect the confidentiality of individuals;

Note:

- Greater Sydney will be referred to as GS
- North District will be referred to as District

IMPORTANT: Read disclaimer prior to commencing analysis

5.1 Frenchs Forest

Frenchs Forest has a broad 30min public transport coverage but small densities in its *Primary Catchment* compared to other centres. This is a result of relatively good connectivity but a predominately homogeneous detached housing typology. However, the *Secondary Catchment* encompasses not only major strategic centres within *Northern Beaches* (e.g. *Brookvale-Dee Why)* but also neighbouring councils (e.g. *Chatswood* within *Willoughby Council)* making *Frenchs Forest* the most inter-LGA connected centre within Council.

Overall, the *Workforce to Population Ratio* is somewhat smaller compared to the other catchments, most likely due to a larger proportion of people outside the labour force. The total *Workforce* numbers, within the *Primary Catchment,* is also modest compared to the other centres, which might pose a challenge for the future development of *Frenchs Forest* as a health and education precinct. The challenges could be related to a lack of workers in the direct vicinity of the centre, possibly generating demand in the *Secondary Catchment* and creating longer travel times for workers.

TABLE 1:   FRENCHS FOREST 30MIN CENTRE PROFILE (2016)

Centre Catchment[8]	Population	Workforce	Area (km²)	Workforce to Population Ratio	Population Density (per km²)
Primary (100% access)	35,330	17,482	15.18	49%	2,327
Secondary (<100% access)	172,966	91,073	58.49	53%	2,957
Total	208,296	108,555	73.67	52%	2,827

Source: ABS Census 2016 (TableBuilder Pro) and Open Data NSW - General Transit Feed Specification (GTFS) 2019

FIGURE 2: FRENCHS FOREST HOSPITAL PLAN REZONING ARTISTS IMPRESSIONS

Source: Daily Telegraph 2017

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[8] Areas within the Primary Catchment have access to the centre, within each minute of AM peak hour (7-9AM), by using public transport and a 30min cut off time - i.e. 100% access
Areas within the Secondary Catchment have access to the centre, occasionally within the AM peak hour (7-9AM), by using public transport and a 30min cut off time - i.e. <100% access

Frenchs Forest - 30min City

Accessibility - AM Peak*

- 1 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%
- Broader Centre Catchments
- SA2 2016

*Testing accesibility (30min) to centres, usng public transport, at 1min interval during the AM peak (7-9am).

Source: SGS Economics and Planning 2019 and Open Data NSW - General Transit Feed Specification (GTFS) 2019

Most workers commute to Frenchs Forest by using private vehicles, despite relatively good public transport connectivity, in particular from the suburbs of *Dee Why-North Curl Curl* and *Beacon Hill-Narraweena.* Large numbers of people locally (within the *Frenchs Forest* broader catchment itself) also use private vehicles to get to work, potentially providing an opportunity for planning policy targeted at increasing the use of *Active Transport* options in this area.

Considering the large number of commuters coming from the suburbs of *Narrabeen-Collaroy* and *Warriewood-Mona Vale,* there might also be options for new bus routes. Noticeably, *Frenchs Forest* has the highest influx of workers from other LGAs in comparison to the other centres.

FIGURE 4: ORIGIN AND METHOD OF TRAVEL OF WORKERS TO FRENCHS FOREST (POW) – MAP (2016)
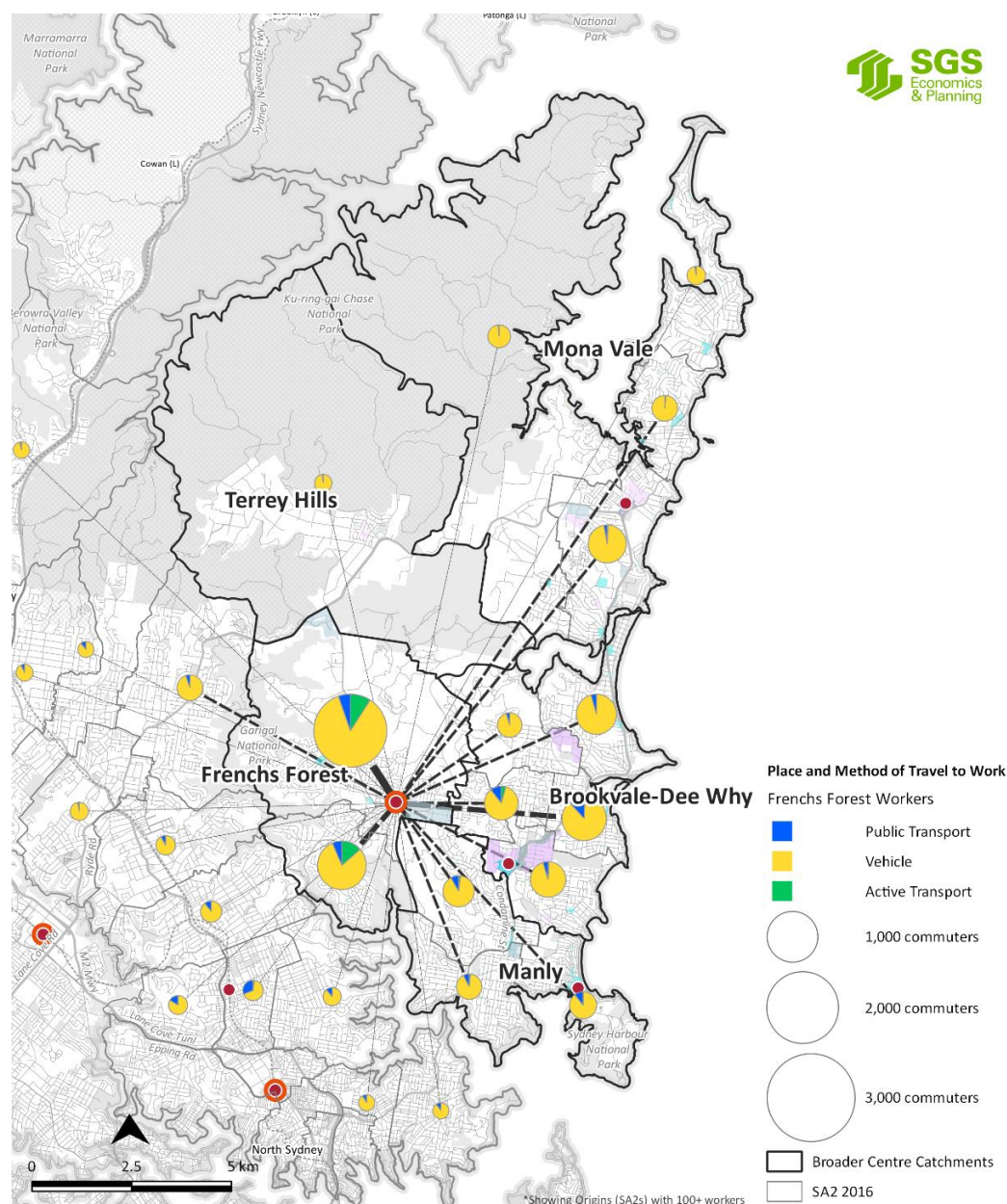
Source: ABS Census 2016 (TableBuilder Pro)

TABLE 2:   FRENCHS FOREST BROADER CATCHMENT COMMUTER PROFILE - INCOMING (2016)

Centre	Public Transport	Vehicle	Active Transport	Other	Jobs
Frenchs Forest	8%	81%	3%	9%	14,757

Source: ABS Census 2016 (TableBuilder Pro)

5.2   Brookvale-Dee Why

Brookvale-Dee Why has the largest *Primary Catchment* area and *Population Density* (very high compared to GS averages as well) out of all of the centres within Northern Beaches. It is also the only centre that connects to all other centres within 30min providing an ideal opportunity for the location of regional services in this area. It possesses good connectivity to local centres on the Lower North Shore (*Mosman, Cremorne* and *Neutral Bay).*

Compared to the other centres, it has the largest *Population* and *Workforce,* providing potential for further employment and development opportunities.

TABLE 3:   DEE WHY 30MIN CENTRE PROFILE (2016)

Centre Catchment	Population	Workforce	Area (km²)	Workforce to Population Ratio	Population Density (per km²)
Primary (100% access)	92,982	51,931	23.90	56%	6,125
Secondary (<100% access)	136,453	72,247	43.66	53%	2,333
Total	229,435	124,178	67.56	54%	3,114

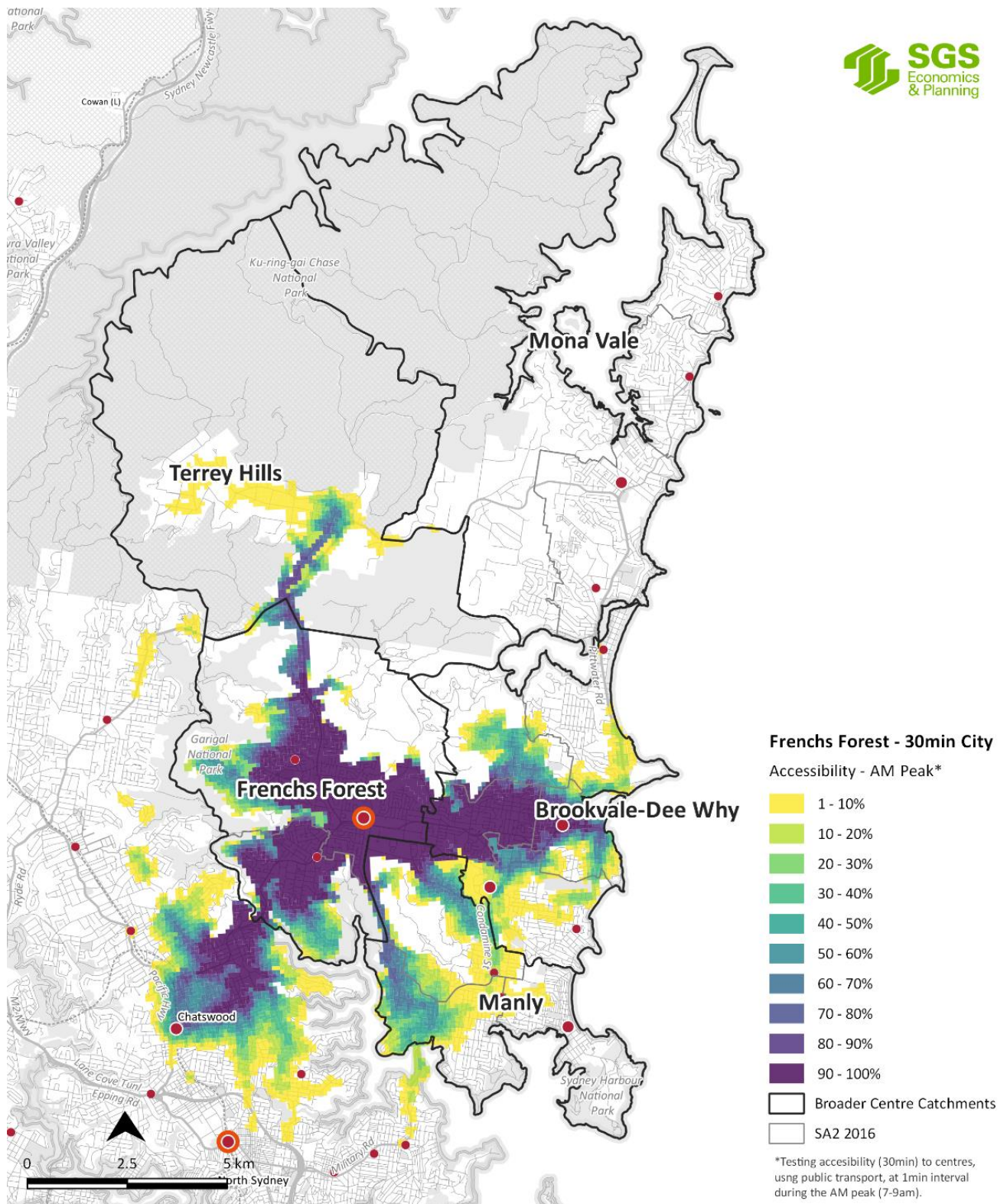Source: ABS Census 2016 (TableBuilder Pro) and Open Data NSW - General Transit Feed Specification (GTFS) 2019

FIGURE 5: DEE WHY'S NEW TOWN CENTRE

Source: Meriton 2018
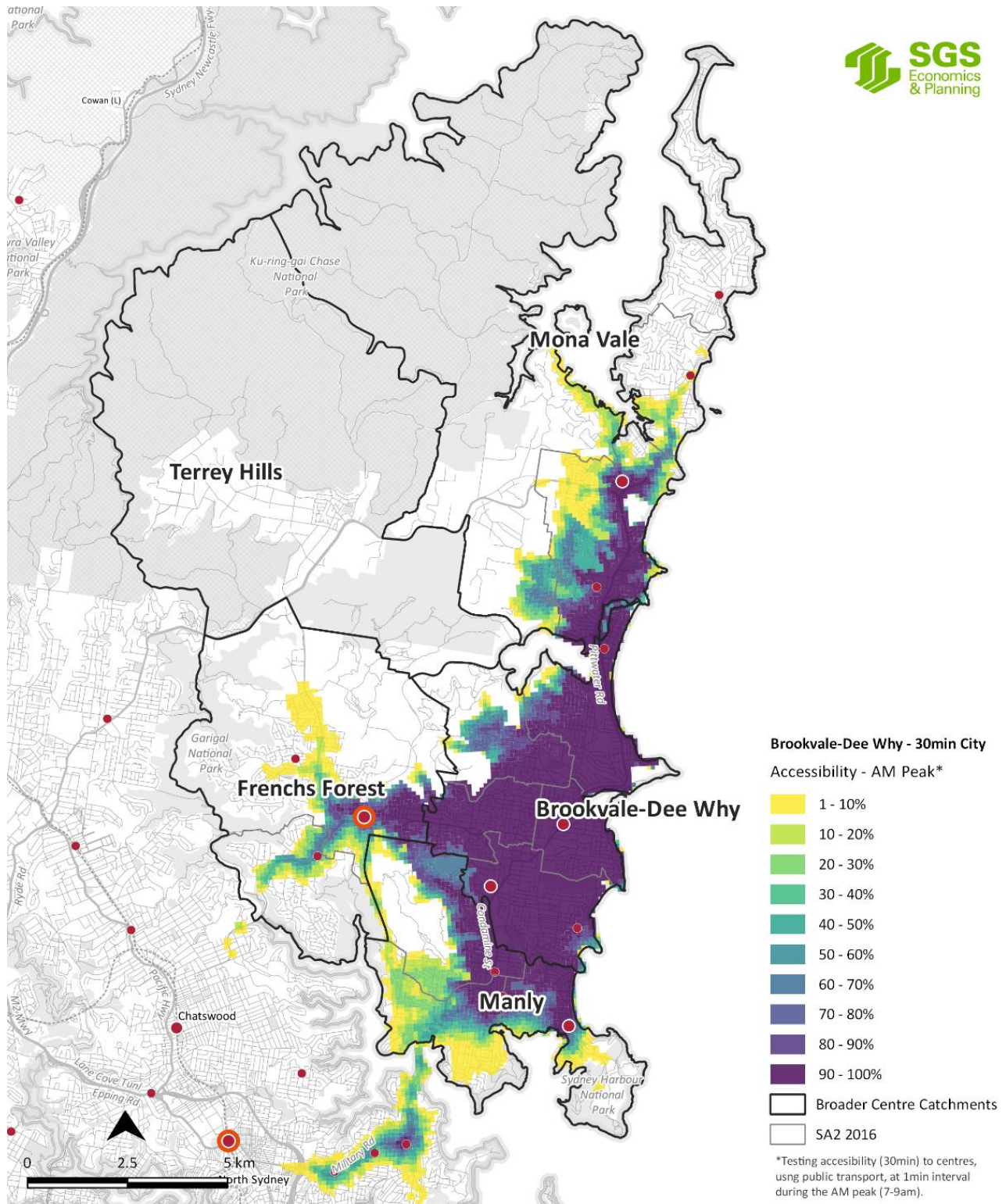
Source: SGS Economics and Planning 2019 and Open Data NSW - General Transit Feed Specification (GTFS) 2019

Brookvale-Dee Why has a larger proportion of workers commuting with *Public* and *Active Transport* options compared to *Frenchs Forest* and *Mona Vale*, but still relatively modest numbers considering its good bus network/connectivity. This is particularly the case within the broader catchment itself (local workers-residents).

One of the key challenges in the future will be to further stimulate *Public* and *Active Transport* use with local resident workers (living and working within the *Brookvale-Dee Why* broader catchment), but also commuters coming from other major centres, in particular *Frenchs Forest* and *Mona Vale.*

FIGURE 7: ORIGIN AND METHOD OF TRAVEL OF WORKERS TO BROOKVALE-DEE WHY (POW) – MAP (2016)
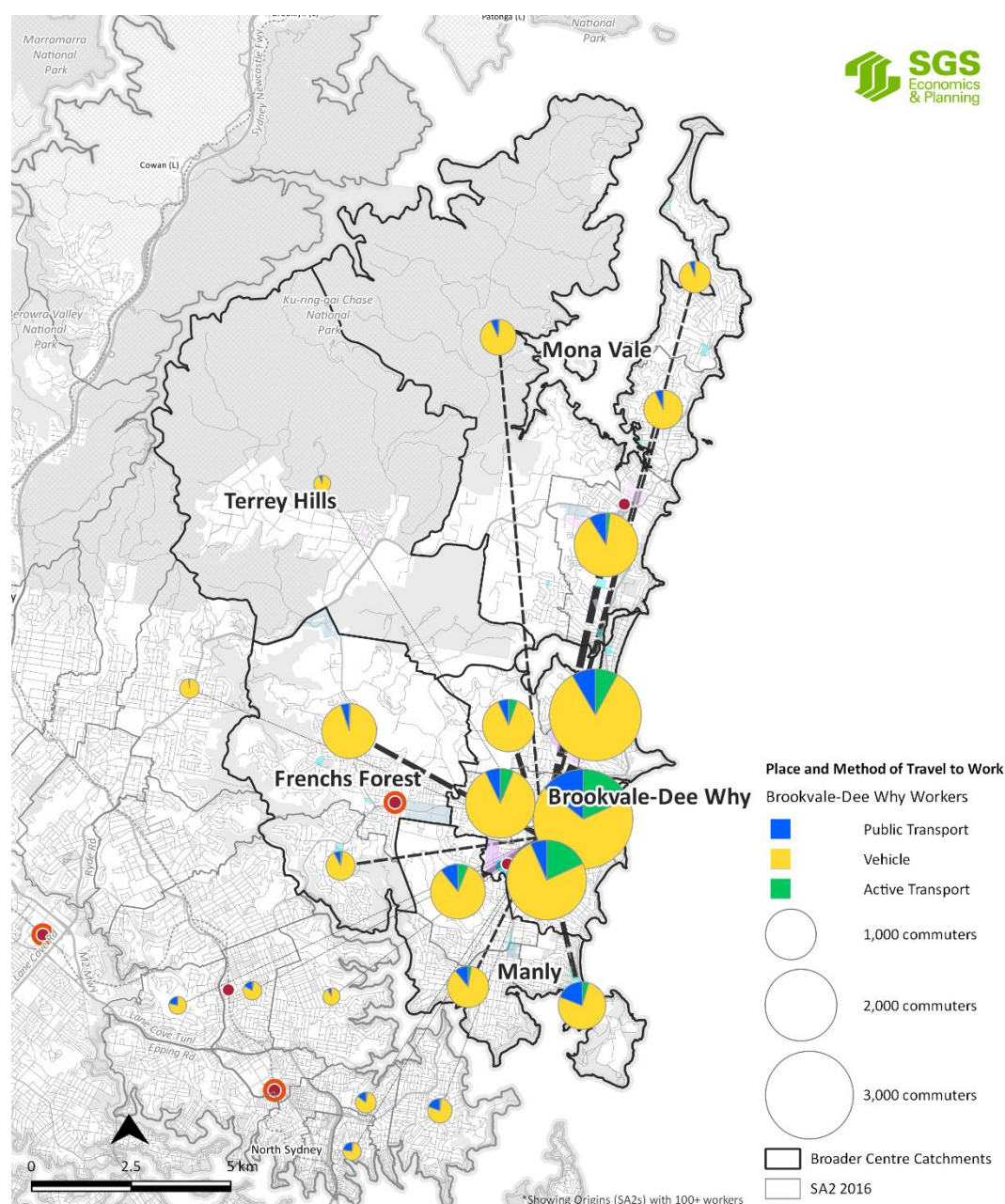
Source: ABS Census 2016 (TableBuilder Pro)

TABLE 4:   BROOKVALE-DEE WHY BROADER CATCHMENT COMMUTER PROFILE - INCOMING (2016)

Centre	Public Transport	Vehicle	Active Transport	Other	Jobs
Brookvale-Dee Why	10%	75%	6%	9%	27,492

Source: ABS Census 2016 (TableBuilder Pro)

5.3   Manly

Manly has a relatively contained catchment and poor connectivity to other areas within the LGA. However, the high *Population Density* and *Workforce to Population Ratio* do compensate for the lack of coverage, creating a compact 30min city. The high *Workforce to Population Ratio,* especially within the *Primary Catchment* testifies to a high number of people in the labour force and overall younger population.

Improved connectivity with the *Brookvale-Dee Why* and *Frenchs Forest* centres with express bus routes could further increase the centres coverage and *Population/Workforce* numbers.

TABLE 5:   MANLY 30MIN CENTRE PROFILE (2016)

| Centre Catchment	Population	Workforce	Area (km²)	Workforce to Population Ratio	Population Density (per km²)
Primary (100% access)	32,430	19,257	6.48	59%	5,005
Secondary (<100% access)	75,877	41,269	23.23	54%	3,266
Total	108,307	60,526	29.71	56%	3,645

Source: ABS Census 2016 (TableBuilder Pro) and Open Data NSW - General Transit Feed Specification (GTFS) 2019

FIGURE 8: MANLY TOWN CENTRE

Source: sydneyimages.com.au 2016

FIGURE 9: 30MIN ACCESSIBILITY TO MANLY DURING AM PEAK– MAP (2019)

Manly - 30min City

Accessibility - AM Peak*

- 1 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%
- ☐ Broader Centre Catchments
- ☐ SA2 2016

*Testing accesibility (30min) to centres, usng public transport, at 1min interval during the AM peak (7-9am).

Source: SGS Economics and Planning 2019 and Open Data NSW - General Transit Feed Specification (GTFS) 2019

Manly has a high proportion of people commuting with *Active Transport* options, in particular within its broader catchment, but also from the suburb of *Freshwater-Brookvale.* The use of *Public Transport* is proportionally higher compared to the *Mona Vale* and *Frenchs Forest* centres, but overall there is a smaller number of commuters coming from areas outside of the centre catchment. This might be a result of the poor connectivity to other parts of the LGA, but also high local self-sufficiency within *Manly.*

FIGURE 10: ORIGIN AND METHOD OF TRAVEL OF WORKERS TO MANLY (POW) – MAP (2016)
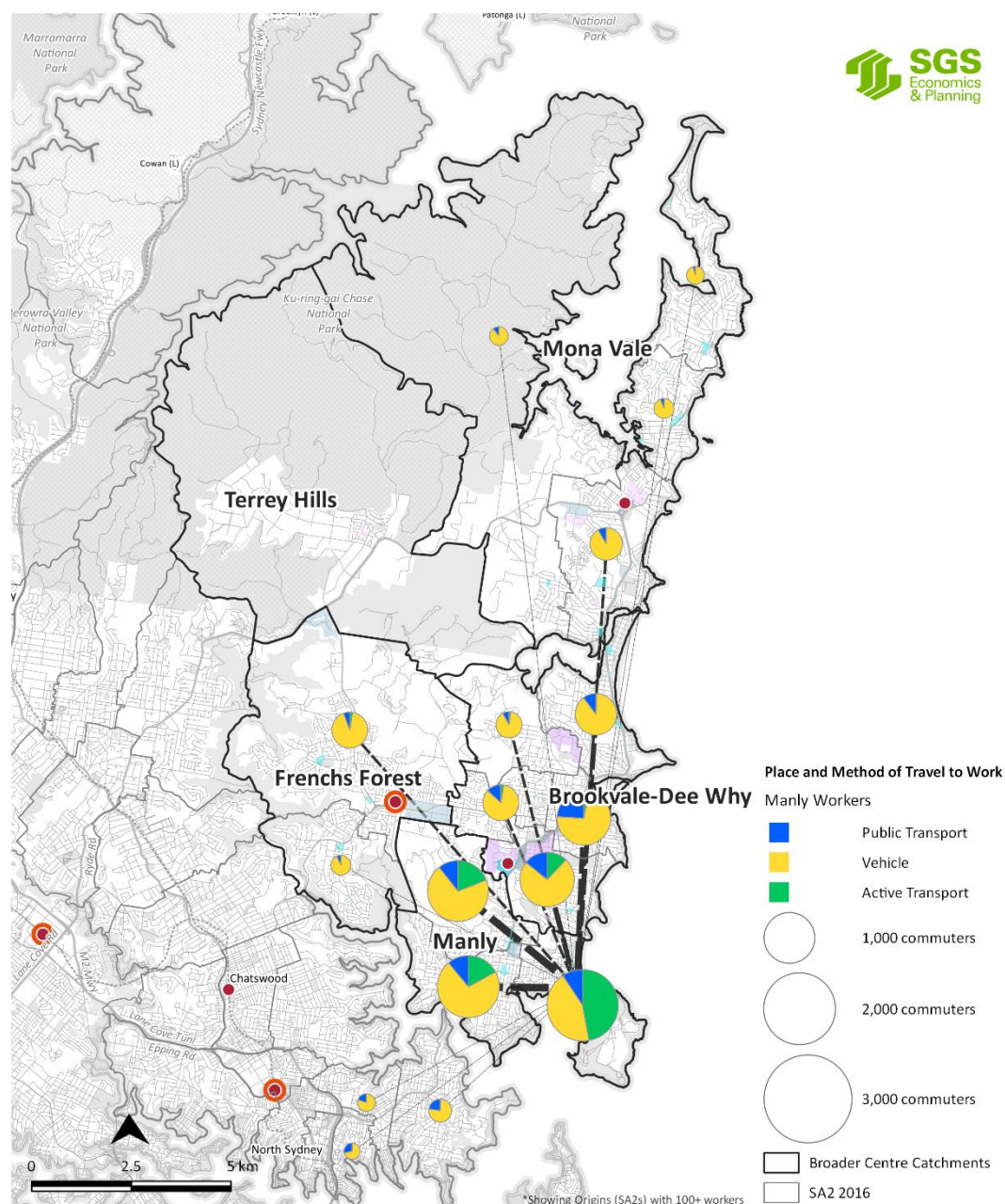
Source: ABS Census 2016 (TableBuilder Pro)

TABLE 6:   MANLY BROADER CATCHMENT COMMUTER PROFILE - INCOMING (2016)

Centre	Public Transport	Vehicle	Active Transport	Other	Jobs
Manly	13%	62%	11%	14%	15,052

Source: ABS Census 2016 (TableBuilder Pro)

5.4   Mona Vale

Mona Vale has a moderate to low 30min public transport area coverage, compared to the other centres on the Northern Beaches and the lowest *Population Densities* in particular within its *Secondary Catchment.* The total *Workforce* numbers are low overall with good connections to the *Brookvale-Dee Why* centre.

TABLE 7:   MONA VALE 30MIN CENTRE PROFILE (2016)

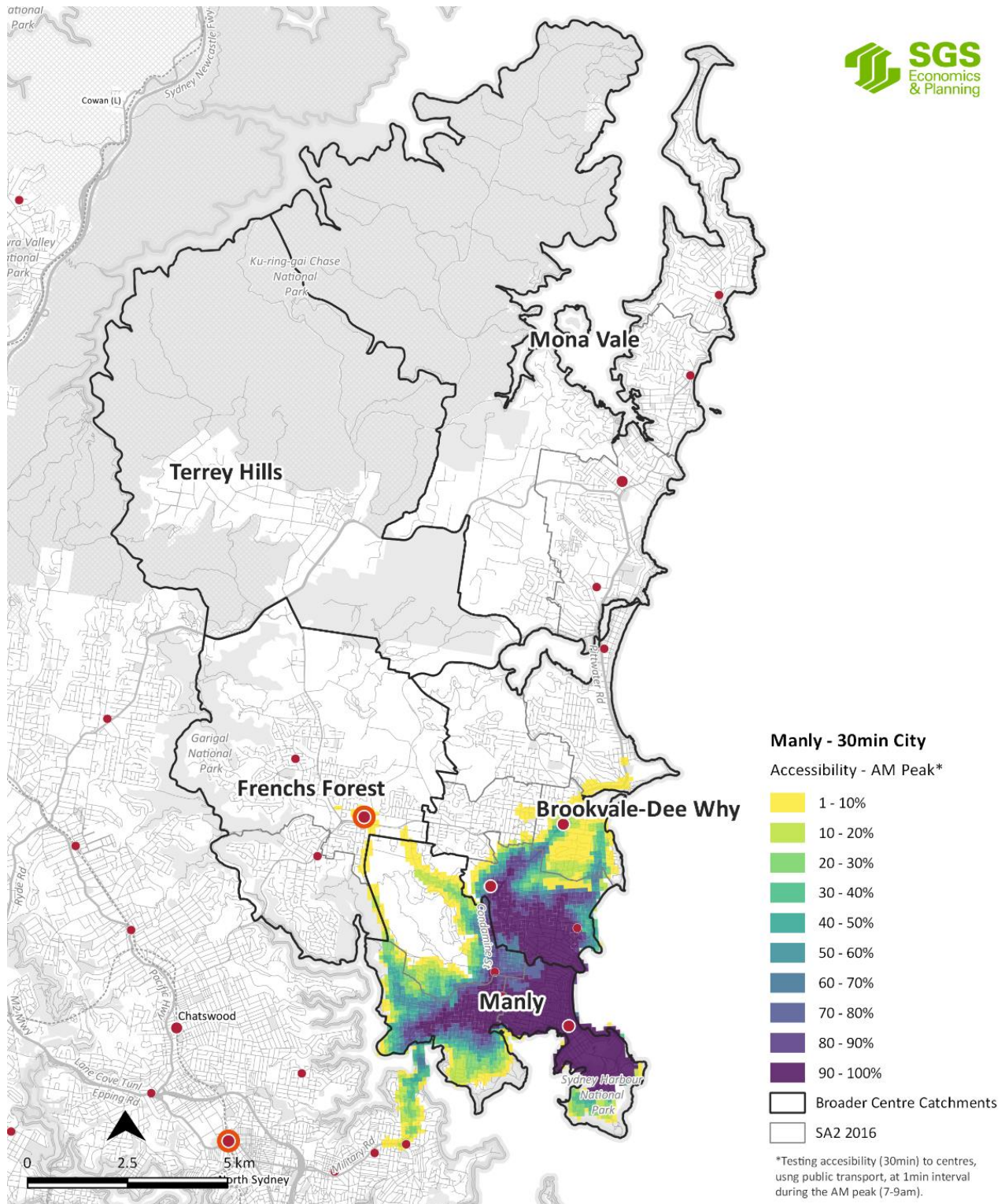| Centre Catchment	Population	Workforce	Area (km²)	Workforce to Population Ratio	Population Density (per km²)
Primary (100% access)	25,449	13,008	10.01	51%	2,542
Secondary (<100% access)	64,614	35,757	30.82	55%	2,096
Total	90,063	48,765	40.83	54%	2,206

Source: ABS Census 2016 (TableBuilder Pro) and Open Data NSW - General Transit Feed Specification (GTFS) 2019

FIGURE 11: MONA VALE TOWN CENTRE AND SURROUNDINGS

Source: visitsydneyaustralia.com.au
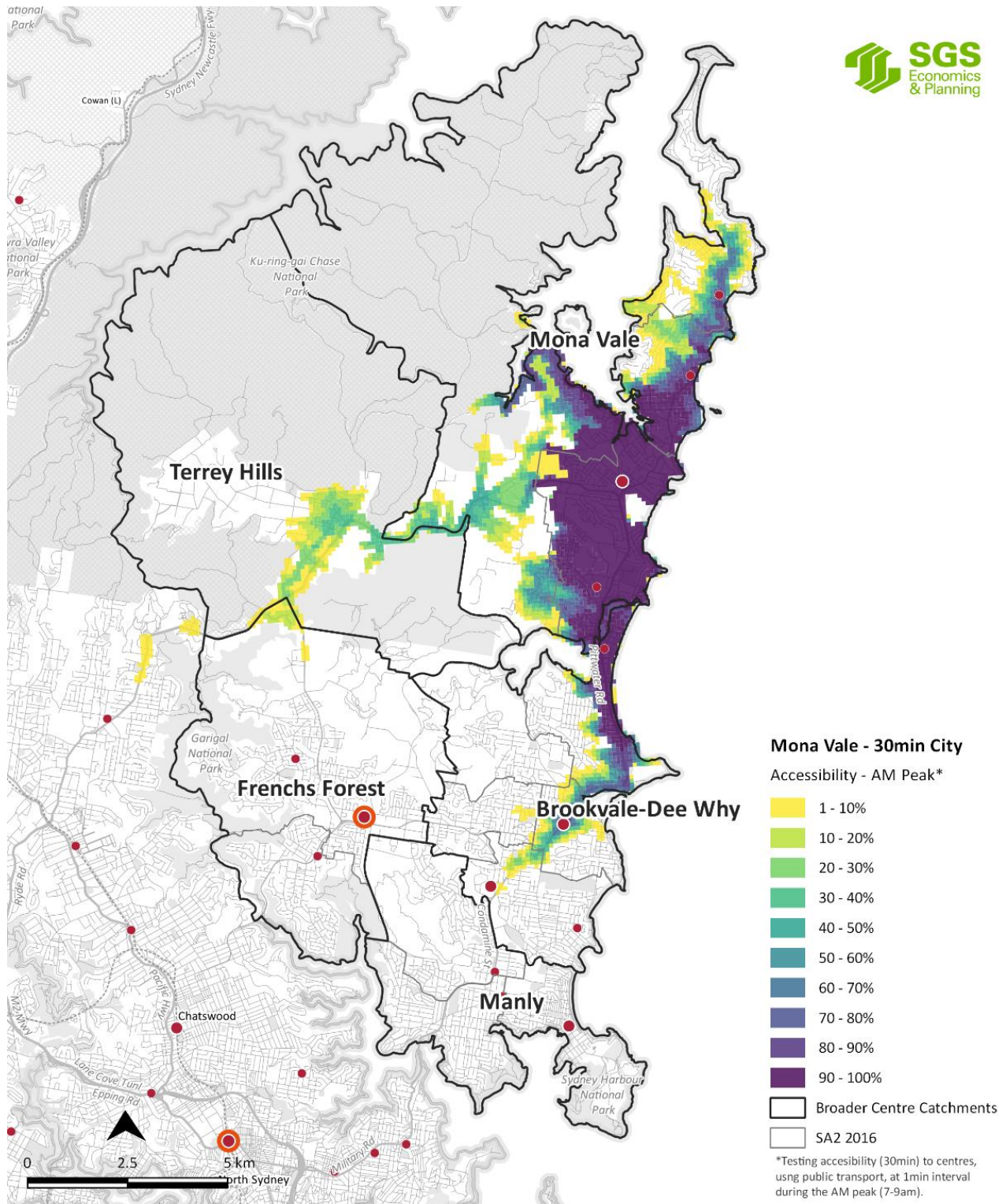
Mona Vale - 30min City

Accessibility - AM Peak*

- 1 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%
- Broader Centre Catchments
- SA2 2016

*Testing accesibility (30min) to centres, usng public transport, at 1min interval during the AM peak (7-9am).

Source: SGS Economics and Planning 2019 and Open Data NSW - General Transit Feed Specification (GTFS) 2019

Overall most people commute using private vehicles. However, *Mona Vale* has the largest number of workers with alternate working arrangements of all of the centres (e.g. *Working at Home).* Considering the areas linear urban topology (most of development along Pittwater road), there might be opportunity to further stimulate *Public Transport* use along that main axis. Apart from suburbs within the broader catchment itself, most commuters come from the *Brookvale-Dee Why* catchment.

FIGURE 13: ORIGIN AND METHOD OF TRAVEL OF WORKERS TO MONA VALE (POW) – MAP (2016)
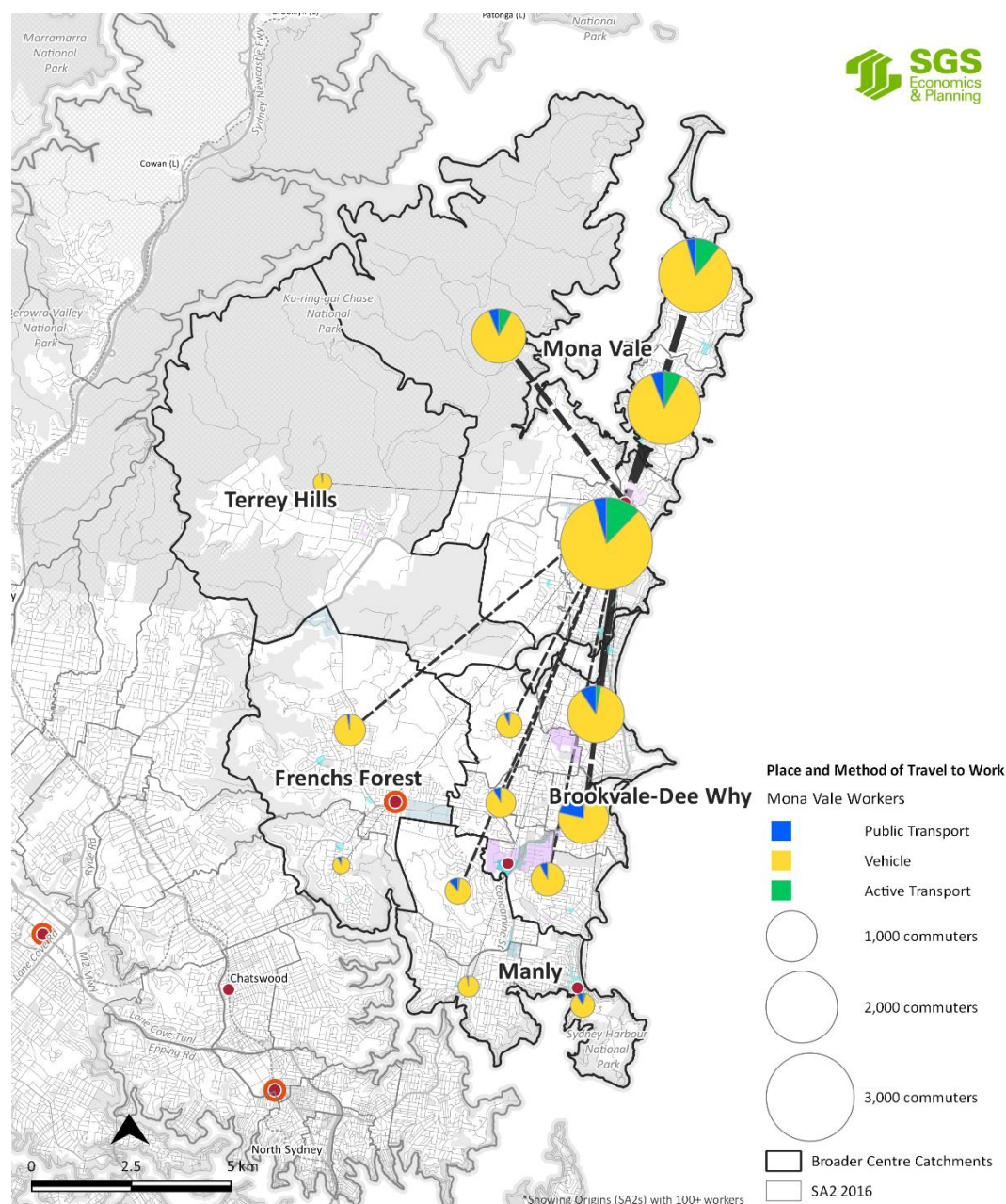
Source: ABS Census 2016 (TableBuilder Pro)

TABLE 8: MONA VALE BROADER CATCHMENT COMMUTER PROFILE - INCOMING (2016)

Centre	Public Transport	Vehicle	Active Transport	Other	Jobs
Mona Vale	7%	73%	5%	15%	18,693

Source: ABS Census 2016 (TableBuilder Pro)

6. PEOPLE

This chapter analyses a number of population based measures and indicators, pointing to historical and forecasted trends and insights

6.1 Population

Where are we now?

Northern Beaches is a growing community. In the past ten years, the population has increased by an additional +27,717 people with most of the growth occurring in the *Brookvale-Dee Why* broader catchment. The rate of growth in this area is nearly twice as high compared to the second ranked *Mona Vale* and *Manly* broader catchments.

FIGURE 14: BROADER CATCHMENTS POPULATION GROWTH – MAP (2011-2016)
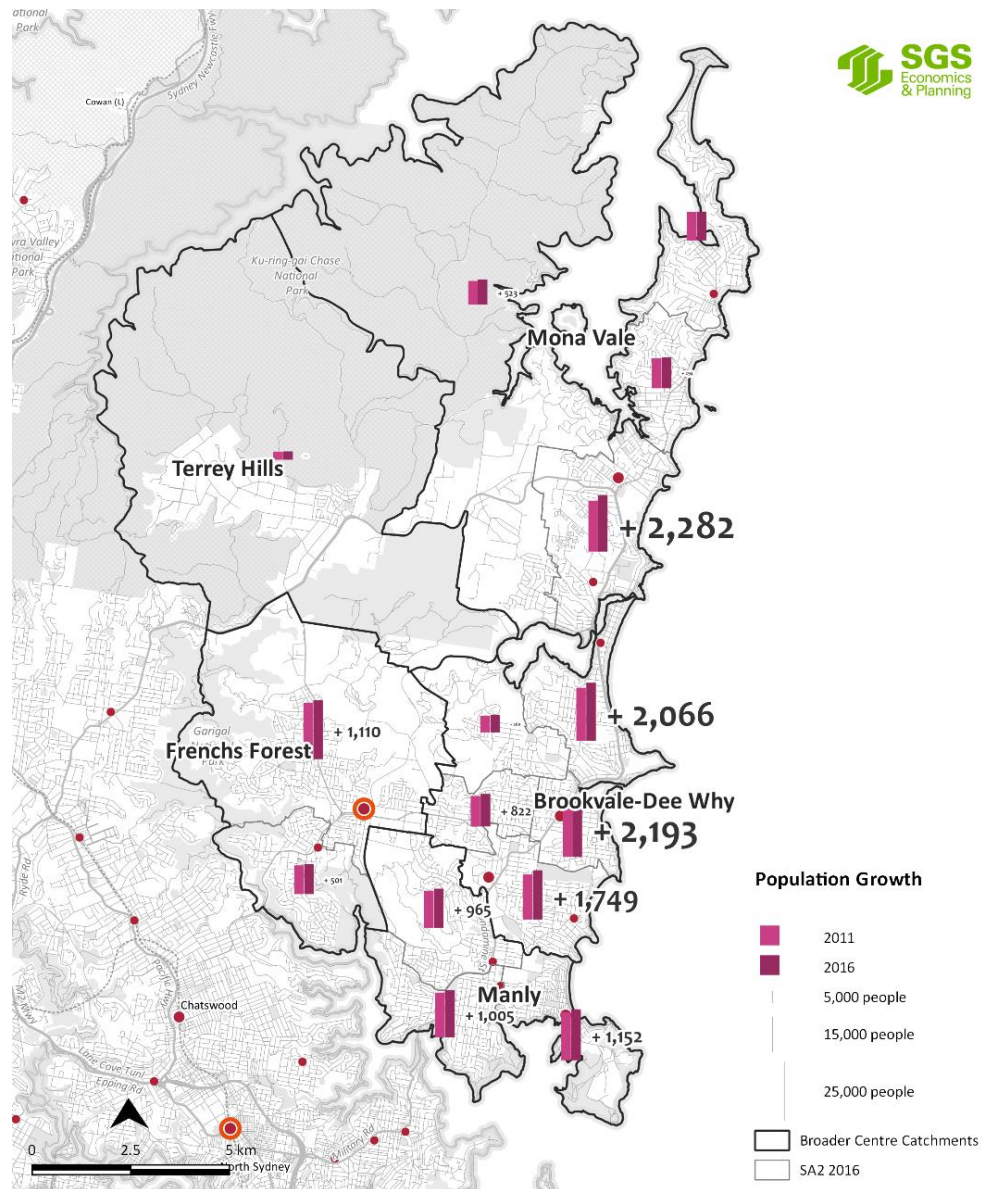
Source: ABS Census 2016 (TableBuilder Pro)

TABLE 9: BROADER CATCHMENTS POPULATION TOTALS AND GROWTH RATES (PUR) (2011-2016)

Geography	2011	2016	Growth	CAGR (5-yr %)
Mona Vale	57,170	60,442	3,272	5.72%
Terrey Hills	3,531	3,653	122	3.46%
Frenchs Forest	36,387	37,998	1,611	4.43%
Brookvale-Dee Why	84,987	92,077	7,090	8.34%
Manly	55,620	58,742	3,122	5.61%
Total	*237,641*	*252,876*	*15,235*	*6.40%*

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

The population density[9] has also increased as a result of infill housing and new high density residential flat-building developments. As with population growth, growth is focused in *Brookvale-Dee Why* and *Manly*. These areas have also historically been more established, explaining the larger densities in the past and over time.

TABLE 10:BROADER CATCHMENTS POPULATION DENSITY (PER KM²) TOTALS AND GROWTH RATES (2011-2016)

Geography	2011	2016	Growth (%)
Mona Vale	1,942	2,032	4.63%
Terrey Hills	350	362	3.46%
Frenchs Forest	1,788	1,872	4.69%
Brookvale-Dee Why	3,962	4,287	8.21%
Manly	4,302	4,544	5.63%
Total	*2,521*	*2,675*	*6.09%*

Source: ABS Census 2011 and 2016 (TableBuilder Pro), DPE - Standard Instrument Local Environmental Plan (LEP) - Land Use Zoning (LZN), 2018

Note: Place of Usual (PUR) - Some undercounting inevitably occurs for various reasons during Census count. Although adjustments are available for certain indicators in the form of Estimated Resident Population (ERP) based datasets, these haven't been used in this report, in order to achieve consistency across all indicators. However, as population total is an important indicator, ERP numbers have been provided in the table below for comparison. Reference disclaimer at the start of Section 5 for more details.

TABLE 11:BROADER CATCHMENTS ESTIMATED POPULATION TOTALS AND GROWTH RATES (ERP) (2011-2016)

Geography	2011	2016	Growth	CAGR (5-yr %)
Mona Vale	60,455	63,304	2,849	4.71%
Terrey Hills	3,699	3,786	87	2.35%
Frenchs Forest	38,274	39,360	1,086	2.84%
Brookvale-Dee Why	89,773	96,535	6,762	7.53%
Manly	59,495	62,483	2,988	5.02%
Total	*251,696*	*265,468*	*13,772*	*5.47%*

Source: ABS ERP 2011 and 2016 (ABS Stat)

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[9] Density (per km²) is calculated by dividing population with area. Area is calculated by using built form only, as defined in ABS Meshblocks (excluding national parks, agriculture land etc.). This encompasses the following Meshblock categories: Residential, Commercial, Education, Hospital/Medical and Industrial

How are we different?

Northern Beaches five-year growth rate has been similar to the North District (District) and slightly lower compared to Greater Sydney (GS). The population density is lower compared to the District averages as well is the densification growth rate. The density has reached similar levels to Greater Sydney and has been similar to it in the past.

TABLE 12:COMPARATIVE POPULATION TOTALS AND GROWTH RATES (2006-2016)

Geography	2006	2011	2016	Growth	CAGR (5-yr %)
Greater Sydney	3,821,233	4,079,432	4,496,184	674,951	8.47%
North District	766,240	808,651	850,382	84,142	5.35%
Northern Beaches	225,109	237,641	252,876	27,767	5.99%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

TABLE 13:COMPARATIVE POPULATION DENSITY (PER KM²) TOTALS AND GROWTH RATES (2011-2016)

Geography	2006	2011	2016	Growth (%)
Greater Sydney	N/A	2,560	2,623	2.49%
North District	N/A	2,814	3,046	8.25%
Northern Beaches	N/A	2,521	2,675	6.09%

Source: ABS Census 2011 and 2016 (TableBuilder Pro), DPE - Standard Instrument Local Environmental Plan (LEP) - Land Use Zoning (LZN), 2018

Where are we going?

A number of industry standard population forecasts, originating from various state agencies and private providers, have been analysed in this study. As forecasts come in many forms, and are produced using different methods, assumptions and quantifications, as well as a range of sources it is important to understand that discrepancies between the different sources are an inevitable outcome of the process. It is also important to stress, that forecasts merely represent a rough proxy of what might happen in the future and are not a definitive measure.

The main forecast used in this report is provided by TfNSW - TPA division. These population projections are commonly used across various government and private sector projects and are considered the "default" go to source. They provide small area projections (Travel Zone), consistency across the Sydney Metro Area and incorporate DPE control totals.

Apart from TfNSW, DPE and Profile.ID forecasts are also quite common in the planning world. DPE projections are also incorporated as LGA "control totals" within the TfNSW - TZP16 v1.5 datasets, so what TfNSW effectively does, is distribute the data to smaller level geographies (TZ) and works more closely on defining the 1-digit ANZSIC employment numbers.

The other related studies (housing, employment and social) have used the following datasets:

TABLE 14: FORECASTED DATASETS USED IN OTHER STUDIES

Study	Source
Housing	DPE Main Series
Employment	TfNSW TZP16 v1.5
Social	TfNSW TZP16 v1.5

Source: SGS Economics and Planning

Note: Although PUR was used as the main source for historical data in the other studies as well, some indicators were adjusted and ABS ERP numbers were used instead - i.e. Social Study has used ERP historical data instead of PUR to calculate the difference between future (TfNSW - TZP16 v1.5) and current (ABS ERP) demand.

Looking at TfNSW projections, Northern Beaches is forecasted to have lower growth rates, compared to both the GS area and District but also compared to historical trends. Growth is forecasted at 39,359 people between 2016 and 2036 for Northern Beaches, which represents an additional +3.68% each five years. Projected GS rates are at +8.62% and the Districts at +5.50%.

TABLE 15: ABS HISTORICAL AND TFNSW FORECASTED COMPARATIVE POPULATION TOTALS AND GROWTH RATES (2016-2036)

Geography	2016	2021	2026	2031	2036	Growth 16-36	CAGR (5-yr %)
Greater Sydney	4,496,184	4,976,423	5,397,508	5,810,257	6,257,861	1,761,677	8.62%
North District	850,382	912,298	955,989	1,003,553	1,053,354	202,972	5.50%
Northern Beaches	252,876	266,220	273,600	282,359	292,235	39,359	3.68%

Source: ABS Census 2016 and TfNSW – Travel Zone Projections 2016 (TZP16 v1.5)

DPE series - main population projection, assume 297,950 people at 2036 in Northern Beaches LGA, while the high series forecast 317,050 people.

TABLE 16: DPE FORECASTED POPULATION TOTALS AND GROWTH RATES SERIES - NORTHERN BEACHES (2021-2036)

Series	2021	2026	2031	2036	Growth 21-36	CAGR (5-yr %)
High	274,350	286,150	300,700	317,050	42,700	4.94%
Main	270,050	278,000	287,650	297,950	27,900	3.33%
Low	266,100	269,950	274,250	277,850	11,750	1.45%

Source: DPE - NSW Population Projections 2016

6.2 Migration and Resident Structure

The following Resident Structure definitions and reasoning has been applied:

- Local (indicating residents that have lived in Northern Beaches for 5 years or more)
- Internal (residents that have migrated to Northern Beaches in the past 5 years from other parts of Australia);
- Overseas (residents that have migrated to Northern Beaches in the past 5 years from overseas);
- Unknown (residents that have unknown origin)

Where are we now?

The majority of people moving to the Northern Beaches are coming from other parts of Australia - mostly Sydney (internal migration). However, larger numbers of overseas migrants are locating in *Manly* and *Brookvale-Dee Why*. Particular hot spots for overseas migration are the suburbs of *Manly-Fairlight (British* and *Western European* ancestry)*, Dee Why-Curl Curl (British, Southern Asian* and *Other North-East Asian)* and *Freshwater-Brookvale (British* and *Southern European).*

These three suburbs contain approximately 50% of the number of overseas migrants in the past five years. Reasons for such trends are most likely related to housing diversity and affordability (larger number of units), better connectivity to the City and proximity to natural amenity such as beaches.

TABLE 17:BROADER CATCHMENTS RESIDENT STRUCUTRE AND MIGRATION ORIGIN TOTALS (2016)

Geography	Local	Internal	Overseas
Mona Vale	45,552	6,279	2,085
Terrey Hills	2,678	479	94
Frenchs Forest	28,561	4,280	1,663
Brookvale-Dee Why	64,661	9,321	6,541
Manly	38,820	6,818	5,872
Total	*180,269*	*25,850*	*16,243*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 18:BROADER CATCHMENTS RESIDENT STRUCUTRE AND MIGRATION ORIGIN PROPORTIONS (2016)

Geography	Local	Internal	Overseas
Mona Vale	84%	12%	4%
Terrey Hills	82%	15%	3%
Frenchs Forest	83%	12%	5%
Brookvale-Dee Why	80%	12%	8%
Manly	75%	13%	11%
Total	*81%*	*12%*	*7%*

Source: ABS Census 2016 (TableBuilder Pro)
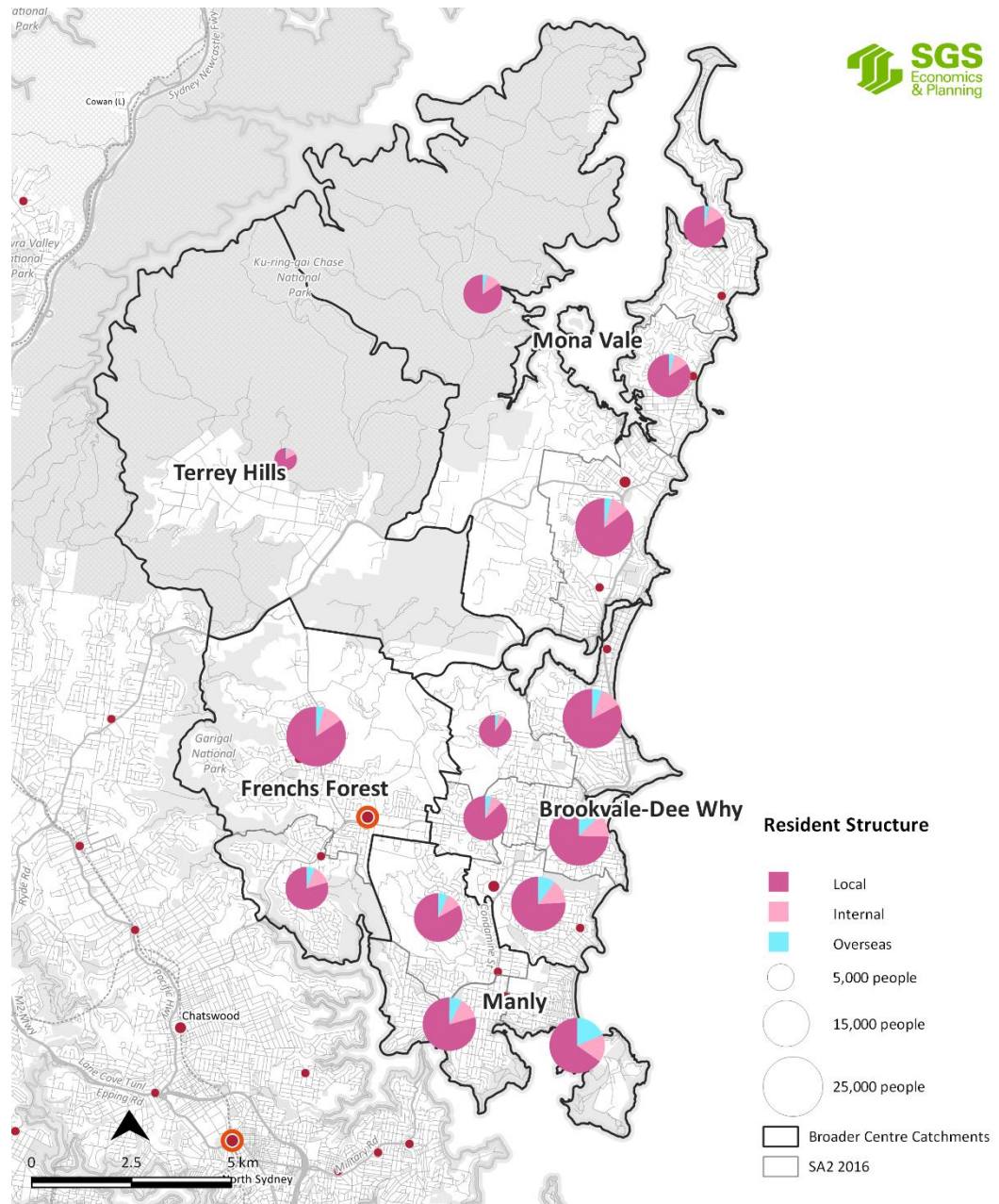
Source: ABS Census 2016 (TableBuilder Pro)

The age profile of the three residential groups is also quite different. The *Local* resident structure (resided within the Northern Beaches for over 5 years) is most aged, predominantly composed of *Mature Adults* and *Retirees*, while the structure of migrants is more inclined to younger groups. *Overseas* migrants have a particularly high proportion of *Adults*, and *Young Adults*, while the population coming from other parts of Australia has higher rates of *Adults*. This means that Northern Beaches relies and will rely, if the trends persevere, on these inflowing structures to "replenish" the workforce and rejuvenate the population in the future.

TABLE 19: BROADER CATCHMENTS AGE PROFILE[10] OF LOCAL RESIDENTS (2016)

Geography	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
Mona Vale	N/A	21.90%	8.74%	16.26%	31.68%	21.43%
Terrey Hills	N/A	23.45%	8.51%	14.41%	32.52%	21.10%
Frenchs Forest	N/A	25.30%	8.14%	14.82%	29.48%	22.26%
Brookvale-Dee Why	N/A	20.32%	10.01%	22.28%	29.76%	17.63%
Manly	N/A	22.09%	8.24%	20.62%	30.56%	18.50%
Total	*N/A*	*21.93%*	*8.99%*	*19.10%*	*30.41%*	*19.56%*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 20: BROADER CATCHMENTS AGE PROFILE OF INTERNAL MIGRANTS (2016)

Geography	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
Mona Vale	N/A	16.24%	11.53%	27.11%	27.98%	17.14%
Terrey Hills	N/A	25.89%	9.19%	26.93%	24.63%	13.36%
Frenchs Forest	N/A	22.97%	8.60%	40.05%	18.74%	9.65%
Brookvale-Dee Why	N/A	11.88%	21.08%	40.29%	17.12%	9.63%
Manly	N/A	14.86%	18.44%	40.54%	19.89%	6.28%
Total	*N/A*	*15.63%*	*16.04%*	*37.03%*	*20.71%*	*10.59%*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 21: BROADER CATCHMENTS AGE PROFILE OF OVERSEAS MIGRANTS (2016)

Geography	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
Mona Vale	N/A	24.70%	15.73%	33.91%	20.38%	5.28%
Terrey Hills	N/A	26.60%	11.70%	36.17%	25.53%	0.00%
Frenchs Forest	N/A	36.26%	9.08%	33.85%	16.90%	3.91%
Brookvale-Dee Why	N/A	16.13%	28.59%	43.10%	9.94%	2.25%
Manly	N/A	15.41%	26.24%	46.00%	10.59%	1.75%
Total	*N/A*	*19.09%*	*24.00%*	*41.98%*	*12.32%*	*2.61%*

Source: ABS Census 2016 (TableBuilder Pro)

The LGAs of origin for people moving to the Northern Beaches, from other parts of Australia, are in the North District and local areas such as *Ku-ring-gai*, *North Sydney*, and *Willoughby*. As the main age cohort of these migrants are *Adults* and *Mature Adults* it is fair to assume that they are making the transition to a more "family based" area rich with natural amenity with the purpose of settling and purchasing homes.

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[10] Age profile definition and reasoning: Children 0-5 (still out of school system); Youth 5-20 (mostly still living with parents); Young Adult 20-30 (starting to move out, becoming independent, saving for deposit); Adult 30-45 (starting a family, buying a house); Mature Adults 45-65 (moving to better neighbourhood, settling long term, less mobile); Retirees 65+ (mainly out of work force)

TABLE 22:SOURCE OF MIGRATION (FROM OTHER PARTS OF AUSTRALIA/OVERSEAS) – PAST 5 YEARS (2016)

Geography	2016	%
Overseas	16,243	38.59%
Ku-ring-gai	2,222	5.28%
North Sydney	2,008	4.77%
Willoughby	1,642	3.90%
Sydney	1,424	3.38%
Mosman	1,317	3.13%
Hornsby	1,151	2.73%
Inner West	1,145	2.72%
Other	14,117	33.54%
Total	*42,093*	*100%*

Source: ABS Census 2016 (TableBuilder Pro)

People that are moving out of the Northern Beaches are migrating to areas either:

▪ outside of Greater Sydney that have a similar lifestyle - *Central Coast* and *Gold Coast* large number of *Adults* (most likely due to affordability) but also *Retirees*
▪ more vibrant locations closer to Sydney CBD – *Sydney*, *Inner West* and *North Sydney* very high numbers of *Young Adults* (due to lifestyle, amenity, proximity to work and nightlife)
▪ surrounding LGAs with similar lifestyle - *Ku-ring-gai*, *Willoughby*, *Hornsby* and *Mosman* larger number of *Mature Adults* and *Adults*

TABLE 23:LOCATION OF MIGRATION (TO OTHER PARTS OF AUSTRALIA) – PAST 5 YEARS (2016)

Geography (LGA)	Children	Youth	Young Adult	Adult	Mature Adult	Retiree	Total
Central Coast	0.00%	15.80%	8.61%	35.12%	22.57%	17.90%	2,340
North Sydney	0.00%	8.67%	31.24%	30.92%	21.81%	7.35%	1,595
Ku-ring-gai	0.00%	23.44%	13.19%	27.65%	25.12%	10.60%	1,413
Sydney	0.00%	5.76%	47.38%	27.62%	13.99%	5.25%	1,372
Gold Coast	0.00%	18.49%	10.21%	29.99%	23.64%	17.66%	1,079
Willoughby	0.00%	15.92%	19.96%	28.03%	25.08%	11.01%	915
Inner West	0.00%	5.90%	42.72%	29.96%	16.49%	4.93%	832
Hornsby	0.00%	16.96%	15.58%	38.44%	19.35%	9.67%	791
Mosman	0.00%	17.14%	17.66%	25.97%	27.79%	11.43%	767

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has a slightly lower proportion of *Overseas* migration compared to GS and the District, while both the District and Northern Beaches have higher ratios of *Internal* migration compared to GS.

FIGURE 16: COMPARATIVE MIGRATION/RESIDENT STRUCTURE (2016)
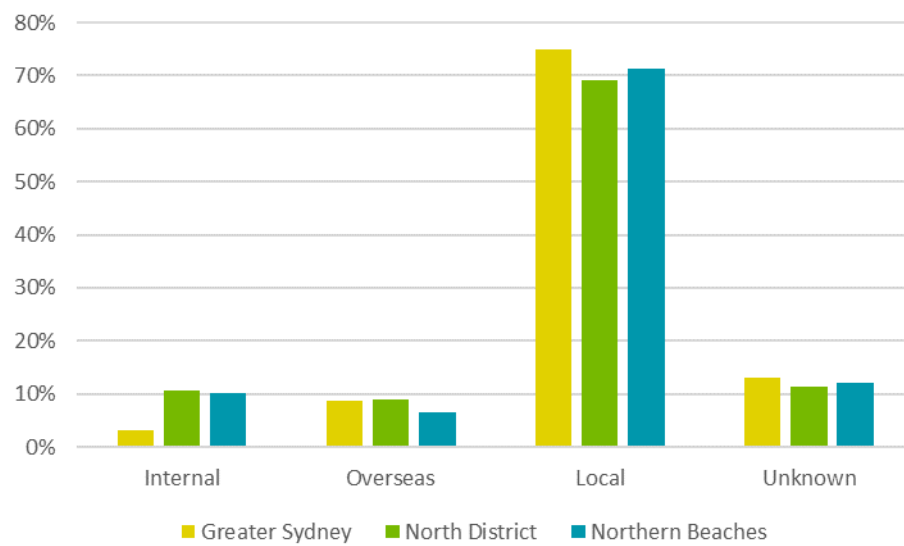
Source: ABS Census 2016 (TableBuilder Pro)

Trends are showing a higher increase in the proportion of *Internal* migration in the District and Northern Beaches with *Locals* being less mobile and more established in the Northern Beaches.

FIGURE 17: COMPARATIVE PROPORTIONAL CHANGE IN MIGRATION/RESIDENT STRUCTURE (2006-2016)
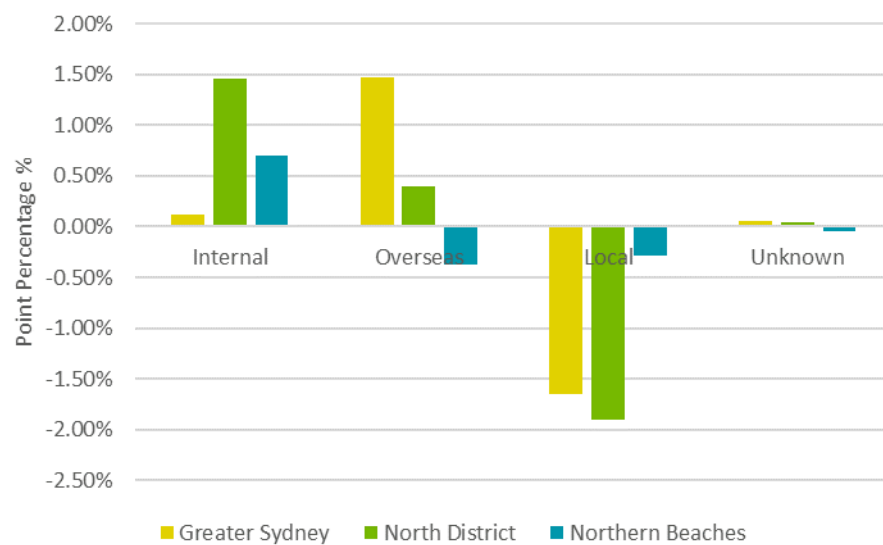
Source: ABS Census 2011 and 2016 (TableBuilder Pro)

6.3 Age Profile

The following Age Profile definitions and reasoning has been applied:

- Children 0-5 (still out of school system);
- Youth 5-20 (mostly still living with parents);
- Young Adult 20-30 (starting to move out, becoming independent, saving for deposit);
- Adult 30-45 (starting a family, buying a house);
- Mature Adult 45-65 (moving to better neighbourhoods, settling long term, less mobile);
- Retirees 65+ (mainly out of work force)[11]

Where are we now?

Northern Beaches has an increasingly ageing population (as is most of GS). A high number of *Retirees* and *Mature Adults* are located in nearly all suburbs with the exception of *Manly-Fairlight, Freshwater-Brookvale* and *Dee Why-North Curl Curl* - having larger proportions of *Adults* and *Young Adults.* Most of the *Youth* is located in the same suburbs as *Mature Adults* (indicating established family households), with higher proportions of *Children* in *Dee Why-North Curl Curl* and *Freshwater-Brookvale* (indicating new family households).

TABLE 24:BROADER CATCHMENTS AGE PROFILE TOTALS (2016)

Geography	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
Mona Vale	3,411	11,897	5,344	10,315	17,446	11,991
Terrey Hills	177	802	300	585	1,099	693
Frenchs Forest	2,165	8,990	2,953	6,691	9,869	7,417
Brookvale-Dee Why	6,067	16,005	11,039	22,441	22,873	13,630
Manly	3,865	10,835	6,534	14,341	14,603	8,502
Total	*15,685*	*48,529*	*26,170*	*54,373*	*65,890*	*42,223*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 25:BROADER CATCHMENTS AGE PROFILE PROPORTIONS (2016)

Geography	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
Mona Vale	6%	20%	9%	17%	29%	20%
Terrey Hills	5%	22%	8%	16%	30%	19%
Frenchs Forest	6%	24%	8%	18%	26%	19%
Brookvale-Dee Why	7%	17%	12%	24%	25%	15%
Manly	7%	18%	11%	24%	25%	14%
Total	*6%*	*19%*	*10%*	*22%*	*26%*	*17%*

Source: ABS Census 2016 (TableBuilder Pro)

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[11] Although some people remain in the workforce after the age of 65, to be eligible for Age Pension you must be 65 or older
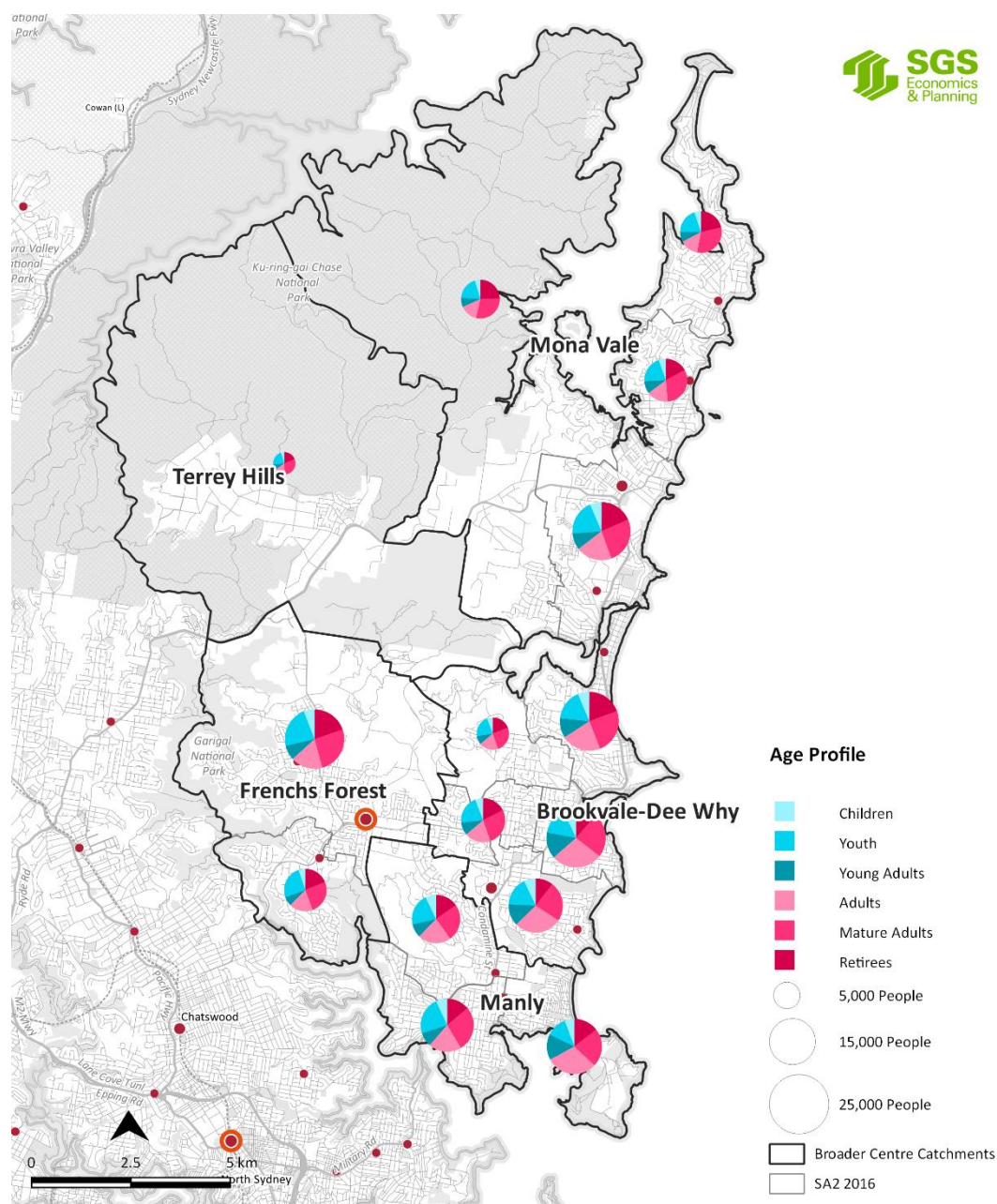
Source: ABS Census 2016 (TableBuilder Pro)

Strong growth trends have been particularly present in the *Retiree, Mature Adult* and *Youth* cohorts, with the remaining groups remaining relatively stagnant.

TABLE 26: LOCAL AGE PROFILE TOTALS AND GROWTH RATES (2006-2016)

Year	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
2016	15,672	48,591	26,045	54,278	65,816	42,467
2011	17,018	43,319	25,521	54,712	60,247	36,850
2006	15,156	40,607	25,812	54,019	55,874	33,668
Growth	*516*	*7,984*	*233*	*259*	*9,942*	*8,799*
CAGR (5-yr %)	*1.69%*	*9.39%*	*0.45%*	*0.24%*	*8.53%*	*12.31%*

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has a larger proportion of *Retirees, Mature Adults* and *Youth* compared to the District and particularly GS, indicating the strong family orientation of the LGA but also more pronounced ageing population trends (combined with distinctively lower proportions of *Young Adults).*

FIGURE 19: COMPARATIVE AGE PROFILE STRUCTURE (2016)
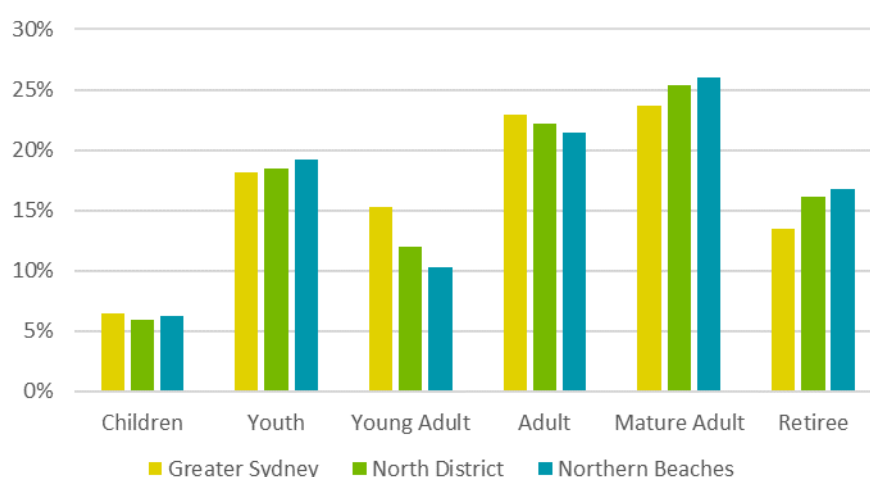
Source: ABS Census 2016 (TableBuilder Pro)

Trends are showing a bigger decline in the proportion of *Adults* in Northern Beaches than those of GS and the District over the past ten years, with greater growth trends in *Mature Adults* and *Youth* in particular. *Retirees* are increasing across all compared areas.

FIGURE 20: COMPARATIVE PROPORTIONAL CHANGE IN AGE PROFILE STRUCTURE (2006-2016)

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Where are we going?

Northern Beaches is forecasted to have a continued increase in the number of *Retirees* and *Mature Adults*. Compared to historical data, *Youth* is forecasted to stagnate while *Young Adults* to increase (may be an indication of the younger age cohort transitioning to the

following *Young Adult)*, under the assumption that the previous outflow of this category will cease).

TABLE 27: LOCAL COMPARATIVE FORECASTED AGE PROFILE TOTALS AND GROWTH RATES - (2021-2036)

Year	Children	Youth	Young Adult	Adult	Mature Adult	Retiree
2036	17,870	53,420	31,871	56,599	74,408	58,066
2031	17,425	52,719	30,529	55,737	72,867	53,083
2026	17,354	52,276	28,717	55,726	71,341	48,185
2021	17,684	51,107	27,556	55,982	70,064	43,827
Growth	*187*	*2,313*	*4,315*	*617*	*4,344*	*14,239*
CAGR (5-yr %)	*0.35%*	*1.49%*	*4.97%*	*0.37%*	*2.03%*	*9.83%*

Source: TfNSW – Travel Zone Projections 2016 (TZP16 v1.5)

6.4   Ancestry and Language Spoken at Home

Where are we now?

Northern Beaches has a very homogeneous ancestry structure with over 65% of people being of European ancestry and 20% of *Australian*. The main ancestry groups are *British, Australian, Irish, Southern European* and *Western European.* The most multicultural suburbs are *Dee Why-North Curl Curl, Beacon Hill-Narraweena* and *Forestville-Killarney Heights* (possibly related to influx of refugees in the 1990s)*.*

FIGURE 21: LOCAL ANCESTRY STRUCTURE (2016)
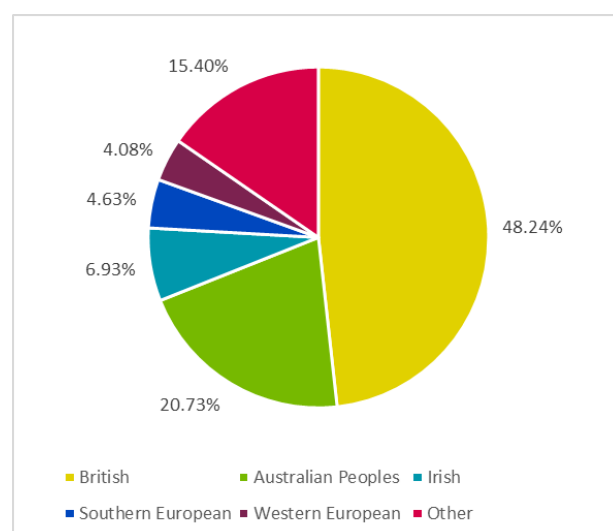
Source: ABS Census 2016 (TableBuilder Pro)

Trends are showing a further increase of people of *British* ancestry (+4.2%) in the overall proportion and a decline of people of *Australian* decent (-6.8%).

TABLE 28: LOCAL CHANGE IN ANCESTRY STRUCTURE (2006-2016)

Rank	Ancestry	Change (PP%)
1	British	4.28%
2	Southern Asian	0.64%
3	Chinese Asian	0.47%
…	…	…

35	South Eastern European	-0.20%
36	New Zealand Peoples	-0.20%
37	Australian Peoples	-6.80%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Most people speak *English* at home, with *Other* languages representing a small proportion of the total percentage.

FIGURE 22: LOCAL LANGUAGE SPOKEN AT HOME STRUCTURE (2016)
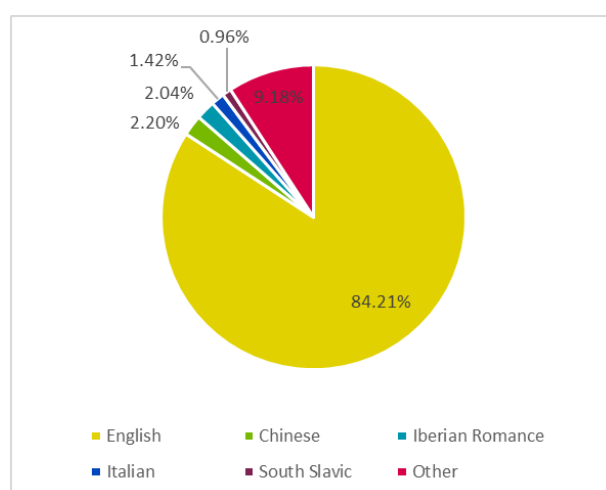
Source: ABS Census 2016 (TableBuilder Pro)

However, despite a strong presence, *English* as the primary language spoken at home, has decline in the overall proportion with *Iberian Romance* increasing the most.

TABLE 29: LOCAL CHANGE IN LANGUAGE SPOKEN AT HOME STRUCTURE (2006-2016)

Rank	Language	Change (PP%)
1	Iberian Romance	1.18%
2	Indo-Aryan	0.56%
3	French	0.38%
…	…	…
58	South Slavic	-0.18%
59	Italian	-0.32%
60	English	-3.19%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches is a lot more homogenous than the District and particular GS when it comes to ancestry. Compared to those areas, Northern Beaches has a much lesser proportion of *Chinese Asian, Southern Asian* and *Southern European* ancestries, as well as less people speaking *Chinese, Indo-Aryan* and *Middle Eastern* at home, with higher rates of *English* speaking people of *British* decent.

6.5   Education

Where are we now?

Northern Beaches has a close to 65-35% split between residents with *Secondary Education/VET*[12] and those with tertiary education[13] qualifications. Areas with high numbers of people possessing tertiary education are particularly within the *Manly* broader catchment (*Manly-Fairlight* and *Balgowlah - Clontarf - Seaforth).* Suburbs with lower levels of educational attainment are in the suburbs of *Beacon Hill-Narraweena* and *Cromer.*

TABLE 30:BROADER CATCHMENTS EDUCATION PROFILE TOTALS (2016)

Geography	Secondary Education	VET	Undergraduate	Postgraduate
Mona Vale	15,279	15,215	9,854	4,058
Terrey Hills	982	869	554	243
Frenchs Forest	9,941	8,045	6,554	2,943
Brookvale-Dee Why	23,779	22,271	15,537	6,048
Manly	12,123	10,601	13,602	6,236
Total	*62,104*	*57,002*	*46,099*	*19,550*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 31:BROADER CATCHMENTS EDUCATION PROFILE PROPORTIONS (2016)

Geography	Secondary Education	VET	Undergraduate	Postgraduate
Mona Vale	34%	31%	25%	11%
Terrey Hills	34%	34%	22%	9%
Frenchs Forest	37%	33%	21%	9%
Brookvale-Dee Why	36%	29%	24%	11%
Manly	35%	33%	23%	9%
Total	*34%*	*31%*	*25%*	*11%*

Source: ABS Census 2016 (TableBuilder Pro)

Looking at the resident structure cross tabbed with educational attainment, it is evident that the *Overseas* and population *Migrating out* of the Northern Beaches have higher levels of attainment compared to the *Local* population.

TABLE 32:EDUCATION PROFILE OF LOCAL RESIDENTS AND OVERSEAS MIGRANTS (2016)

Origin	Secondary Education	VET	Undergraduate	Postgraduate
Local	35.62%	32.18%	22.80%	9.40%
Overseas	25.92%	20.58%	36.58%	16.92%
Migrating out[14]	24.50%	21.21%	39.56%	14.73%

Source: ABS Census 2016 (TableBuilder Pro)

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[12] Vocational education and training - Designed to deliver workplace-specific skills and knowledge, vocational education and training (VET) covers a wide range of careers and industries, including trade and office work, retail, hospitality and technology.

[13] Tertiary education considers Undergraduate and Postgraduate degrees.

[14] People that have migrated to the "inner city" councils in the past 5 years: North Sydney, Sydney CBD and Inner West
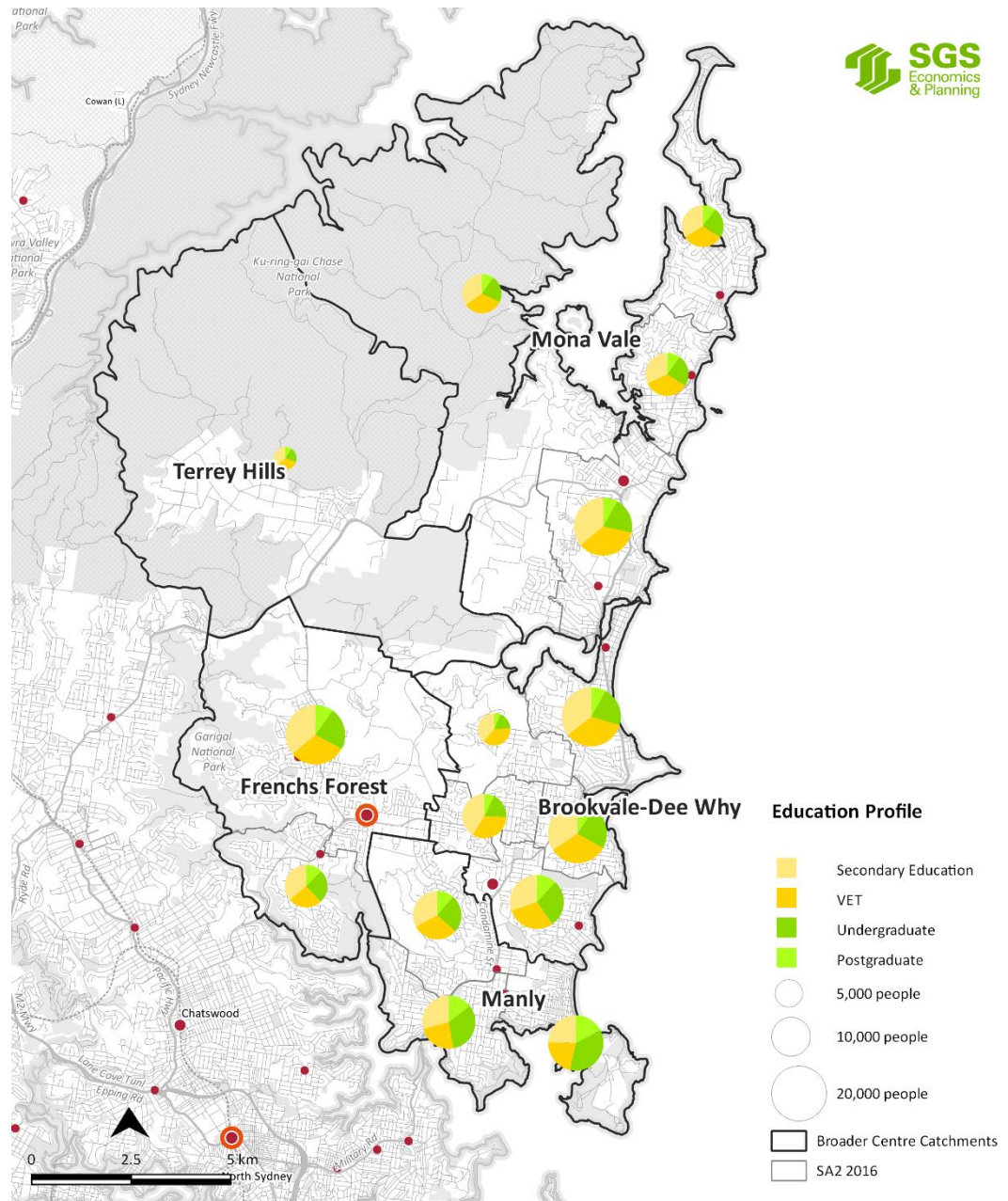
Source: ABS Census 2016 (TableBuilder Pro)

The highest number of students are located in the postcodes of *Dee Why, Balgowlah* and *Beacon Hill* with an overall annual growth rate of 2.26%.

TABLE 33:POSTCODE HIGHER EDUCATION STUDENTS TOTALS AND GROWTH RATES (2013-2016)

Postcode	2013	2014	2015	2016	Growth	CAGR (5-yr %)
Dee Why	1,527	1,576	1,613	1,673	146	3.09%
Balgowlah	1,202	1,232	1,217	1,233	31	0.85%
Beacon Hill	1,018	1,020	1,060	1,067	49	1.58%
Narrabeen	746	764	773	790	44	1.93%
Frenchs Forest	738	778	771	775	37	1.64%
Avalon	740	754	767	766	26	1.16%
Collaroy	690	714	746	763	73	3.41%
Forestville	621	626	676	717	96	4.91%
Freshwater	603	648	717	691	88	4.65%
Manly	653	692	675	662	9	0.46%
Belrose	598	603	638	605	7	0.39%
Newport	497	558	555	552	55	3.56%
Mona Vale	499	511	530	514	15	0.99%
Seaforth	457	463	489	480	23	1.65%
Warriewood	259	277	315	323	64	7.64%
Fairlight	292	299	316	310	18	2.01%
Bayview	187	190	200	203	16	2.77%
Terrey Hills	212	213	216	201	-11	-1.76%
Church Point	90	99	108	117	27	9.14%
Palm Beach	75	71	92	74	-1	-0.45%
Total	*11,704*	*12,088*	*12,474*	*12,516*	*812*	*2.26%*

Source: Department of Education (DET) 2018

The most attended major universities are *Macquarie*, *The University of Sydney, UTS* and *UNSW* attributing to more than 50% of Northern Beaches higher education students.

TABLE 34: MAJOR UNIVERSITIES OF ATTENDANCE FOR NORTHERN BEACHES RESIDENTS (2013-2016)

| University	2013	2014	2015	2016	Growth	CAGR (5-yr %)
Macquarie University	2,079	2,224	2,257	2,307	228	4%
The University of Sydney	1,905	1,889	1,915	1,840	-65	-1%
University of Technology Sydney (UTS)	1,645	1,652	1,714	1,702	57	1%
University of New South Wales (UNSW)	1,312	1,320	1,399	1,385	73	2%
Charles Sturt University	718	661	652	651	-67	-3%
Australian Catholic University	456	548	602	636	180	12%
The University of Notre Dame Australia	426	421	416	367	-59	-5%
The University of New England	351	338	338	323	-28	-3%
The University of Newcastle	245	286	282	233	-12	-2%
University of Tasmania	143	180	197	211	68	14%
Western Sydney University	215	226	232	199	-16	-3%
Other	2,209	2,343	2,470	2,662	453	6%
Total	*11,704*	*12,088*	*12,474*	*12,516*	*812*	*2.26%*

Source: Department of Education (DET) 2018

How are we different?

Note: Due to the way ABS has captured data, historical comparison between *Secondary Education* and other educational attainments is not possible. Hence *Secondary Education* has been excluded from the analysis.

Northern Beaches has a larger proportion of people with *VET* qualifications, than the District and GS ,and somewhat lower level of *Postgraduates* (could be attributed to *Young Adults* moving out to area closer to Sydney CBD see). The proportion of *Undergraduates* is higher than the GS but lower than the District.

FIGURE 24: COMPARATIVE EDUCATION PROFILE STRUCTURE (2016)[15]
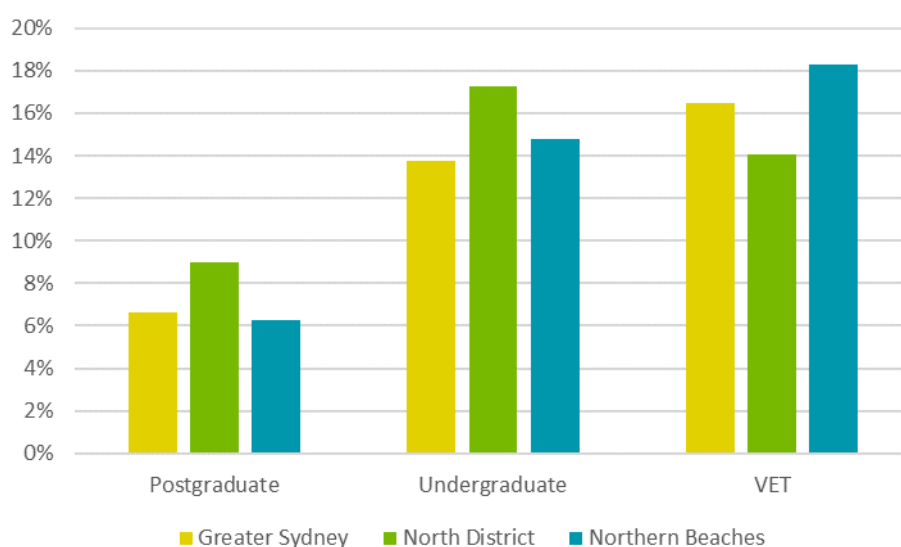
Source: ABS Census 2016 (TableBuilder Pro)

There has been a growth in the percentage of people with higher education across all areas and a decline in *VET* qualifications indicating an increasingly skilled population.

FIGURE 25: COMPARATIVE PROPORTIONAL CHANGE IN EDUCATION PROFILE STRUCTURE (2006-2016)[15]
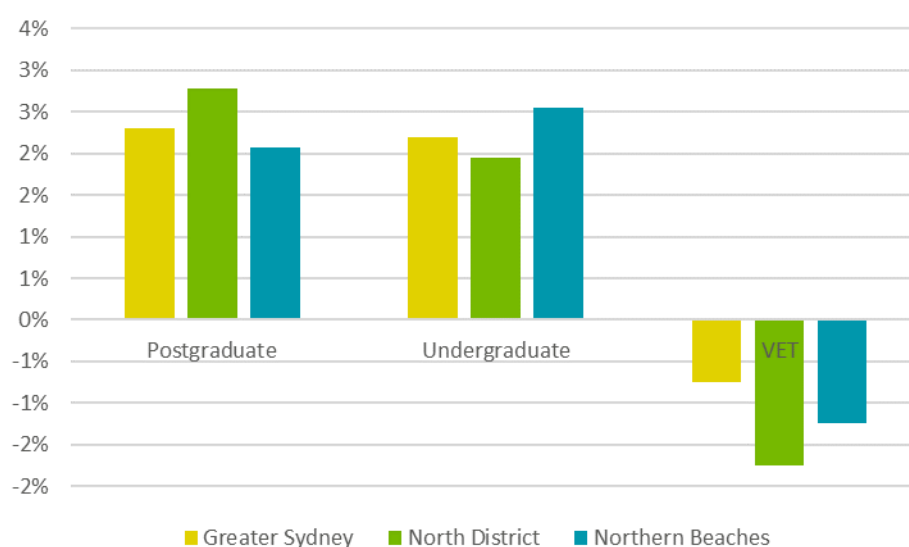
Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

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[15] As proportion of total population

6.6 Indigenous Status

Where are we now and How we are different?

There is about 1,391 people (about 0.5% of the population) in Northern Beaches declaring to be of *Indigenous*[16] origin. This rate is lower when compared to GS but higher than that of the District. Particular hotspots for people of *Indigenous* origin, are the suburbs of *Beacon Hill-Narraweena* and *Warriewood-Mona Vale.* Overall the proportion of *Indigenous* people has slightly increased in the Northern Beaches (which might be linked to a higher response rate - previously *Not Stated* and not attribute to actual growth).

TABLE 35:COMPARATIVE INDIGENOUS POPULATION TOTALS AND GROWTH RATES (2006-2016)

Geography	2006	2011	2016	Growth	CAGR (5-yr %)
Greater Sydney	37,035	45,735	57,655	20,620	24.77%
North District	1,868	2,464	3,289	1,421	32.69%
Northern Beaches	699	970	1,391	692	41.07%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

TABLE 36:COMPARATIVE INDIGENOUS POPULATION RATIOS[17] AND PROPORTIONAL CHANGES (2006-2016)

Geography	2006	2011	2016	Proportional Change (PP%)
Greater Sydney	0.97%	1.12%	1.28%	0.31%
North District	0.24%	0.30%	0.39%	0.14%
Northern Beaches	0.31%	0.41%	0.55%	0.24%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

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[16] Encompasses Aboriginal, Torres Strait Islander and both Aboriginal and Torres Strait Islander people
[17] As ratio of total population

FIGURE 26: BROADER CATCHMENTS INDIGENOUS POPULATION – MAP (2016)
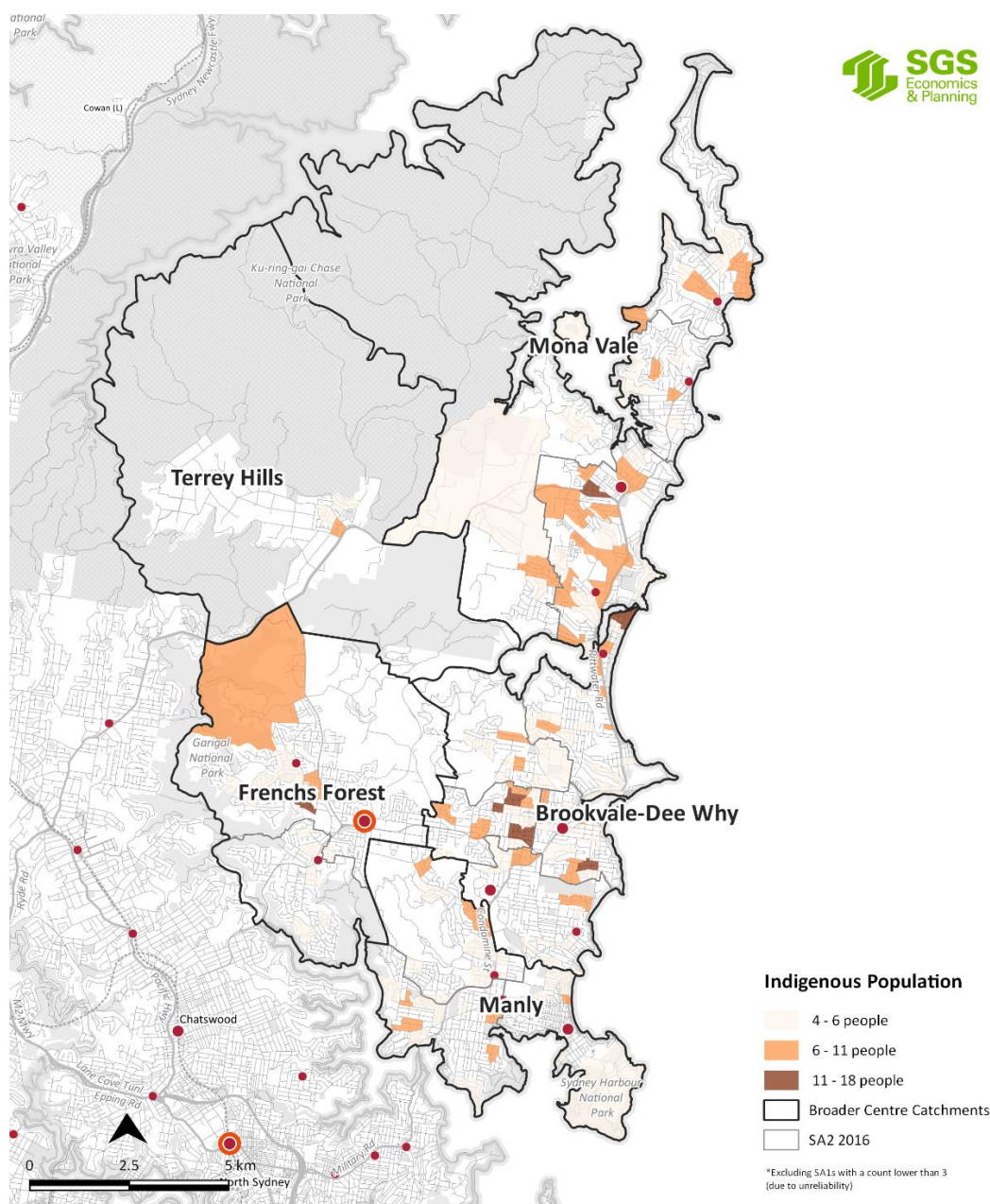
Source: ABS Census 2016 (TableBuilder Pro)

6.7   People with a Disability

Where are we now and How we are different?

There are 9,276 people that require assistance in a core activity residing in the Northern Beaches (about 3.67% of the population). Hotspots (dark blue shade) are located in specific locations within a number of suburbs - most likely linked to retirement communities and aged care facilities. The overall rate of people requiring assistance is slightly lower compared to GS but has experienced a slight proportional increase historically.

TABLE 37:COMPARATIVE TOTALS AND GROWTH RATES FOR POPULATION WITH NEED FOR ASSISTANCE IN CORE ACTIVITIY (2006-2016)

Geography	2006	2011	2016	Growth	CAGR (5-yr %)
Greater Sydney	140,218	174,381	215,054	74,836	23.84%

North District	23,754	27,224	31,896	8,142	15.88%
Northern Beaches	6,695	7,883	9,276	2,581	17.71%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

TABLE 38:COMPARATIVE RATIOS AND PROPORTIONAL CHANGES IN POPULATION WITH NEED FOR ASSISTANCE IN CORE ACTIVITIY (2006-2016)

Geography	2006	2011	2016	Proportional Change (PP%)
Greater Sydney	3.67%	4.27%	4.78%	1.11%
North District	3.10%	3.37%	3.75%	0.65%
Northern Beaches	2.97%	3.32%	3.67%	0.69%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

FIGURE 27: BROADER CATCHMENTS POPULATION WITH NEED FOR ASSISTANCE IN CORE ACTIVITY – MAP (2016)
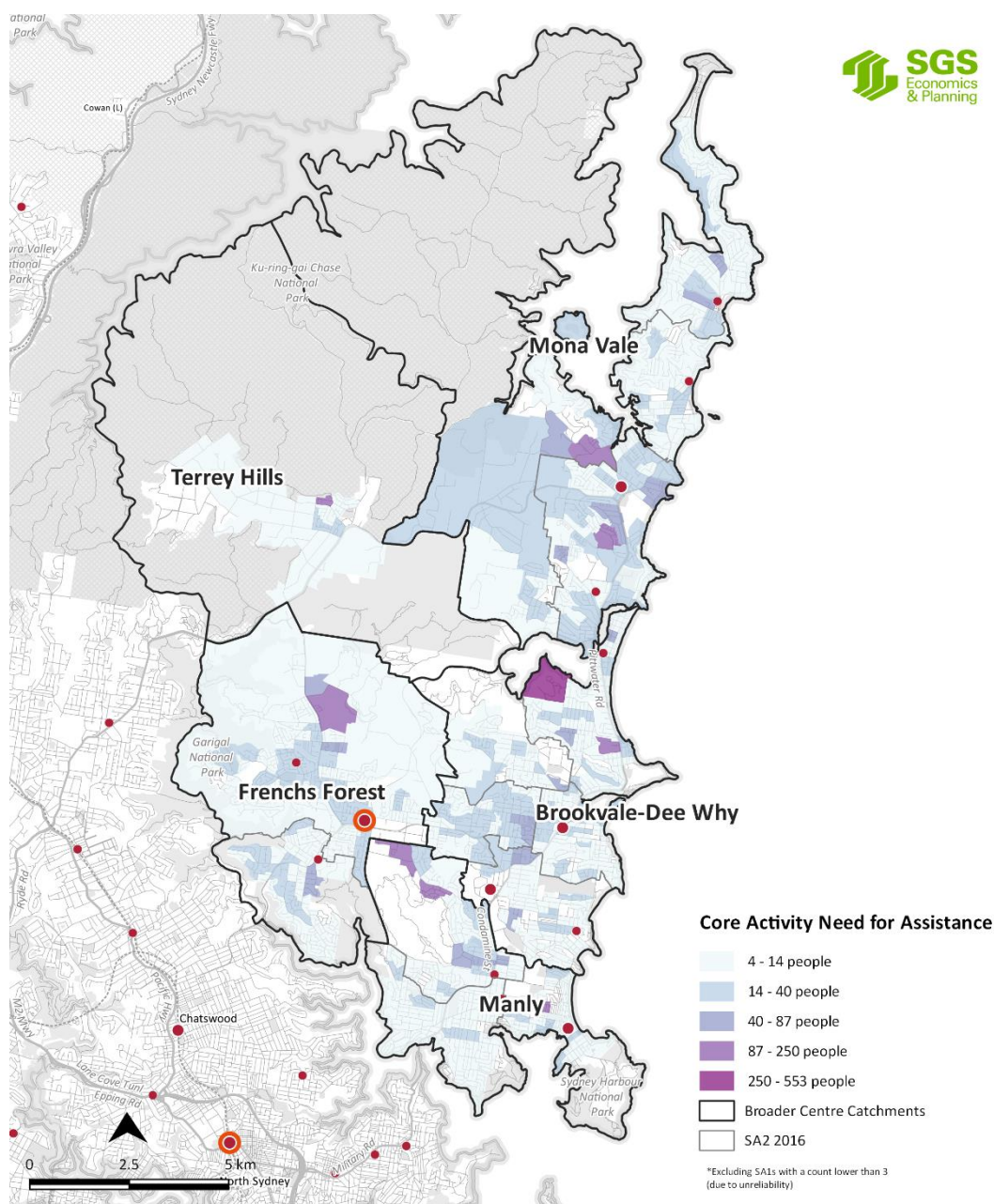
Source: ABS Census 2016 (TableBuilder Pro)

6.8   Socio-Economic Status (IRSAD)[18]

Where are we now?

Most areas on the Northern Beaches are relatively advantaged with small pockets of disadvantaged communities. Most of the lower scoring areas are in *Narraweena* and *Dee Why* and highest scoring suburbs are *Balgowlah-Clontarf-Seaforth* and *Frenchs Forest -Belrose.*

FIGURE 28: BROADER CATCHMENTS SEIFA IRSAD – MAP (2016)
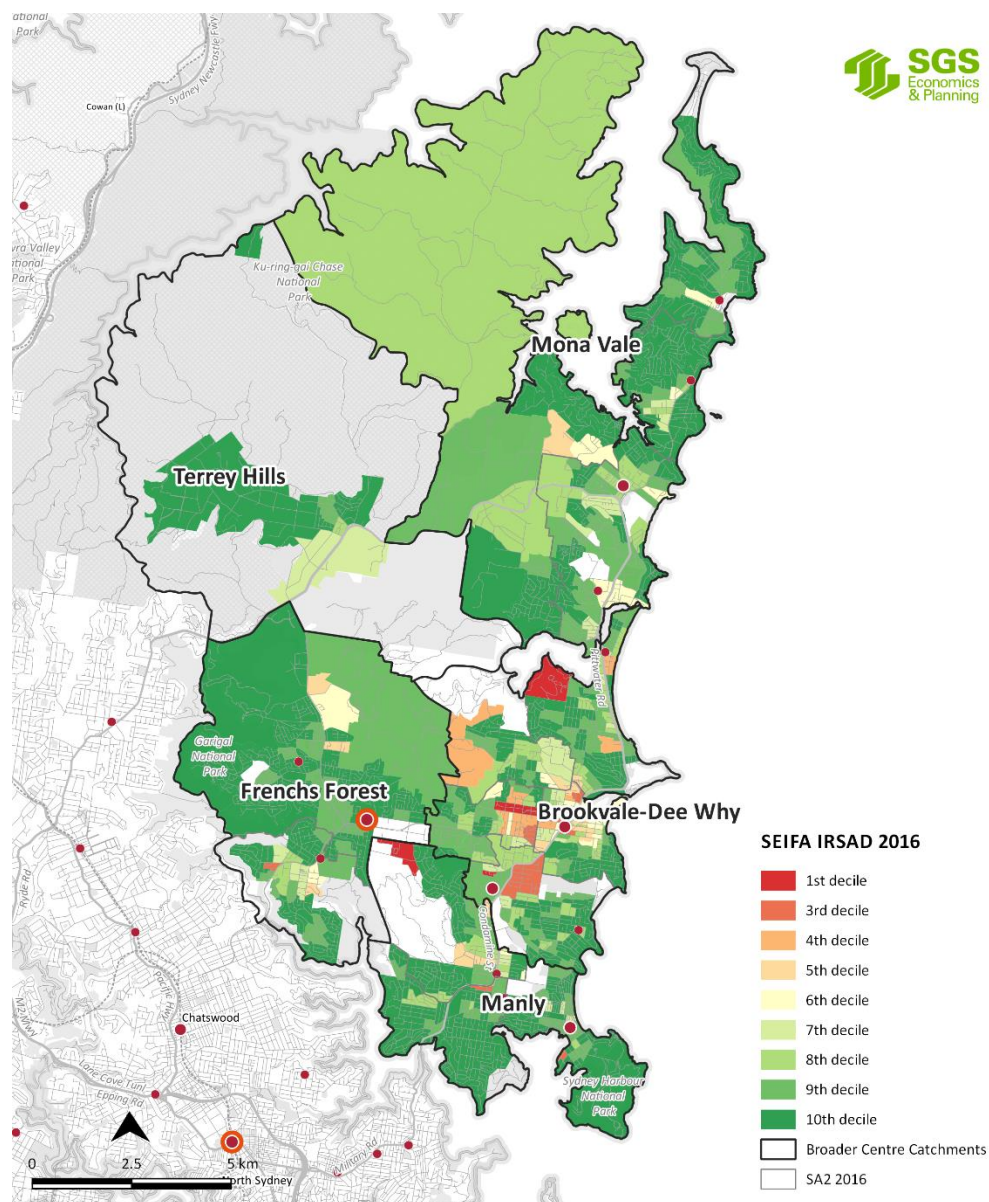
Source: ABS Census 2016 (TableBuilder Pro)

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[18] The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) summarises information about the economic and social conditions of people and households within an area, including both relative advantage and disadvantage measures.

A **low score** indicates relatively greater disadvantage and a lack of advantage in general. For example, an area could have a low score if there are:

- many households with low incomes, or many people in unskilled occupations, AND
- few households with high incomes, or few people in skilled occupations.

A **high score** indicates a relative lack of disadvantage and greater advantage in general. For example, an area may have a high score if there are:

- many households with high incomes, or many people in skilled occupations, AND
- few households with low incomes, or few people in unskilled occupations.

Although all suburbs have experienced a small drop in their scores, they have remained in the same decile[19] as in the previous Census period. However, the drop is scores, reflects broader national trends in decreasing social opportunities and living standards.

TABLE 39:SUBURB SEIFA IRSAD SCORE (2016)

Geography	2011 - Score	2016 - Score	Decile[20]	Change in Score
Balgowlah - Clontarf - Seaforth	1,118	1,141	10	-23
Manly - Fairlight	1,104	1,114	9	-10
Avalon - Palm Beach	1,107	1,121	9	-14
Bayview - Elanora Heights	1,108	1,125	9	-17
Newport - Bilgola	1,107	1,126	9	-20
Warriewood - Mona Vale	1,094	1,100	9	-5
Beacon Hill - Narraweena	1,050	1,059	8	-9
Cromer	1,085	1,093	8	-8
Dee Why - North Curl Curl	1,054	1,057	7	-4
Forestville - Killarney Heights	1,097	1,118	9	-22
Frenchs Forest - Belrose	1,112	1,139	10	-26
Freshwater - Brookvale	1,095	1,102	9	-7
Manly Vale - Allambie Heights	1,089	1,094	9	-5
Narrabeen - Collaroy	1,089	1,094	9	-5
Terrey Hills - Duffys Forest	1,106	1,125	9	-19
Northern Beaches	*1,111*	*1,092*	*10*	*-19*

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches is amongst the highest SEIFA-IRSAD decile and scoring LGAs in Australia, indicating the high standard of living, skilled population and overall larger number of opportunities available to its residents. However, the average score of the LGA has decreased slightly compared to the GS in the past 5 years.

TABLE 40:COMPARATIVE SEIFA IRSAD TOTALS AND GROWTH RATES (2011-2016)

Geography	2011 - Score	2016 - Score	Decile	Change in Score
Greater Sydney	1,047	1,039	8	-8
North District	1,117	1,097	10	-20
Northern Beaches	1,111	1,092	10	-19

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

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[19] Denoting how they compare to other parts of Australia. 1st decile denoting lowest and 10 highest
[20] Approximation based on SA1 averages

7. HOUSING

This chapter analyses a number of dwelling and household based measures and indicators related to local residents, pointing to historical and forecasted trends and insights

7.1 Dwellings and Occupancy Rates

Where are we now?

Most of the *Dwelling* growth on the Northern Beaches has followed similar trends to *Population* growth rates (see 6.1 Population). Hot spots of development have been in the suburbs of *Warriewood-Mona Vale, Dee Why-North Curl Curl* and *Narrabeen-Collaroy.*

TABLE 41:BROADER CATCHMENTS DWELLING TOTALS AND GROWTH RATES (2011-2016)

Geography	2011	2016	Growth	CAGR (5-yr %)
Mona Vale	23,408	24,600	1,192	5.09%
Terrey Hills	1,218	1,198	-20	-1.64%
Frenchs Forest	12,699	13,016	317	2.50%
Brookvale-Dee Why	35,951	37,520	1,569	4.36%
Manly	24,379	24,989	610	2.50%
Total	*97,662*	*101,468*	*6,949*	*3.61%*

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

Vacancy rates differ across the LGA with the largest percentages of *Occupied Private Dwellings* in the West section (most likely related to the larger number of family households). Lower ratios are in the suburb of *Manly-Fairlight* (hot spot for overseas migration and larger turnover of people) as well as *Mona Vale* broader catchment (in particular low rates in the suburb of *Avalon - Palm Beach* probably due to a high number of holiday rentals).

TABLE 42: BROADER CATCHMENTS OCCUPANCY RATES (2016)

Geography	Occupied private dwellings	Unoccupied private dwellings
Mona Vale	86.93%	13.07%
Terry Hills	93.74%	6.26%
Frenchs Forest	94.73%	5.27%
Brookvale-Dee Why	93.26%	6.74%
Manly	90.38%	9.62%

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 29: BROADER CATCHMENTS DWELLING GROWTH – MAP (2011-2016)

Source: ABS Census 2016 (TableBuilder Pro)
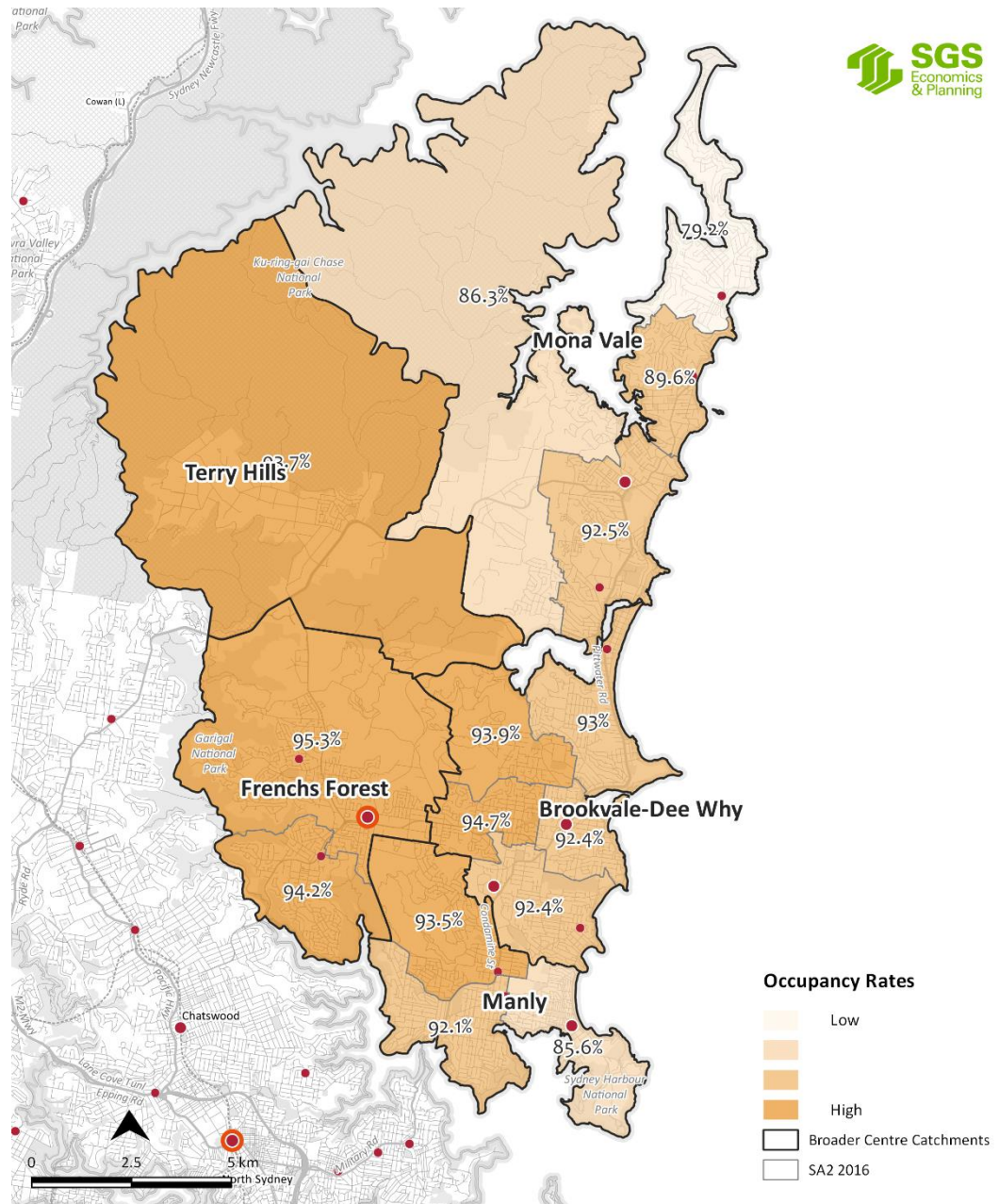
Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has had similar five-year growth dwelling rates compared to the District but nearly twice as less compared to GS. The growth has occurred evenly across the five-year periods.

TABLE 43:COMPARATIVE DWELLING TOTALS AND GROWTH RATES (2006-2016)

Geography	2006	2011	2016	Growth	CAGR (5-yr %)
Greater Sydney	1,509,459	1,581,024	1,711,288	201,829	6.48%
North District	318,282	330,261	342,302	24,020	3.70%
Northern Beaches	94,519	97,662	101,468	6,949	3.61%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Where are we going?

Northern Beaches is forecasted to grow at similar five-year growth rates compared to historical trends, and at slower rates in relation to the District and particularly GS. A total growth of +15,609 new dwellings is anticipated.

TABLE 44:COMPARATIVE FORECASTED DWELLING TOTALS AND GROWTH RATES (2021-2036)

Geography	2021	2026	2031	2036	Growth	CAGR (5-yr %)
Greater Sydney	1,952,909	2,151,081	2,356,444	2,583,639	630,730	9.78%
North District	379,422	402,505	427,926	455,138	75,716	6.25%
Northern Beaches	111,034	115,546	120,784	126,644	15,609	4.48%

Source: TfNSW – Travel Zone Projections 2016 (TZP16 v1.5)

7.2   Dwelling Type

Where are we now?

Northern Beaches is still dominated by *Separate Houses* but with a growing proportion of *Semi-Detached* dwellings and *Flat, Units or Apartments.* Especially high rates of *Separate Houses* are within the *Frenches Forest* and *Mona Vale* broader catchments.

Hot spots for *Semi-Detached* dwellings are the suburbs of *Warriewood-Mona Vale* and *Balgowlah - Clontarf - Seaforth* with the greatest proportion of *Flat, Units or Apartments* in the suburbs of *Dee Why-North Curl Curl, Manly-Fairlight* and moderate rates in *Freshwater-Brookvale* and *Narrabeen - Collaroy*

TABLE 45:BROADER CATCHMENTS DWELLING TYPE TOTALS (2016)

Geography	Separate house	Semi-detached	Flat, unit or apartment	Other
Mona Vale	17,275	2,527	4,377	303
Terrey Hills	1,098	25	19	40
Frenchs Forest	11,231	1,210	495	3
Brookvale-Dee Why	16,507	2,747	18,074	50
Manly	10,389	2,999	11,519	26
Total	*56,537*	*9,548*	*34,541*	*438*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 46:BROADER CATCHMENTS DWELLING TYPE PROPORTIONS (2016)

Geography	Separate house	Semi-detached	Flat, unit or apartment	Other
Mona Vale	71%	10%	18%	1%
Terrey Hills	93%	2%	2%	3%
Frenchs Forest	87%	9%	4%	0%
Brookvale-Dee Why	44%	7%	48%	0%
Manly	42%	12%	46%	0%
Total	*56%*	*9%*	*34%*	*0%*

Source: ABS Census 2016 (TableBuilder Pro)
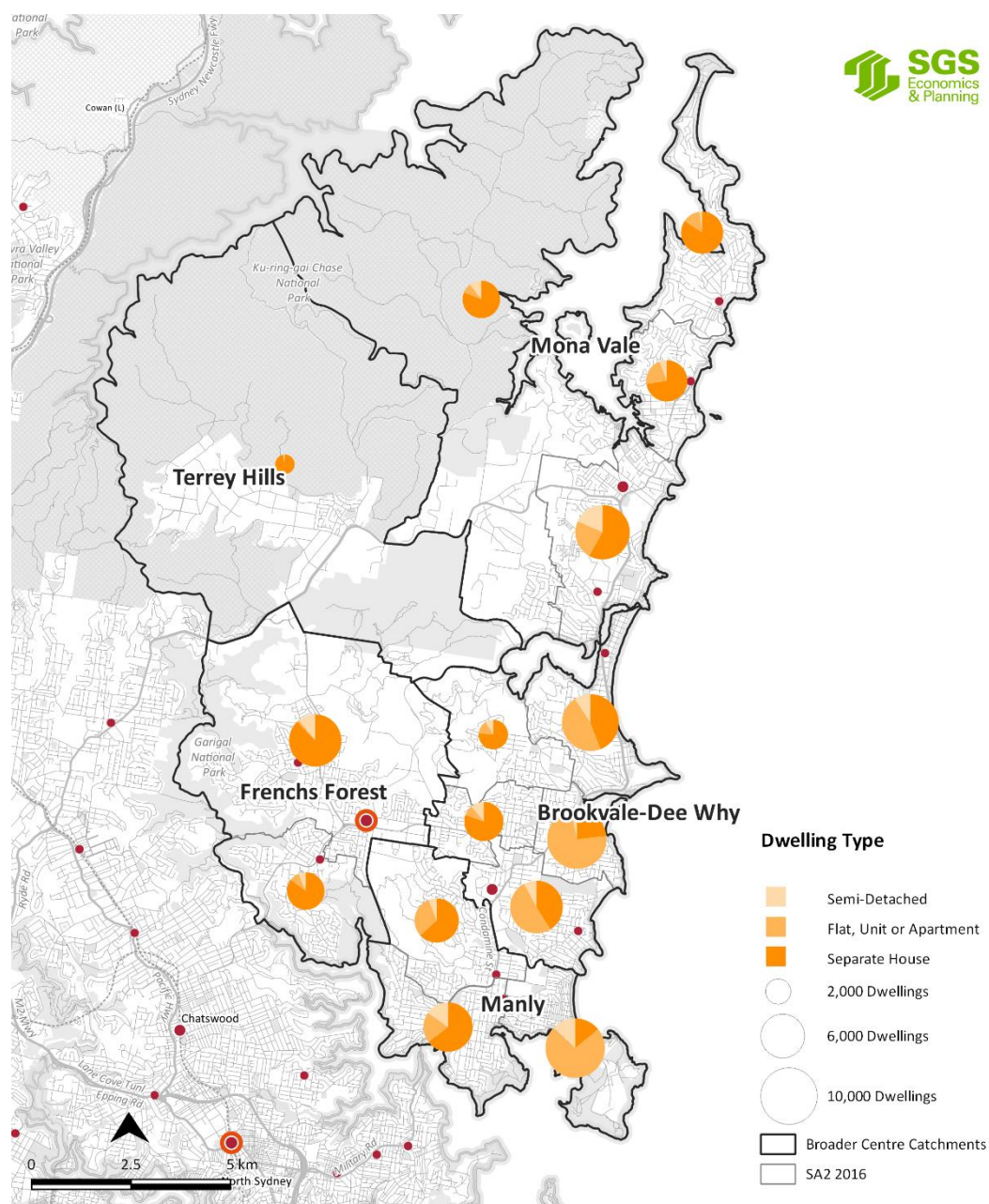
Source: ABS Census 2016 (TableBuilder Pro)

Overall, there has been a slight decrease in the number of *Separate Houses* and increases in the number of other types of dwellings. In particular, there has been a strong relative growth rate of *Semi-Detached* houses.

TABLE 47: LOCAL DWELLING TYPE TOTALS AND GROWTH RATES (2006-2016)

Geography	Separate house	Semi-detached	Flat, unit or apartment	Other
2016	56,537	9,548	34,541	438
2011	56,613	8,196	32,597	173
2006	56,945	6,729	30,466	341
Growth	*-408*	*2,819*	*4,075*	*97*
CAGR (5-yr %)	*-0.36%*	*19.12%*	*6.48%*	*13.33%*

Source: ABS Census 2016 (TableBuilder Pro)

Although there has been an overall growth in the number and proportion of *Semi-Detached* dwellings (better known as the "missing middle") especially in the suburbs of *Frenchs Forest - Belrose, Balgowlah - Clontarf - Seaforth* and *Warriewood-Mona Vale* certain areas have experienced a drop in their number and increase of *Separate Houses* - suburbs of *Avalon - Palm Beach* and *Newport-Bilgola.*

TABLE 48:SUBURB SEMI-DETACHED DWELLING TOTALS AND GROWTH RATES (2011-2016)

Geography	2011	2016	Growth
Balgowlah - Clontarf - Seaforth	767	1,165	398
Manly - Fairlight	1,332	1,459	127
Avalon - Palm Beach	590	108	-482
Bayview - Elanora Heights	138	458	320
Newport - Bilgola	551	306	-245
Warriewood - Mona Vale	1,282	1,655	373
Beacon Hill - Narraweena	401	533	132
Cromer	281	241	-40
Dee Why - North Curl Curl	393	352	-41
Forestville - Killarney Heights	141	290	149
Frenchs Forest - Belrose	507	920	413
Freshwater - Brookvale	774	686	-88
Manly Vale - Allambie Heights	207	375	168
Narrabeen - Collaroy	810	935	125
Terrey Hills - Duffys Forest	18	1,165	7
Northern Beaches	*8,196*	*9,548*	*1,352*

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches overall, has a similar dwelling composition to the District and GS but with slightly larger proportions of *Separate Houses* and lower proportions of *Semi-Detached* dwellings.

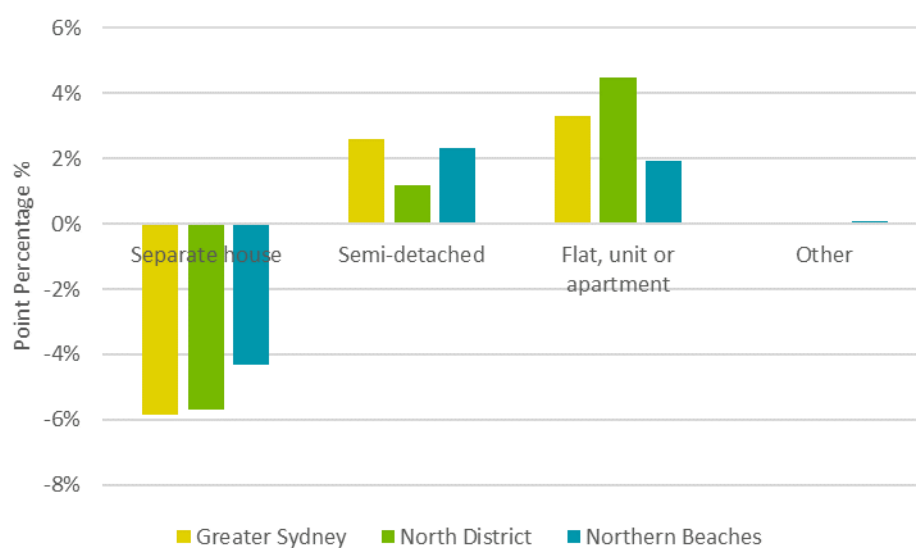FIGURE 32: COMPARATIVE DWELLING TYPE STRUCTURE (2016)
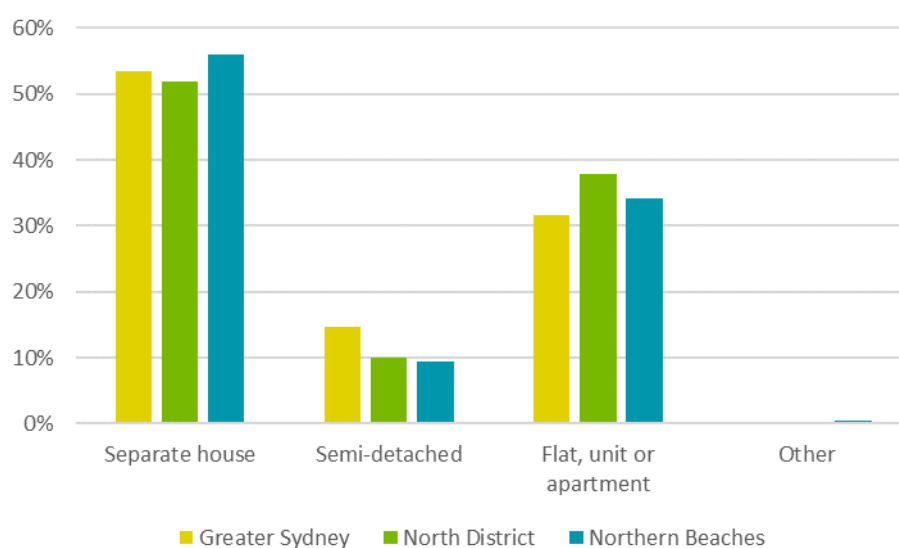
Source: ABS Census 2016 (TableBuilder Pro)

As with the previous graph, similar trends are present across all compared areas, with Northern Beaches having slightly lower growth trends in the proportion of *Separate Houses* (negative trends) and *Flat, Units or Apartments* (positive trends).

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

7.3 Family Household Composition

Where are we now?

At the broader catchment level, *Frenchs Forest* and *Terrey Hills* are predominately populated by *Couples with Children*, while *Brookvale-Dee Why* and *Manly* have larger proportions of *Lone Person* and *Group Households* - this is most likely related to a larger number of *Flat, Units or Apartments* in these area (leading to increased housing affordable) and better connectivity to the City - acting as major attractors for overseas migration (also often living in *Group Households*).

TABLE 49:BROADER CATCHMENTS FAMILY HOUSEHOLD TOTALS (2016)

Geography	Couples only	Couples with children	Single parent	Lone person household	Group household
Mona Vale	5,561	8,052	1,722	4,066	962
Terrey Hills	285	537	73	129	56
Frenchs Forest	2,781	5,802	955	1,866	508
Brookvale-Dee Why	8,308	11,316	2,840	8,198	2,394
Manly	5,597	7,699	1,597	4,859	1,458
Total	*22,468*	*33,442*	*7,202*	*19,132*	*5,698*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 50:BROADER CATCHMENTS FAMILY HOUSEHOLD PROPORTIONS (2016)

Geography	Couples only	Couples with children	Single parent	Lone person household	Group household
Mona Vale	27%	40%	8%	20%	5%
Terrey Hills	26%	50%	7%	12%	5%
Frenchs Forest	23%	49%	8%	16%	4%
Brookvale-Dee Why	25%	34%	9%	25%	7%
Manly	26%	36%	8%	23%	7%
Total	*26%*	*38%*	*8%*	*22%*	*6%*

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 34: BROADER CATCHMENTS FAMILY HOUSEHOLD STRUCTURE – MAP (2016)
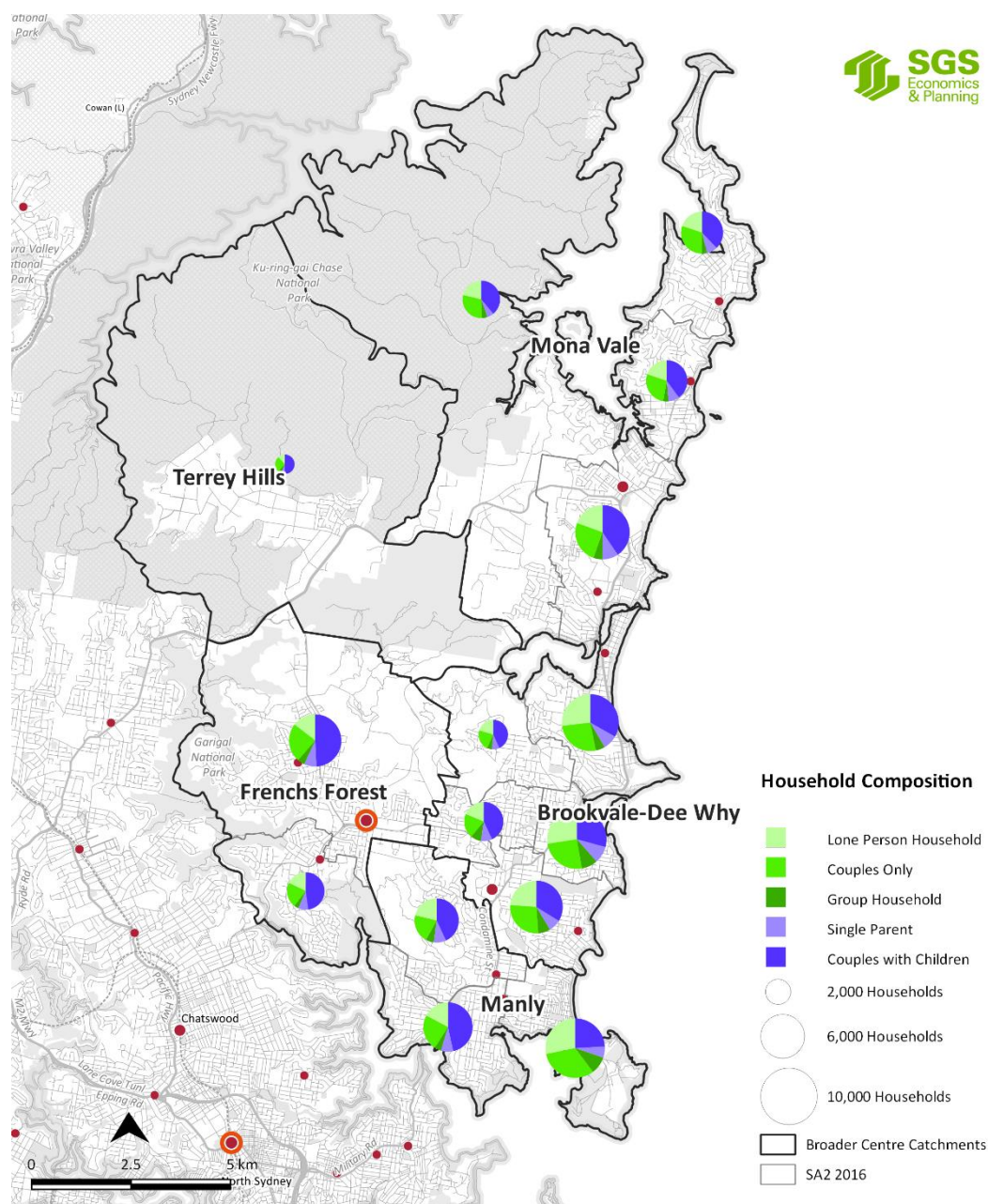
Source: ABS Census 2016 (TableBuilder Pro)

Northern Beaches is primarily a family orientated LGA, with the local amenity and lifestyle acting as major attractors for these types of households. Both the highest totals and growth rates are in the *Couples with Children* category.

TABLE 51: LOCAL FAMILY HOUSEHOLD TOTALS AND GROWTH RATES (2006-2016)

Year	Couples only	Couples with children	Single parent	Lone person household	Group household
2016	22,468	33,442	7,202	19,132	5,698
2011	22,457	31,215	7,202	19,278	5,402
Growth (Total)	*11*	*2,227*	*-*	*-146*	*296*
CAGR (5-yr %)	*0.02%*	*3.44%*	*-*	*-0.38%*	*2.67%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Looking at the family households residing in different types of dwellings, it becomes evident that regardless of the area, *Couple with Children* mostly reside it *Separate Houses,* with *Couples Only* being the second most prominent category in this type of dwelling.

TABLE 52:BROADER CATCHMENTS HOUSEHOLD TYPES IN SEPARATE HOUSES (2016)

Geography	Couples only	Couples with children	Single parent	Lone person household	Group household
Mona Vale	26.79%	46.57%	7.90%	12.99%	5.74%
Terrey Hills	26.21%	51.72%	6.88%	7.79%	7.39%
Frenchs Forest	22.89%	52.92%	8.08%	10.70%	5.40%
Brookvale-Dee Why	20.58%	51.41%	8.87%	11.68%	7.46%
Manly	20.95%	55.79%	7.81%	11.03%	4.42%
Total	*23.03%*	*51.15%*	*8.19%*	*11.66%*	*5.97%*

Source: ABS Census 2016 (TableBuilder Pro)

Semi-Detached dwellings are mostly composed of a mix of *Lone Person Households, Couples with Children* and *Couples Only.* The *Frenchs Forest* broader catchment has a particularly large proportion of *Lone Person Households* (potentially elderly people downsizing or living in retirement villages).

TABLE 53:BROADER CATCHMENTS HOUSEHOLD TYPES IN SEMI-DETACHED DWELLINGS (2016)

Geography	Couples only	Couples with children	Single parent	Lone person household	Group household
Mona Vale	27.51%	28.21%	9.93%	31.47%	2.89%
Terrey Hills	34.48%	27.59%	10.34%	27.59%	0.00%
Frenchs Forest	25.10%	17.98%	6.92%	47.50%	2.50%
Brookvale-Dee Why	22.36%	26.24%	9.88%	36.24%	5.28%
Manly	27.34%	33.91%	8.13%	24.84%	5.78%
Total	*25.68%*	*28.12%*	*8.96%*	*32.80%*	*4.43%*

Source: ABS Census 2016 (TableBuilder Pro)

Family households residing in *Flat, Units or Apartments* are primarily *Lone Person Households* (especially in the *Frenchs Forest* broader catchment) and *Couples Only. Manly* also has a noticeably proportion of *Group Households* as well.

TABLE 54:BROADER CATCHMENTS HOUSEHOLD TYPES IN FLAT, UNITS OR APARTMENTS (2016)

Geography	Couples only	Couples with children	Single parent	Lone person household	Group household
Mona Vale	28.44%	16.90%	10.26%	40.60%	3.80%
Terrey Hills	21.05%	36.84%	0.00%	42.11%	0.00%
Frenchs Forest	22.80%	13.06%	5.94%	53.21%	4.99%
Brookvale-Dee Why	29.88%	18.90%	8.10%	35.39%	7.73%
Manly	31.33%	16.89%	7.00%	34.67%	10.12%
Total	*30.05%*	*17.94%*	*7.98%*	*36.07%*	*7.96%*

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Compared to GS, Northern Beaches has a slightly larger proportion of *Couples with Children* as well as *Couples Only*, with lower rates of *Group Households* and *Single Parents*. When observed in relation to the North District, relatively similar trends are noted.

FIGURE 35: COMPARATIVE FAMILY HOUSEHOLD STRUCTURE (2016)
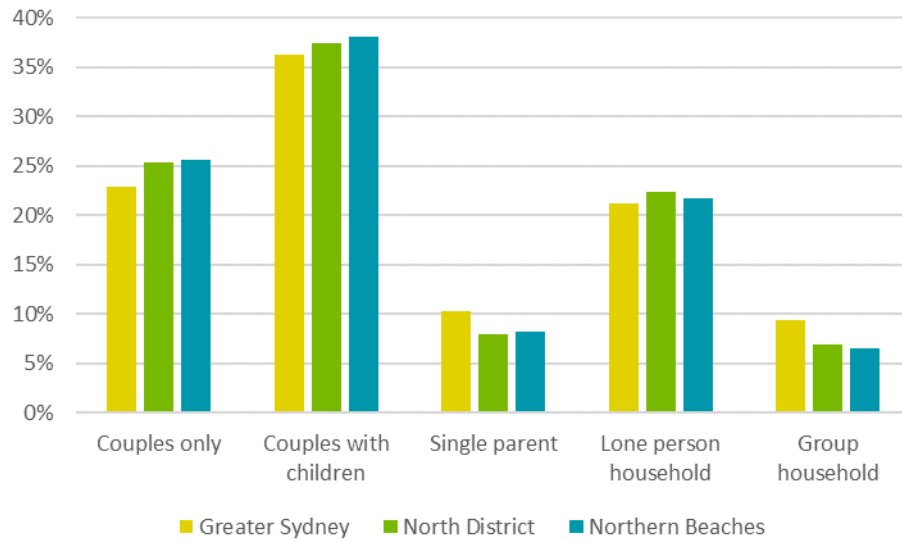
Source: ABS Census 2016 (TableBuilder Pro)

Considering proportional change, positive tendencies are noted in *Couples with Children* and *Group Households* in all compared areas and negative trends in *Lone Person Households* and *Couples Only* - likely related to housing affordability. If these trends continued, it could potentially lead to further social stratification in the housing market.

FIGURE 36: COMPARATIVE PROPORTIONAL CHANGE IN FAMILY HOUSEHOLD STRUCTURE (2006-2016)
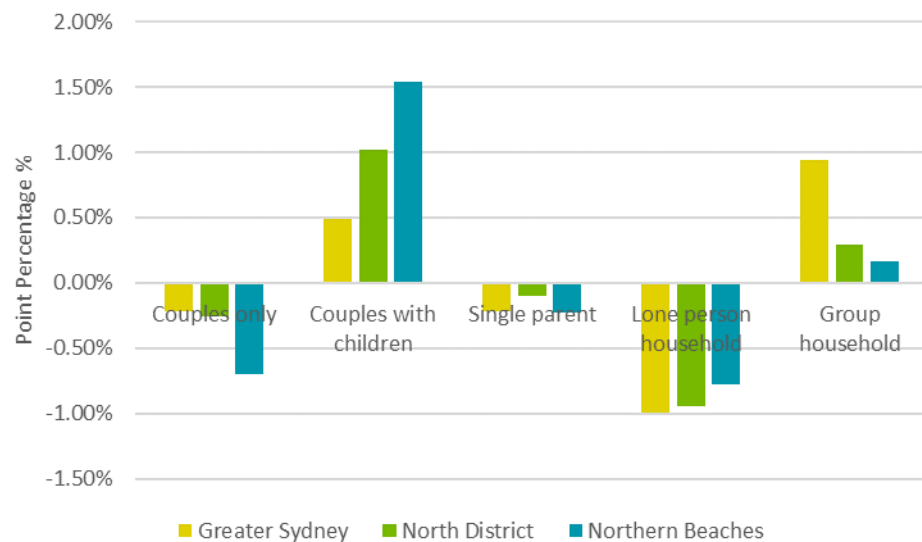
Source: ABS Census 2011 and 2016 (TableBuilder Pro)

7.4 Tenure Type

Where are we now?

Approximately two thirds of households on the Northern Beaches own a property (either *Outright* or *With a Mortgage)* while the remaining households predominantly *Rent.* High rates of *Outright,* as well as *Mortgage* based ownership are present within the *Frenchs Forest* and *Mona Vale* broader catchments. Expectedly the *Brookvale-Dee Why* and *Manly* broader catchments have higher proportion of rented properties.

TABLE 55:   BROADER CATCHMENTS TENURE TYPE TOTALS (2016)

Geography	Owned outright	Owned with a mortgage	Being purchased under a rent/buy scheme	Rented	Being occupied rent-free	Being occupied under a life tenure scheme	Other tenure type
Mona Vale	8,447	7,760	21	3,398	146	287	149
Terrey Hills	456	437	-	145	13	-	7
Frenchs Forest	5,115	4,998	11	1,452	70	136	52
Brookvale-Dee Why	9,634	11,297	32	10,492	213	427	225
Manly	6,903	6,770	13	6,945	158	88	71
Total	*30,557*	*31,251*	*87*	*22,440*	*605*	*935*	*499*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 56:   BROADER CATCHMENTS TENURE TYPE PROPORTIONS (2016)

Geography	Owned outright	Owned with a mortgage	Being purchased under a rent/buy scheme	Rented	Being occupied rent-free	Being occupied under a life tenure scheme	Other tenure type
Mona Vale	42%	38%	0%	17%	1%	1%	1%
Terrey Hills	43%	41%	0%	14%	1%	0%	1%
Frenchs Forest	43%	42%	0%	12%	1%	1%	0%
Brookvale-Dee Why	30%	35%	0%	32%	1%	1%	1%
Manly	33%	32%	0%	33%	1%	0%	0%
Total	*35%*	*36%*	*0%*	*26%*	*1%*	*1%*	*1%*

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 37: BROADER CATCHMENTS TENURE TYPE STRUCTURE – MAP (2016)
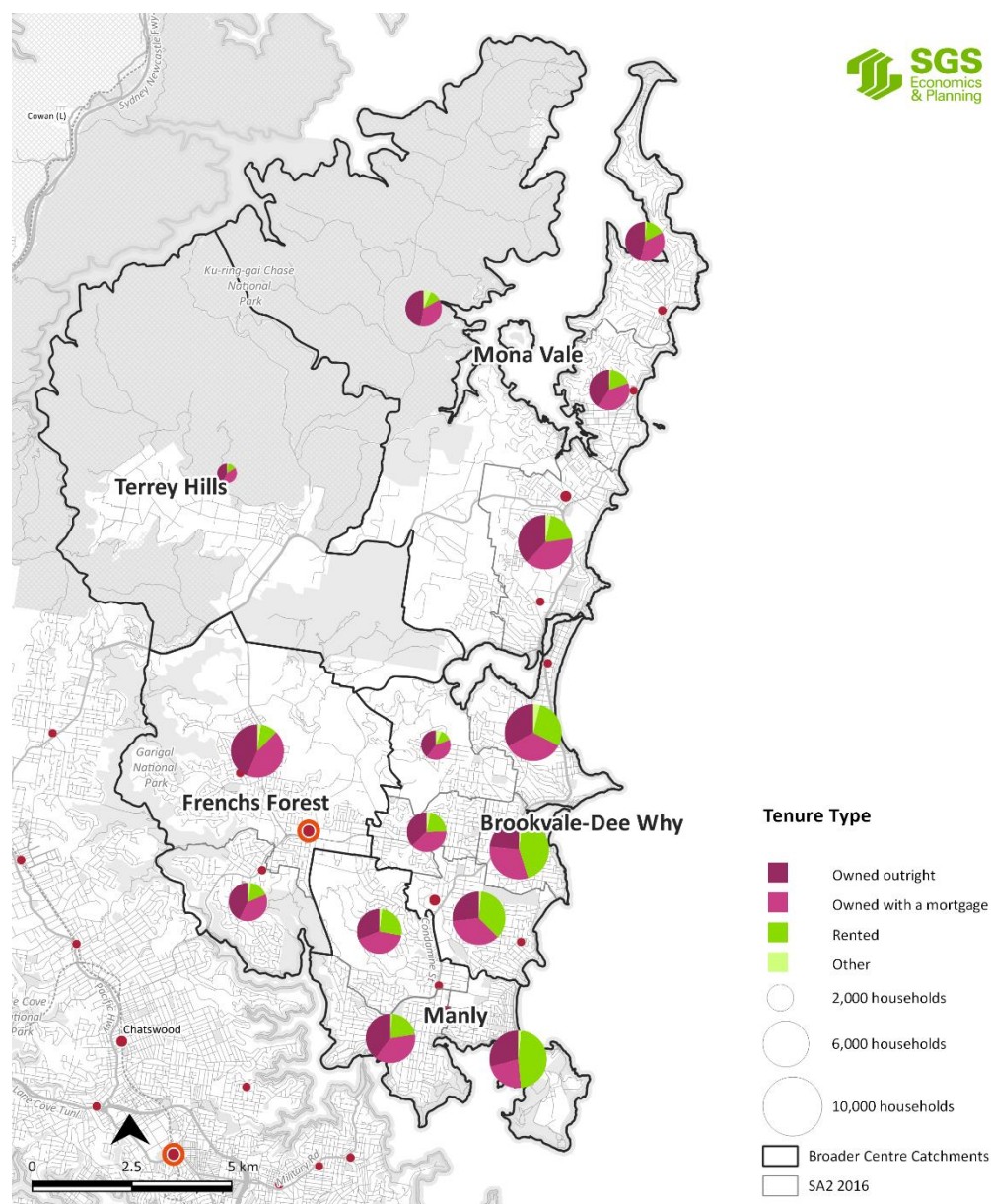
Source: ABS Census 2016 (TableBuilder Pro)

There is an increasing number of *Owned with a Mortgage* and *Rented* households. The increase in the number of *Rented* premises has been particularly high between 2006 and 2011.

TABLE 57: LOCAL TENURE TYPE TOTALS AND GROWTH RATES (2006-2016)

Year	Owned outright	Owned with a mortgage	Being purchased under a rent/buy scheme	Rented	Being occupied rent-free	Being occupied under a life tenure scheme	Other tenure type
2016	30,557	31,251	87	22,440	605	935	499
2011	29,904	30,738	115	22,032	689	501	536
2006	29,962	27,357	88	20,769	642	532	393
Growth (Total)	*595*	*3,894*	*-1*	*1,671*	*-37*	*403*	*106*
CAGR (5-yr %)	*0.99%*	*6.88%*	*-0.57%*	*3.95%*	*-2.92%*	*32.57%*	*12.68%*

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Overall, there is a higher ownership rate on the Northern Beaches compared to the District and particularly GS. The opposite holds true for the proportion of *Rented* premises.

FIGURE 38: COMPARATIVE TENURE TYPE STRUCTURE (2016)
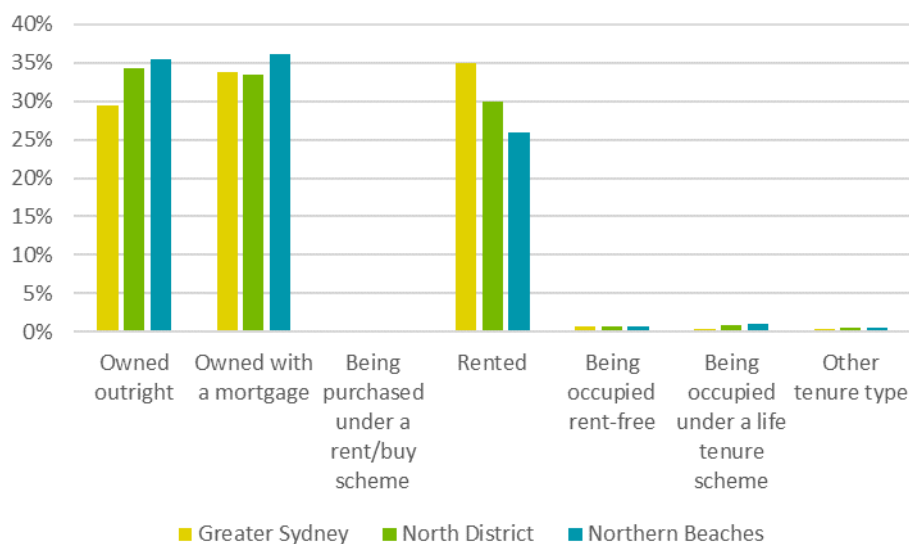
Source: ABS Census 2016 (TableBuilder Pro)

There is an increase, in particularly when compared to GS, in the proportion of *Owned with a Mortgage* household tenures on the Northern Beaches. The proportion of *Rented* premises has remained the same compared to GS and the District which have experienced an increase.

FIGURE 39: COMPARATIVE PROPORTIONAL CHANGE IN TENURE TYPE STRUCTURE (2006-2016)
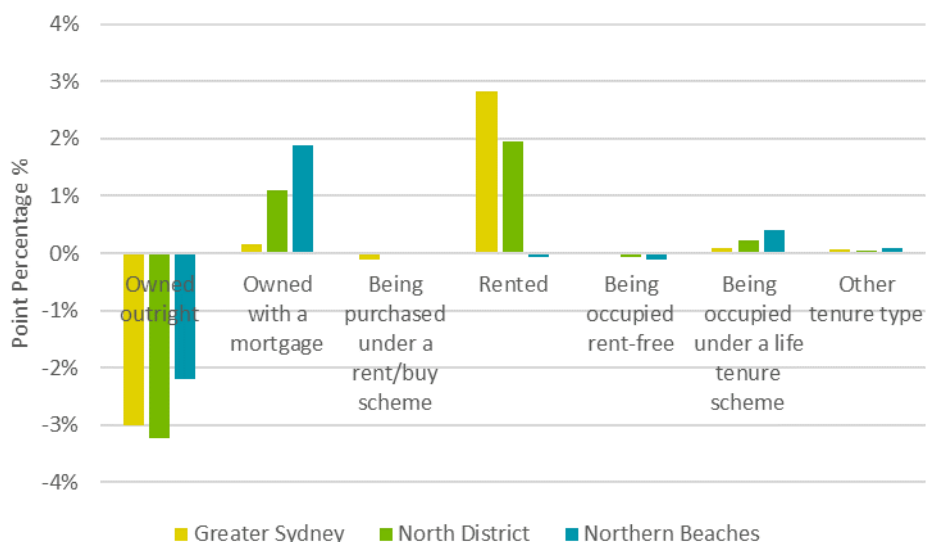
Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

7.5   Motor Vehicle Ownership

Where are we now?

Northern Beaches has a high car ownership rate overall, with the *Mona Vale* and *Frenchs Forest* broader catchments having large proportions of households with *Three* and *Four or*

more Motor Vehicles. Suburbs that have a smaller number of cars per household are *Manly-Fairlight, Dee Why-North Curl Curl* and *Freshwater-Brookvale.*

TABLE 58:BROADER CATCHMENTS CAR OWNERSHIP TOTALS (2016)

Geography	No motor vehicles	One motor vehicle	Two motor vehicles	Three motor vehicles	Four or more motor vehicles
Mona Vale	704	5,783	8,987	2,971	1,625
Terrey Hills	12	202	454	200	185
Frenchs Forest	385	3,161	5,531	1,732	885
Brookvale-Dee Why	2,652	12,996	11,876	3,127	1,621
Manly	2,109	8,959	7,310	1,786	695
Total	*5,894*	*31,115*	*34,185*	*9,893*	*4,989*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 59:BROADER CATCHMENTS CAR OWNERSHIP PROPORTIONS (2016)

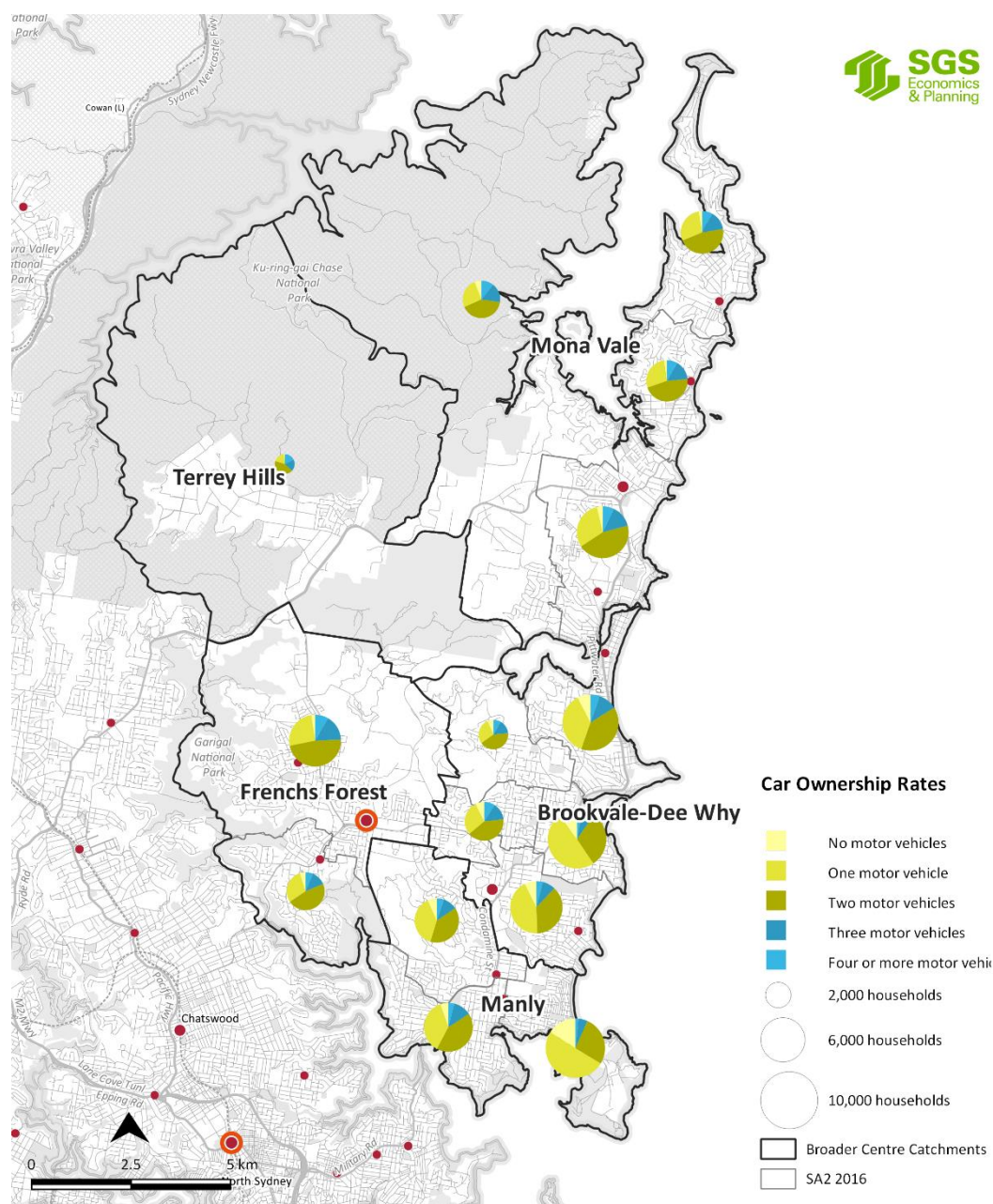| Geography	No motor vehicles	One motor vehicle	Two motor vehicles	Three motor vehicles	Four or more motor vehicles
Mona Vale	4%	29%	45%	15%	8%
Terrey Hills	1%	19%	43%	19%	18%
Frenchs Forest	3%	27%	47%	15%	8%
Brookvale-Dee Why	8%	40%	37%	10%	5%
Manly	10%	43%	35%	9%	3%
Total	*7%*	*36%*	*40%*	*11%*	*6%*

Source: ABS Census 2016 (TableBuilder Pro)

Per household car ownership rates have increased at a suburb level - in average 4%. The highest increase has occurred in the suburbs of *Beacon Hill-Narraweena, Manly-Fairlight* and *Newport-Bilgola.* The average number of *Motor Vehicles* per household is about 1.7 cars.

TABLE 60:SUBURB CAR OWNERSHIP PER HOUSEHOLD RATES (2011-2016)

Geography	2011	2016	Growth
Terrey Hills - Duffys Forest	2.08	2.18	5%
Frenchs Forest - Belrose	1.86	1.91	2%
Newport - Bilgola	1.76	1.88	7%
Avalon - Palm Beach	1.73	1.85	7%
Bayview - Elanora Heights	1.83	1.84	0%
Cromer	1.75	1.81	4%
Forestville - Killarney Heights	1.75	1.77	1%
Beacon Hill - Narraweena	1.63	1.76	8%
Warriewood - Mona Vale	1.72	1.75	2%
Balgowlah - Clontarf - Seaforth	1.59	1.63	3%
Manly Vale - Allambie Heights	1.51	1.60	6%
Narrabeen - Collaroy	1.52	1.56	3%
Freshwater - Brookvale	1.38	1.47	6%
Dee Why - North Curl Curl	1.27	1.30	2%
Manly - Fairlight	1.06	1.15	8%

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

FIGURE 40: BROADER CATCHMENTS CAR OWNERSHIP STRUCTURE – MAP (2016)

Source: ABS Census 2016 (TableBuilder Pro)

In total, there has been an increase of households with *Three* and *Four or more Motor Vehicles* on the Northern Beaches, with an overall decline in the number of households with *No* or *One Motor Vehicle.*

TABLE 61: LOCAL CAR OWNERSHIP TOTALS AND GROWTH RATES (2006-2016)

Year	No motor vehicles	One motor vehicle	Two motor vehicles	Three motor vehicles	Four or more motor vehicles
2016	5,894	31,115	34,185	9,893	4,989
2011	6,824	31,785	33,525	8,411	3,745
2006	7,374	29,799	31,193	7,566	3,212
Growth (Total)	*-930*	*-670*	*660*	*1,482*	*1,244*
CAGR (5-yr %)	*-10.60%*	*2.18%*	*4.69%*	*14.35%*	*24.63%*

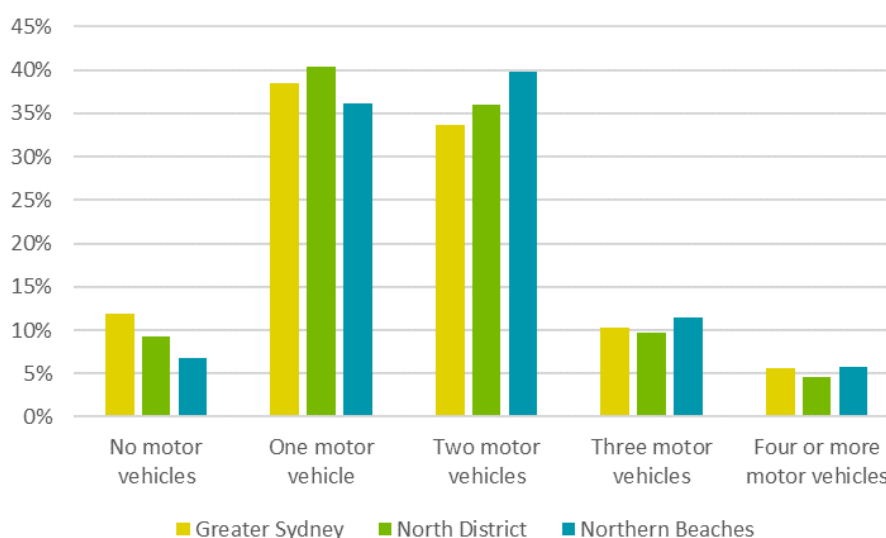Source: ABS Census 2016 (TableBuilder Pro)

There might a number of reasons for this increase:

- If assuming the overall household composition between 2011 and 2016 has stayed relatively similar, this trend is potentially pointing to larger ownership rates as a result of preference
- A larger number of group households
- An increase of population aged 17+ in more established suburbs, leading to higher car rates - i.e. Young Adults purchasing cars once reaching certain legal age

How are we different?

Overall, levels of car ownership are similar across the District and GS, with Northern Beaches having a larger proportion of households with *Two Motor Vehicles* and a lower proportion of those with *No* or *One Motor Vehicle.*

FIGURE 41: COMPARATIVE CAR OWNERSHIP STRUCTURE (2016)

Source: ABS Census 2016 (TableBuilder Pro)

There is a trend towards an increase of the number of *Motor Vehicles* per household across all compared areas. Northern Beaches has similar trends with slightly stronger growth rates compared to the District.

FIGURE 42: COMPARATIVE PROPORTIONAL CHANGE IN CAR OWNERSHIP STRUCTURE (2006-2016)

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

8. JOBS AND SKILLS (RESIDENTS)

This chapter analyses a number of employment based measures and indicators related to local residents, pointing to historical and forecasted trends and insights

8.1   Labour Force Status (PUR)

Where are we now?

The two most prominent groups in the labour force of Northern Beaches are *Employed Full-Time* and *Not in the Labour Force*[21]. The overall unemployment level is low. Areas with larger numbers of full-time employees are located in the suburbs of *Manly-Fairlight, Freshwater-Brookvale* and *Dee Why-North Curl Curl* which at the same time represent areas with higher proportions of *Young Adults, Adults* and *Overseas* migration.

Likewise, higher number of people *Not in the Labour Force* are in the suburbs of *Bayview-Elenora Heights, Forestville-Killarney Heights* and *Avalon-Palm Beach* that also represent areas of larger numbers of *Retirees* and *Children.*

TABLE 62:BROADER CATCHMENTS LABOUR FORCE TOTALS (2016)

Geography	Employed, worked full-time	Employed, worked part-time	Employed, away from work	Unemployed, looking for full-time work	Unemployed, looking for part-time work	Not in the labour force
Mona Vale	17,667	11,120	1,338	468	533	14,896
Terrey Hills	1,035	681	82	27	33	913
Frenchs Forest	10,898	6,430	757	339	397	9,788
Brookvale-Dee Why	31,756	15,008	2,188	793	765	19,732
Manly	19,872	9,361	1,313	538	596	12,233
Total	*81,285*	*42,658*	*5,736*	*2,201*	*2,437*	*57,544*

Source: ABS Census 2016 (TableBuilder Pro)

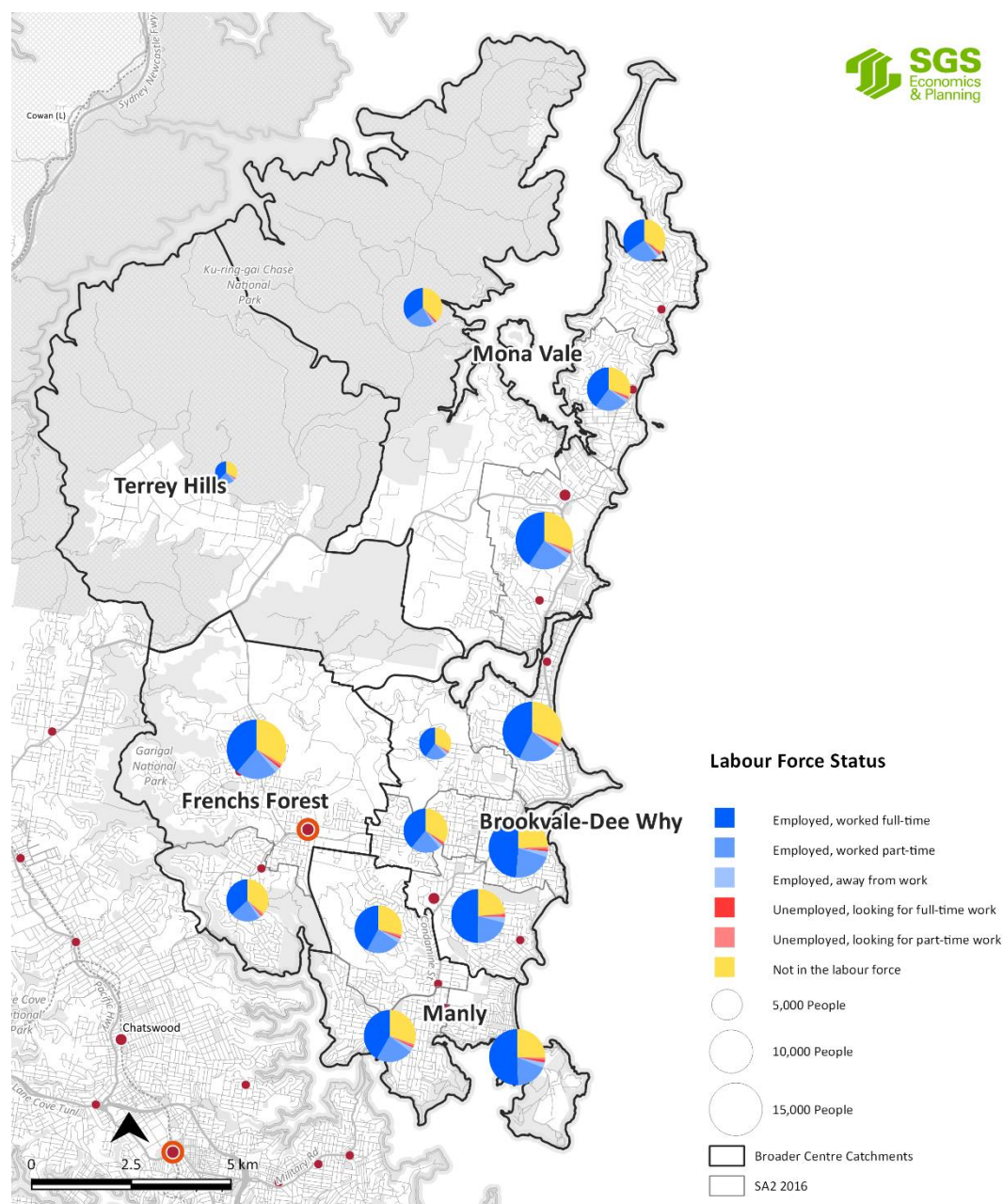TABLE 63:BROADER CATCHMENTS LABOUR FORCE PROPORTIONS (2016)

Geography	Employed, worked full-time	Employed, worked part-time	Employed, away from work	Unemployed, looking for full-time work	Unemployed, looking for part-time work	Not in the labour force
Mona Vale	38%	24%	3%	1%	1%	32%
Terrey Hills	37%	25%	3%	1%	1%	33%
Frenchs Forest	38%	22%	3%	1%	1%	34%
Brookvale-Dee Why	45%	21%	3%	1%	1%	28%
Manly	45%	21%	3%	1%	1%	28%
Total	*42%*	*22%*	*3%*	*1%*	*1%*	*30%*

Source: ABS Census 2016 (TableBuilder Pro)

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[21] Not in the Labour Force encompasses persons aged 15 years and over that are:
- Not employed and not wanting to work
- Not employed and wanting to work but not available to start working in reference week

FIGURE 43: BROADER CATCHMENTS LABOUR FORCE STRUCTURE – MAP (2016)

Source: ABS Census 2016 (TableBuilder Pro)

Overall, there has been an increase in the number of part time workers in the labour force (which follows nation-wide trends), both those already employed and those looking for work.

TABLE 64: LOCAL LABOUR FORCE TOTALS AND GROWTH RATES (2006-2016)

Year	Employed, worked full-time	Employed, worked part-time	Employed, away from work	Unemployed, looking for full-time work	Unemployed, looking for part-time work	Not in the labour force
2016	81,285	42,658	5,736	2,201	2,437	57,544
2011	76,843	38,300	6,491	2,322	2,094	55,548
2006	73,630	34,996	6,742	1,716	1,491	51,894
Growth	*7,655*	*7,662*	*-1,006*	*485*	*946*	*5,650*
CAGR (5-yr %)	*5.07%*	*10.41%*	*-7.76%*	*13.25%*	*27.85%*	*5.30%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Compared to the District and GS, Northern Beaches has a slightly lower proportion of people *Not in the Labour Force* and higher proportion of people *Employed, Worked Part-Time.*

FIGURE 44: COMPARATIVE LABOUR FORCE STRUCTURE (2016)

Source: ABS Census 2016 (TableBuilder Pro)

There is a further increase in the ratio of part time workers across the District and GS, as in the Northern Beaches, with a slight decline in all other categories and relative stagnation in *Unemployed, Looking for Full-Time Work.*

FIGURE 45: COMPARATIVE PROPORTIONAL CHANGE IN LABOUR FORCE STRUCTURE (2006-2016)

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

8.2   Industry of Employment (PUR)

Where are we now?

The largest number of people living on the Northern Beaches are employed within the *Knowledge Intensive* and *Population Serving* sector. The proportion of residents employed in the *Knowledge Intensive* industries is particularly high in the *Manly* centre catchment, suburbs of *Manly-Fairlight* and *Balgowlah - Clontarf - Seaforth* and *Manly Vale - Allambie Heights* to a lower extent. Other areas with higher proportions of *Knowledge Intensive* workers are also *Forestville - Killarney Heights* and *Frenchs Forest - Belrose.*

People working in the *Population Serving* sector are relatively evenly distributed across the various suburbs, but particularly concentrated along the Dee Why to Palm Beach corridor. The suburb, with the most diverse mix of employed residents in the four BIC is *Warriewood - Mona Vale.*

TABLE 65:BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (PUR) TOTALS (2016)

Geography	Knowledge Intensive	Health and Education	Population Serving	Industrial
Mona Vale	8,895	6,030	9,524	3,967
Terrey Hills	523	325	567	254
Frenchs Forest	6,158	3,704	5,161	2,130
Brookvale-Dee Why	15,092	9,414	15,531	6,211
Manly	13,144	5,426	7,713	2,995
Total	*43,939*	*24,962*	*38,569*	*15,999*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 66:BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (PUR) PROPORTIONS (2016)

Geography	Knowledge Intensive	Health and Education	Population Serving	Industrial
Mona Vale	31%	21%	34%	14%
Terrey Hills	31%	19%	34%	15%
Frenchs Forest	36%	22%	30%	12%
Brookvale-Dee Why	33%	20%	34%	13%
Manly	45%	19%	26%	10%
Total	*36%*	*20%*	*31%*	*13%*

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 46: BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (PUR) – MAP (2016)
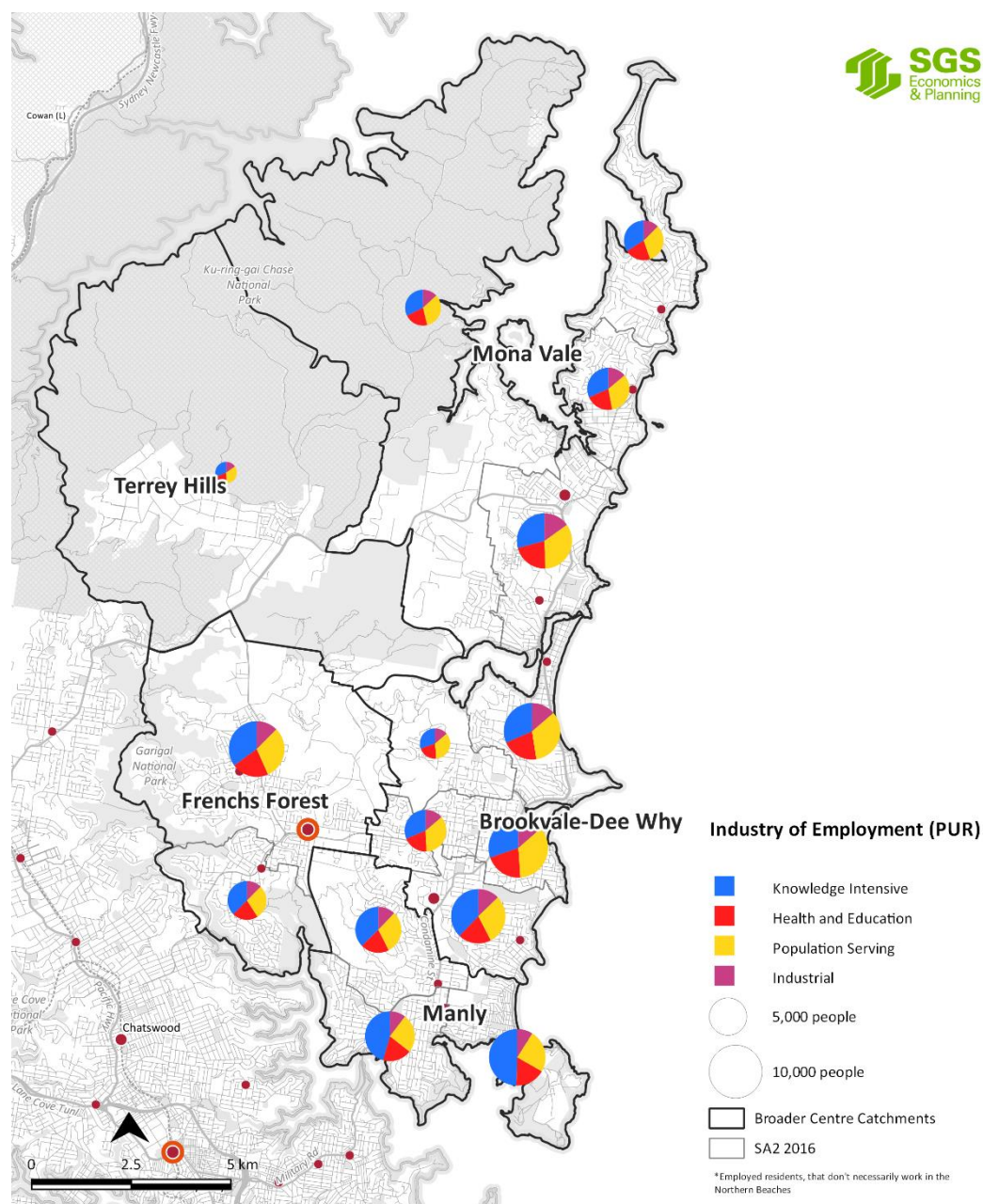
Source: ABS Census 2016 (TableBuilder Pro)

As mentioned previously, there has been a further increase in the number of people employed within the *Knowledge Intensive* but also in the *Health and Education* and *Population Serving* sector, while there is a decline in the *Industrial* group.

TABLE 67: LOCAL INDUSTRY OF EMPLOYMENT (PUR) TOTALS AND GROWTH RATES (2006-2016)

Year	Knowledge Intensive	Health and Education	Population Serving	Industrial
2016	43,939	24,962	38,569	15,999
2011	41,476	21,694	35,333	20,280
2006	37,904	19,220	34,466	20,779
Growth	*6,035*	*5,742*	*4,103*	*-4,780*
CAGR (5-yr %)	*7.67%*	*13.96%*	*5.78%*	*-12.25%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has a slightly higher proportion of people working in the *Population Serving* industries compared to GS and particularly to the District. Meanwhile the District has a noticeable greater proportion of residents employed in the *Knowledge Intensive* group, while GS is more inclined to the *Industrial* category than the other two areas.

FIGURE 47: COMPARATIVE INDUSTRY OF EMPLOYMENT (PUR) STRUCTURE (2016)
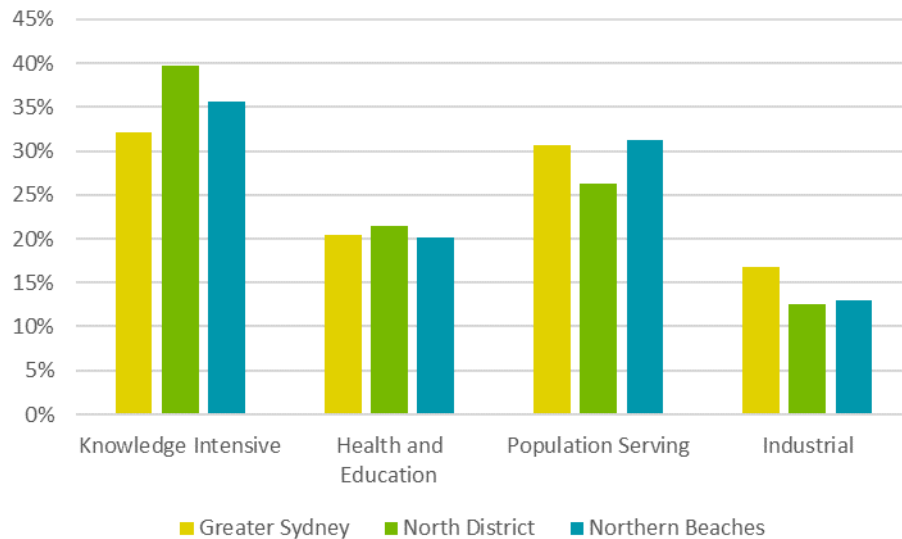
Source: ABS Census 2016 (TableBuilder Pro)

There have been similar trends across all compared areas with a drop of people employed within the *Industrial* sector and increasing proportions of workers in the *Health and Education* and *Knowledge Intensive* categories.

FIGURE 48: COMPARATIVE PROPORTIONAL CHANGE IN INDUSTRY OF EMPLOYMENT (PUR) STRUCTURE (2006-2016)

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

8.3 Occupation (PUR)

Where are we now?

The most common occupations amongst Northern Beaches residents are in the *Professionals,* and *Managers* categories. High ratios of these residents are located in the suburbs of *Manly-Fairlight, Balgowlah-Clontarf-Seaforth,* with higher rates elsewhere in the LGA as well (e.g. *Frenchs Forest* broader catchment, *Brookvale-Freshwater*)

Areas such as *Beacon Hill-Narraweena* and *Dee Why-North Curl Curl* have higher ratios of industrial workers (*Technicians and Trades Workers, Labourers* and *Machinery Operators and Drivers)* while suburbs with major retail outlets have larger numbers of *Sales Workers* (*Warriewood-Mona Vale* and *Freshwater-Brookvale).*

TABLE 68: BROADER CATCHMENTS OCCUPATION (PUR) TOTALS (2016)

Geography	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
Mona Vale	5,628	8,046	3,852	2,869	4,167	2,839	786	1,465
Terrey Hills	354	436	262	155	267	149	47	108
Frenchs Forest	3,513	5,357	1,752	1,553	2,624	1,719	453	815
Brookvale-Dee Why	8,018	12,504	6,437	5,066	6,751	4,533	1,752	3,144
Manly	6,557	10,747	2,404	2,588	3,677	2,558	522	1,093
Total	*24,080*	*37,085*	*14,707*	*12,241*	*17,482*	*11,801*	*3,557*	*6,621*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 69: BROADER CATCHMENTS OCCUPATION (PUR) TOTALS (2016)

Geography	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
Mona Vale	19%	27%	13%	10%	14%	10%	3%	5%
Terrey Hills	20%	25%	15%	9%	15%	8%	3%	6%
Frenchs Forest	20%	30%	10%	9%	15%	10%	3%	5%
Brookvale-Dee Why	17%	26%	13%	11%	14%	9%	4%	7%
Manly	22%	36%	8%	9%	12%	8%	2%	4%
Total	*19%*	*29%*	*12%*	*10%*	*14%*	*9%*	*3%*	*5%*

Source: ABS Census 2016 (TableBuilder Pro)

The largest increase has occurred in the *Professionals, Managers* and *Community and Personal Service Workers* occupations. All other occupations have either remained relatively stagnant or experienced a decline, in particular the *Clerical and Administrative Workers* group.

TABLE 70: LOCAL OCCUPATION (PUR) TOTALS AND GROWTH RATES (2006-2016)

Year	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
2016	24,080	37,085	14,707	12,241	17,482	11,801	3,557	6,621
2011	21,075	34,207	14,461	10,702	18,191	11,352	3,516	6,148
2006	19,403	30,720	14,235	9,470	18,137	11,391	3,629	6,589
Growth (Total)	*4,677*	*6,365*	*472*	*2,771*	*-655*	*410*	*-72*	*32*
CAGR (5-yr %)	*11.40%*	*9.87%*	*1.64%*	*13.69%*	*-1.82%*	*1.78%*	*-1.00%*	*0.24%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has a relatively similar occupation structure to the District and GS, but with a noticeably lesser proportion of *Professionals* compared to the District and higher levels of *Managers* compared to GS.
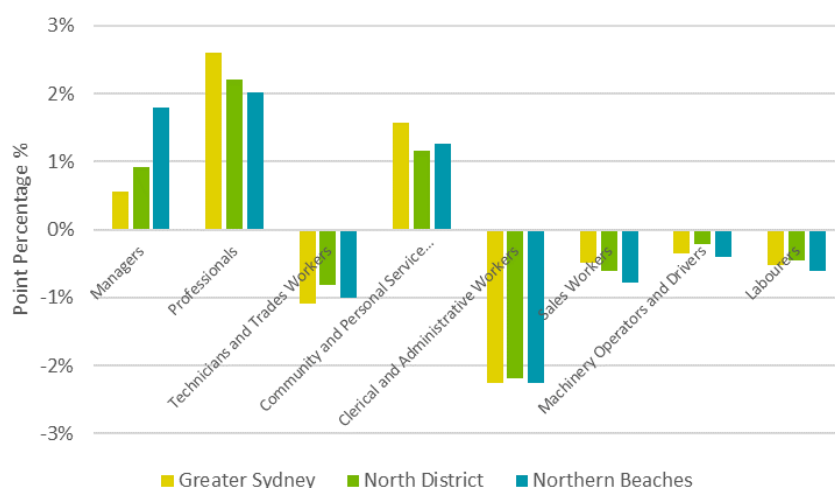
FIGURE 49: COMPARATIVE OCCUPATION (PUR) STRUCTURE (2016)
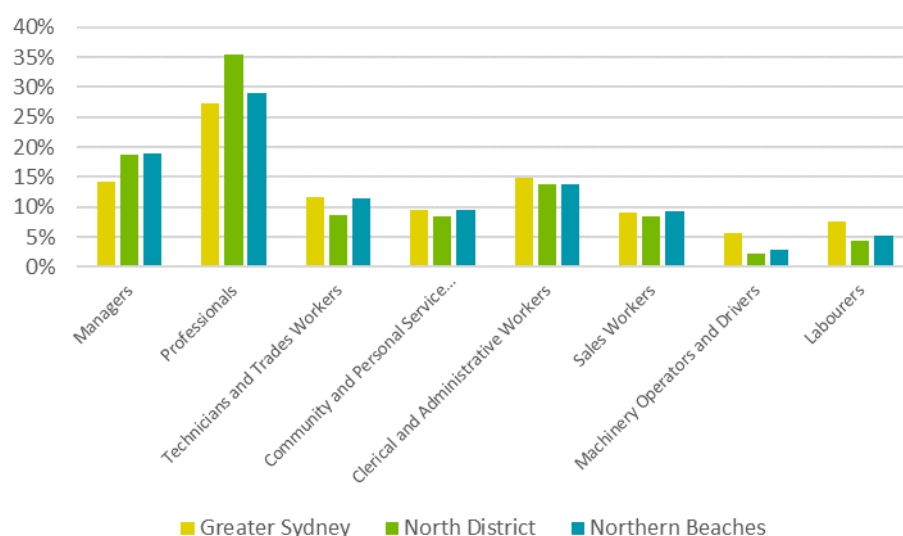
Source: ABS Census 2016 (TableBuilder Pro)

Major structural trends have also been similar to the District and GS, with slightly less pronounced growths in the *Professional* group but higher rates in the proportion of *Managers.*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

8.4 Place and Method of Travel to Work (PUR)

Where are we now?

Most of Northern Beaches residents use *Vehicles* to commute to work. The combined number of all other modes represents only about of 50% of the *Vehicles* total with *Public Transport* being the second most used mode.

The use of *Vehicles* is particularly high with residents of the *Mona Vale* broader catchment but also in the suburb of *Cromer*. *Public Transport* has high utilisation rates in *Manly-Fairlight*, as do *Active Transport* options. The broader catchments of *Manly* and *Brookvale-Dee Why* having generally higher proportions of *Public Transport* use.

TABLE 71:BROADER CATCHMENTS METHOD OF TRAVEL TO WORK (PUR) TOTALS (2016)

| Geography	Public transport	Vehicle	Active transport	Other Mode	Worked at home
Mona Vale	2,788	20,418	1,070	198	2,942
Terrey Hills	152	1,233	61	8	180
Frenchs Forest	2,822	11,682	442	87	1,277
Brookvale-Dee Why	8,899	30,764	2,140	242	2,589
Manly	8,870	14,639	1,970	168	2,269
Total	*23,530*	*78,736*	*5,693*	*701*	*9,257*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 72:BROADER CATCHMENTS METHOD OF TRAVEL TO WORK (PUR) PROPORTIONS (2016)

Geography	Public transport	Vehicle	Active transport	Other Mode	Worked at home
Mona Vale	10%	74%	4%	1%	11%
Terrey Hills	9%	75%	4%	0%	11%
Frenchs Forest	17%	72%	3%	1%	8%
Brookvale-Dee Why	20%	69%	5%	1%	6%
Manly	32%	52%	7%	1%	8%
Total	*20%*	*67%*	*5%*	*1%*	*8%*

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 51: BROADER CATCHMENTS METHOD OF TRAVEL TO WORK (PUR) – MAP (2016)
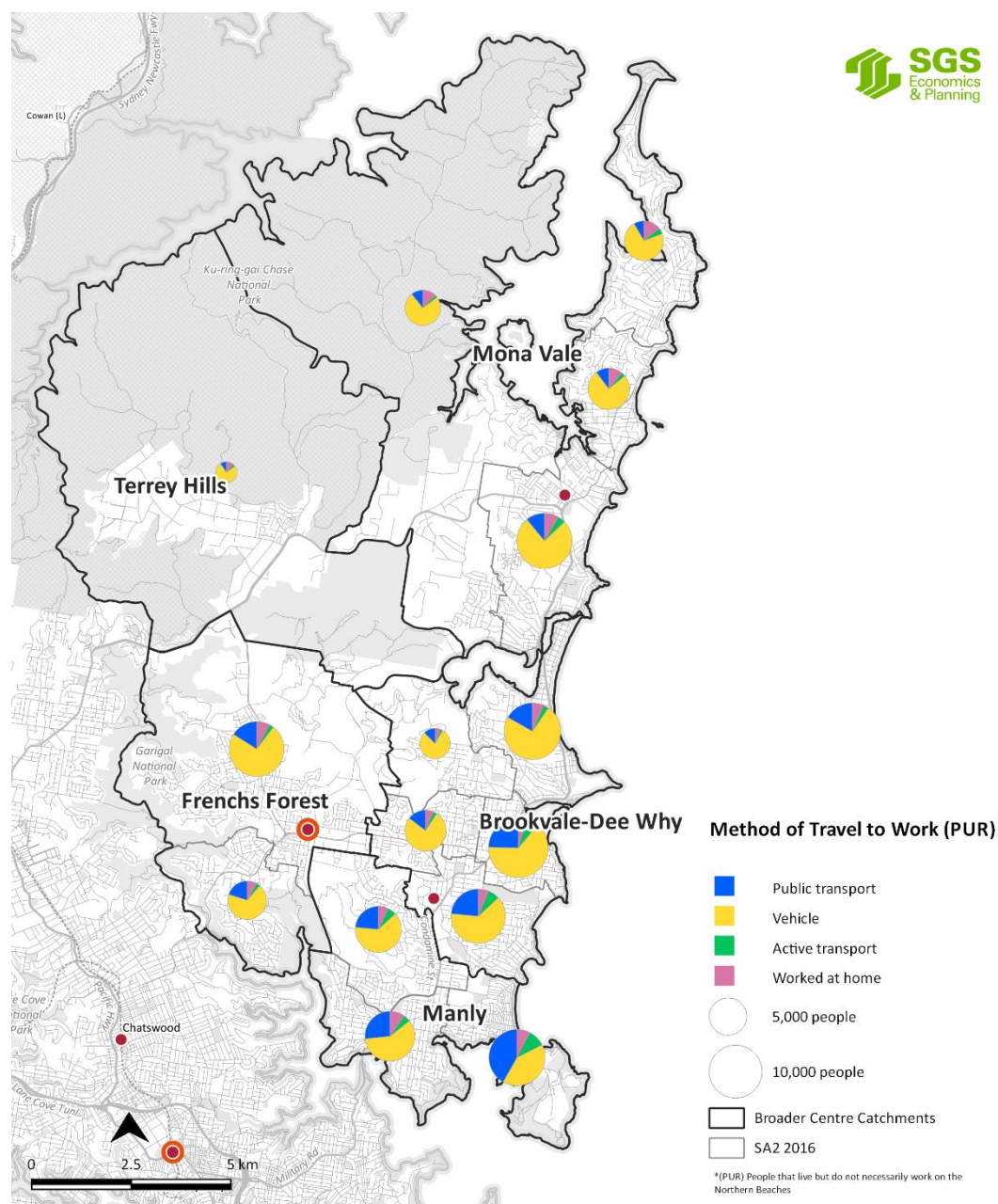
Source: ABS Census 2016 (TableBuilder Pro)

Historically, there has been an increase in the number of people commuting to work with *Public Transport* and *Vehicles* but also of those that *Worked from Home,* with the highest growth trends present in the use of *Public Transport.*

TABLE 73: LOCAL METHOD OF TRAVEL TO WORK (PUR) TOTALS AND GROWTH RATES (2006-2016)

Year	Public transport	Vehicle	Active transport	Other Mode	Worked at home
2016	23,530	78,736	5,693	701	9,257
2011	19,804	75,356	5,366	632	7,910
2006	16,879	72,158	5,027	500	6,965
Growth	*6,651*	*6,578*	*666*	*201*	*2,292*
CAGR (5-yr %)	*18.07%*	*4.46%*	*6.42%*	*18.41%*	*15.29%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

The most popular working destinations for residents of the Northern Beaches are the LGAs of *Sydney, North Sydney* and *Willoughby.* However, the largest number of people are employed locally - 54% self-containment rate.

The vast majority of workers use *Vehicles* to reach their employment destination, in particular LGAs West of Northern Beaches (*Ku-ring-gai, Ryde, Parramatta* and *Chatswood)* but also local workers. Higher rates of *Public Transport* utilisation are with commuters travelling to *Sydney* and to some degree *North Sydney.*

FIGURE 52: PLACE AND METHOD OF TRAVEL TO WORK (PUR) OF LOCAL WORKERS – MAP (2016)
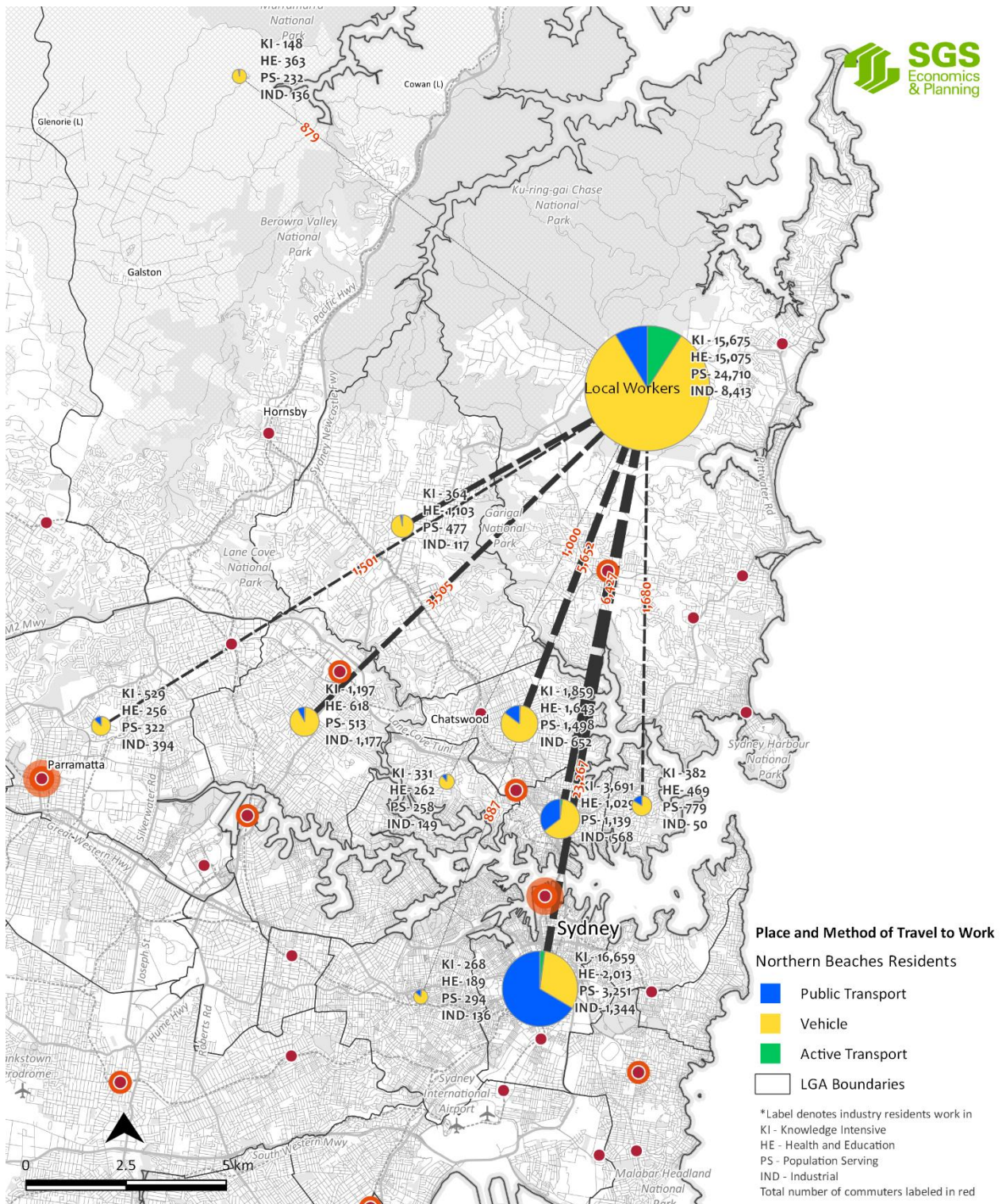
Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 53: TOP EMPLOYMENT LOCATIONS FOR LOCAL RESIDENTS (2016)

Geography (POW)	2016	%
Northern Beaches	67,575	54.16%
Sydney	24,153	19.36%
North Sydney	6,681	5.35%
Willoughby	5,905	4.73%
No Fixed Address	5,763	4.62%
Ryde	3,658	2.93%
Ku-ring-gai	2,126	1.70%
Mosman	1,733	1.39%
Parramatta	1,568	1.26%
Botany Bay	1,095	0.88%

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Although high *Vehicle* usage rates are existing in all three compared areas, Northern Beaches has a higher proportion, in particular compared to the District and noticeably lower rates of *Public Transport* utilisation.

FIGURE 54: COMPARATIVE METHOD OF TRAVEL TO WORK (PUR) STRUCTURE (2016)
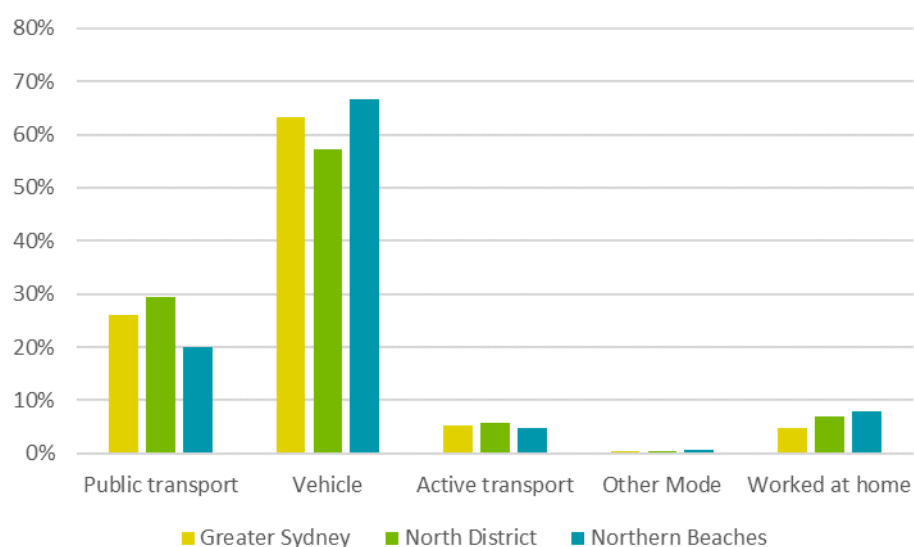
Source: ABS Census 2016 (TableBuilder Pro)

Trends are showing a positive shift towards higher rates of *Public Transport* use and a decrease in the proportion of people using *Vehicles,* with less pronounced trends in these categories on the Northern Beaches compared to the District and GS area.

FIGURE 55: COMPARATIVE PROPORTIONAL CHANGE IN METHOD OF TRAVEL TO WORK (PUR) STRUCTURE (2006-2016)
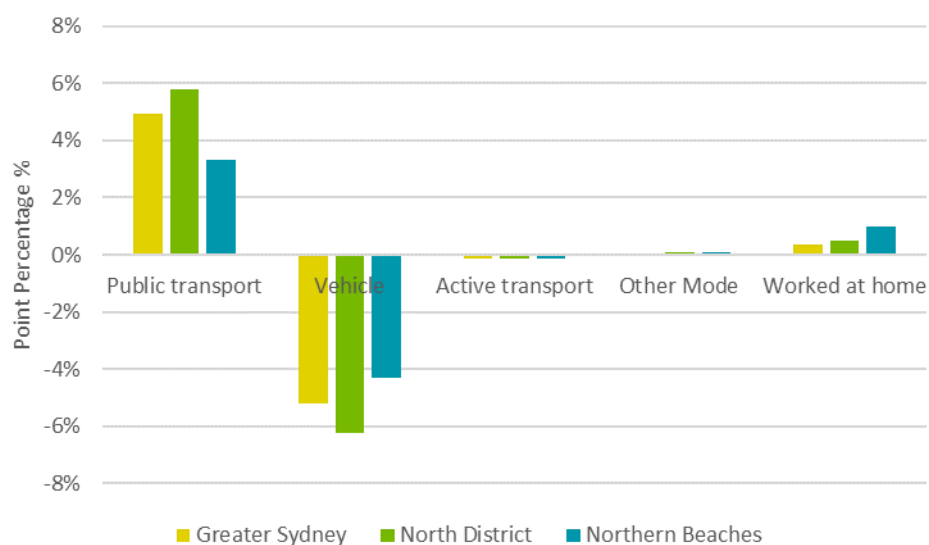
Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

9. JOBS AND SKILLS (WORKERS)

This chapter analyses a number of employment based measures and indicators related to local workers, pointing to historical and forecasted trends and insights.

Note: *Totals* in Broader Catchments tables are NOT the sum of the Broader Catchments but totals from LGA tables. As ABS has introduced a new imputation method in 2016, for assigning workplace destination (Destination Zones) to persons that provided partial or no information about their place of work, different imputations are applied to different geographies as well. LGA totals will not match sums of lower level geographies (e.g. SA2). Hence LGA totals have been used in both tables for consistency.

9.1   Employment (POW)

Where are we now?

An additional +5,993 jobs have been generated on the Northern Beaches between the two Census periods, with the *Manly* broader catchment having the highest growth rates. The major employment area is the *Brookvale-Dee Why* catchment.

TABLE 74:BROADER CATCHMENTS EMPLOYMENT TOTALS AND GROWTH RATES (2011-2016)

Geography	2011	2016	Growth	CAGR (5-yr %)
Mona Vale	16,901	18,693	1,792	10.60%
Terrey Hills	1,854	2,028	174	9.39%
Frenchs Forest	13,844	14,757	913	6.59%
Brookvale-Dee Why	25,020	27,492	2,472	9.88%
Manly	12,563	15,052	2,489	19.81%
Total	*76,715*	*82,708*	*5,993*	*7.81%*

Source: ABS Census 2011 and 2016 (TableBuilder Pro)

How are we different?

Growth rates on the Northern Beaches have been similar to general trends at the GS level and slightly higher compared to the North District averages. Most of growth has occurred in the past five years, which is expected due to the GFC taking place in the 2006-2011 period.

TABLE 75:COMPARATIVE EMPLOYMENT TOTALS AND GROWTH RATES (2006-2016)

Geography	2006	2011	2016	Growth	CAGR (5-yr %)
Greater Sydney	1,644,686	1,745,269	1,944,153	299,467	8.72%
North District	337,465	357,218	378,953	41,488	5.97%
Northern Beaches	72,802	76,715	82,708	9,906	6.59%

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Where are we going?

Northern Beaches is forecasted to accommodate an additional +4,75% jobs each five years, which represents a lower growth rate compared to historical trends but also the District/GS.

TABLE 76:COMPARATIVE FORECASTED EMPLOYMENT TOTALS AND GROWTH RATES (2021-2036)

Geography	2021	2026	2031	2036	Growth	CAGR (5-yr %)
Greater Sydney	2,712,085	2,929,335	3,154,622	3,389,594	677,508	7.72%
North District	512,368	536,319	563,975	595,151	82,782	5.12%
Northern Beaches	110,618	114,192	120,026	127,155	16,537	4.75%

Source: TfNSW – Travel Zone Projections 2016 (TZP16 v1.5)

9.2   Industry of Employment (POW)

Where are we now?

The major employment centres on the Northern Beaches are the suburbs of *Freshwater-Brookvale* (Warringah Mall and industrial zones), *Frenchs Forest-Belrose* (business park) and *Warriewood-Mona Vale* (mixed-use and industrial zones).

Apart from being the major employment hubs, *Frenchs Forest-Belrose* and *Warriewood-Mona Vale* also have the most diverse mix of industries while the suburbs with higher proportions of *Knowledge Intensive* jobs are *Dee Why-North Curl Curl* and *Manly-Fairlight.* The major *Population Serving* centre is *Freshwater-Brookvale* with a number of smaller local centres also being inclined towards *Population Serving* industries.

TABLE 77:BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (POW) TOTALS (2016)

| Geography	Knowledge Intensive	Health and Education	Population Serving	Industrial
Mona Vale	4,317	4,019	6,874	2,611
Terrey Hills	243	494	714	489
Frenchs Forest	3,209	3,172	4,508	3,172
Brookvale-Dee Why	6,147	5,289	10,446	4,527
Manly	3,889	4,646	5,276	705
Total	*18,618*	*18,526*	*30,021*	*12,051*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 78:BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (POW) PROPORTIONS (2016)

Geography	Knowledge Intensive	Health and Education	Population Serving	Industrial
Mona Vale	24%	23%	39%	15%
Terrey Hills	13%	25%	37%	25%
Frenchs Forest	23%	23%	32%	23%
Brookvale-Dee Why	23%	20%	40%	17%
Manly	27%	32%	36%	5%
Total	*24%*	*23%*	*38%*	*15%*

Source: ABS Census 2016 (TableBuilder Pro)

FIGURE 56: BROADER CATCHMENTS INDUSTRY OF EMPLOYMENT (POW) – MAP (2016)
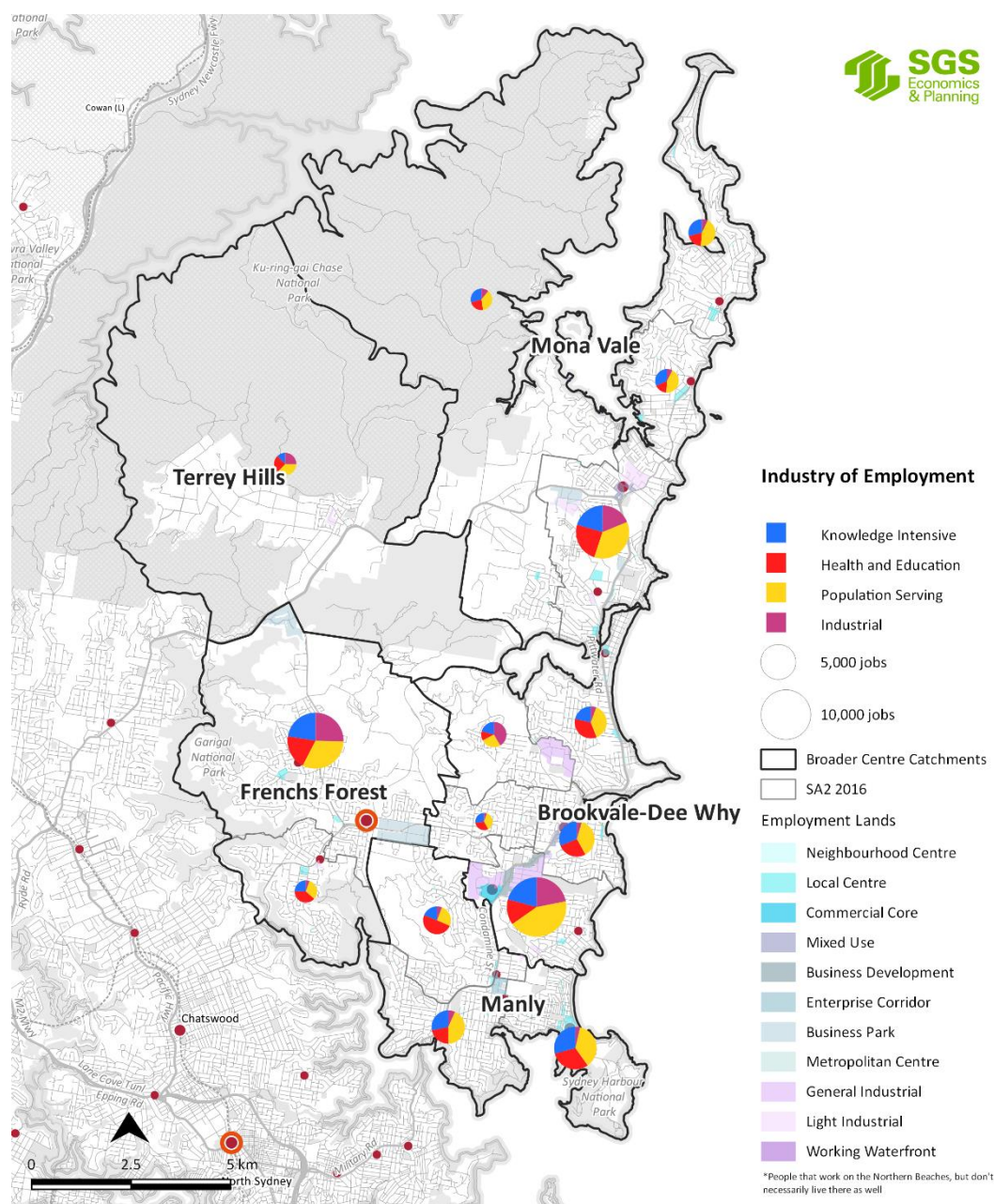
Source: ABS Census 2016 (TableBuilder Pro)

Overall, Northern Beaches is a *Population Serving* inclined market, with strong growth trends in *Health and Education* industries as well. The *Industrial* category is experiencing a decline in job numbers, as it is in a number of other LGAs in Sydney.

TABLE 79: LOCAL INDUSTRY OF EMPLOYMENT (POW) TOTALS AND GROWTH RATES (2006-2016)

Year	Knowledge Intensive	Health and Education	Population Serving	Industrial
2016	43,939	24,962	38,569	15,999
2011	41,476	21,694	35,333	20,280
2006	37,904	19,220	34,466	20,779
Growth	*6,035*	*5,742*	*4,103*	*-4,780*
CAGR (5-yr %)	*7.67%*	*13.96%*	*5.78%*	*-12.25%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Compared to the District and GS, Northern Beaches has a noticeable larger proportion of *Population Serving* jobs and smaller ratio of *Knowledge Intensive* industries, with the other two categories at similar levels.

FIGURE 57: COMPARATIVE INDUSTRY OF EMPLOYMENT (POW) STRUCTURE (2016)
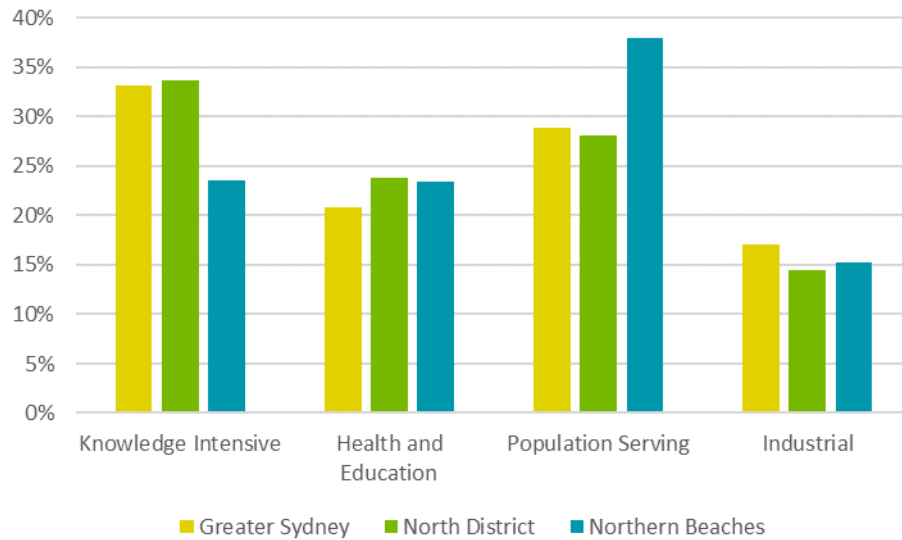
Source: ABS Census 2016 (TableBuilder Pro)

Northern Beaches has been experiencing a stronger increase in the number of *Health and Education* jobs than the District and GS, with a declining *Industrial* portion of jobs, at similar levels to GS.

FIGURE 58: COMPARATIVE PROPORTIONAL CHANGE IN INDUSTRY OF EMPLOYMENT (POW) STRUCTURE (2006-2016)
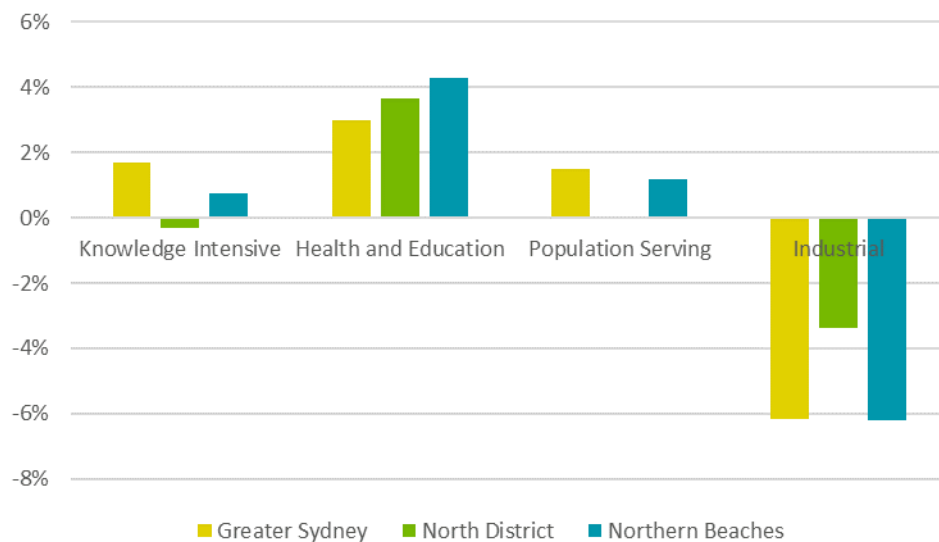
Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

9.3   Occupation (POW)

Where are we now?

The most common occupations amongst workers on the Northern Beaches are *Professionals* and *Managers.* Large numbers of these occupations are located in the suburbs of *Frenchs Forest-Belrose, Warriewood-Mona Vale, Freshwater-Brookvale* and *Manly-Fairlight.* The main hotpot for *Sales Workers* is *Freshwater-Brookvale,* but also for *Clerical and Administrative Workers* and *Technicians and Trades Workers* creating a dynamic and diverse emp. area.

TABLE 80: BROADER CATCHMENTS OCCUPATION (POW) TOTALS (2016)

Geography	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
Mona Vale	3,042	4,901	3,158	2,322	2,810	2,304	762	1,454
Terrey Hills	327	437	454	301	243	128	225	242
Frenchs Forest	2,706	4,614	1,667	1,591	2,520	1,526	655	984
Brookvale-Dee Why	4,361	6,126	4,601	3,379	4,183	3,813	1,703	2,284
Manly	2,354	4,858	1,902	2,711	1,873	1,809	293	1,152
Total	*12,225*	*20,013*	*10,817*	*9,568*	*11,223*	*9,093*	*3,404*	*5,597*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 81: BROADER CATCHMENTS OCCUPATION (POW) PROPORTIONS (2016)

Geography	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
Mona Vale	15%	24%	15%	11%	14%	11%	4%	7%
Terrey Hills	14%	19%	19%	13%	10%	5%	10%	10%
Frenchs Forest	17%	28%	10%	10%	15%	9%	4%	6%
Brookvale-Dee Why	14%	20%	15%	11%	14%	13%	6%	8%
Manly	14%	29%	11%	16%	11%	11%	2%	7%
Total	*15%*	*24%*	*13%*	*12%*	*14%*	*11%*	*4%*	*7%*

Source: ABS Census 2016 (TableBuilder Pro)

Historically, there have been large growth trends in the *Professionals, Community and Personal Service Workers,* but also growth in the *Mangers* and *Technicians and Trades Workers* related occupations. All other occupations have either remained stagnant or experienced a decline, such as the *Clerical and Administrative Workers* group.

TABLE 82: LOCAL OCCUPATION (POW) TOTALS AND GROWTH RATES (2006-2016)

Year	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators and Drivers	Labourers
2016	12,225	20,013	10,817	9,568	11,223	9,093	3,404	5,597
2011	11,212	18,090	10,113	7,867	11,733	8,810	3,239	4,898
2006	10,976	16,052	9,762	6,576	11,524	8,810	3,145	5,221
Growth (Total)	*1,249*	*3,961*	*1,055*	*2,992*	*-301*	*283*	*259*	*376*
CAGR (5-yr %)	*5.54%*	*11.66%*	*5.27%*	*20.62%*	*-1.31%*	*1.59%*	*4.04%*	*3.54%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

How are we different?

Northern Beaches has a relatively similar occupation structure to the District and GS, but noticeably lesser proportion of *Professionals* and higher levels of *Technicians and Trades Workers, Community and Personal Service Workers* and *Sales Workers.*

FIGURE 59: COMPARATIVE OCCUPATION (POW) STRUCTURE (2016)
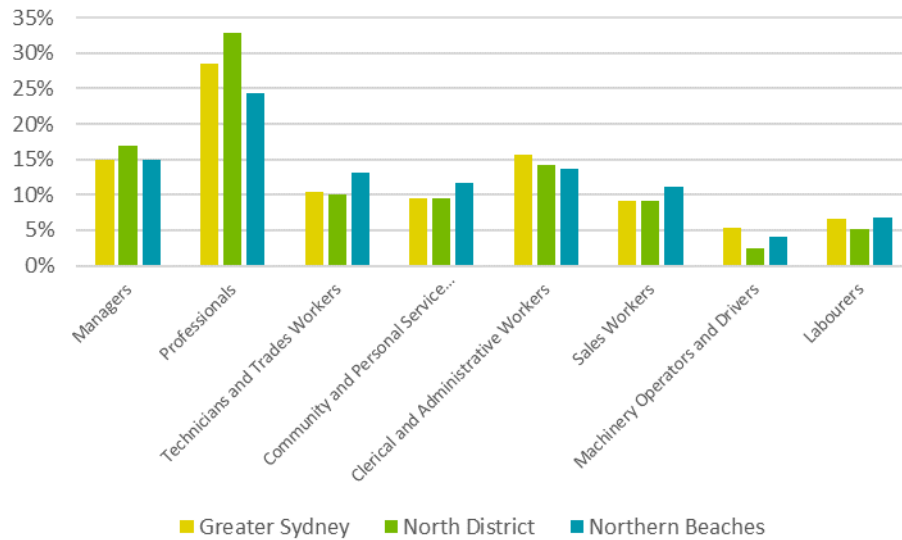
Source: ABS Census 2016 (TableBuilder Pro)

Proportional growth trends have been similar to the District and GS as well, with slightly less pronounced growth in the *Professional* group and higher rates in the *Community and Personal Service Workers.*

FIGURE 60: COMPARATIVE PROPORTIONAL CHANGE IN OCCUPATION (POW) STRUCTURE (2006-2016)

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

9.4   Method of Travel to Work (POW)

Where are we now?

As most of Northern Beaches residents work locally, the findings of this chapter are somewhat similar to Place and Method of Travel to Work (PUR).

Most of the commuters (both within and outside of Northern Beaches) use *Vehicles* to travel to work in particularly to the *Frenchs Forest* broader catchment. Somewhat larger number of commuters use *Public Transport* and *Active Transport* to commute to the *Manly* broader catchment.

TABLE 83:BROADER CATCHMENTS METHOD OF TRAVEL TO WORK (POW) TOTALS (2016)

Geography	Public transport	Vehicle	Active transport	Other Mode	Worked at home
Mona Vale	1,279	14,019	988	158	2,634
Terrey Hills	100	1,853	51	3	157
Frenchs Forest	1,215	12,246	384	57	1,237
Brookvale-Dee Why	2,748	21,019	1,807	161	2,256
Manly	2,038	9,582	1,699	102	1,967
Total	*6,850*	*55,104*	*4,673*	*458*	*7,591*

Source: ABS Census 2016 (TableBuilder Pro)

TABLE 84:BROADER CATCHMENTS METHOD OF TRAVEL TO WORK (POW) PROPORTIONS (2016)

Geography	Public transport	Vehicle	Active transport	Other Mode	Worked at home
Mona Vale	7%	73%	5%	1%	14%
Terrey Hills	5%	86%	2%	0%	7%
Frenchs Forest	8%	81%	3%	0%	8%
Brookvale-Dee Why	10%	75%	6%	1%	8%
Manly	13%	62%	11%	1%	13%
Total	*9%*	*74%*	*6%*	*1%*	*10%*

Source: ABS Census 2016 (TableBuilder Pro)

Historically, there has been an increase in the number of people commuting to (or within) the Northern Beaches with *Vehicles* and a small growth trend in the number of people using *Public Transport.*

TABLE 85: LOCAL METHOD OF TRAVEL TO WORK (POW) TOTALS AND GROWTH RATES (2006-2016)

Year	Public transport	Vehicle	Active transport	Other Mode	Worked at home
2016	6,850	55,104	4,673	458	7,591
2011	5,591	51,521	4,361	338	7,037
2006	4,728	48,384	4,304	282	6,313
Growth	*2,122*	*6,720*	*369*	*176*	*1,278*
CAGR (5-yr %)	*20.37%*	*6.72%*	*4.20%*	*27.44%*	*9.66%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

As mentioned previously, most of the residents work locally (81.6%), creating a very self-sufficient[22] economy. Other LGAs with significant number of workers commuting to the Northern Beaches, although similar in number are *Ku-ring-gai, Hornsby* and *North Sydney.*

FIGURE 61: ORIGIN OF WORKERS EMPLOYED ON THE NORTHERN BEACHES (2016)

Geography (POW)	2016	%
Northern Beaches	67,575	81.60%
Ku-ring-gai	2,478	2.99%
Hornsby	1,853	2.24%
North Sydney	1,358	1.64%
Central Coast	1,272	1.54%
Willoughby	1,234	1.49%
Sydney	1,058	1.28%
Ryde	1,057	1.28%
Parramatta	960	1.16%
Inner West	815	0.98%

Source: ABS Census 2016 (TableBuilder Pro)

How are we different?

Compared to both the District and GS, the number of commuters using *Public Transport* to commute to the Northern Beaches is significantly lower, with higher ratios of *Vehicle* use.

FIGURE 62: COMPARATIVE METHOD OF TRAVEL TO WORK (POW) STRUCTURE (2016)
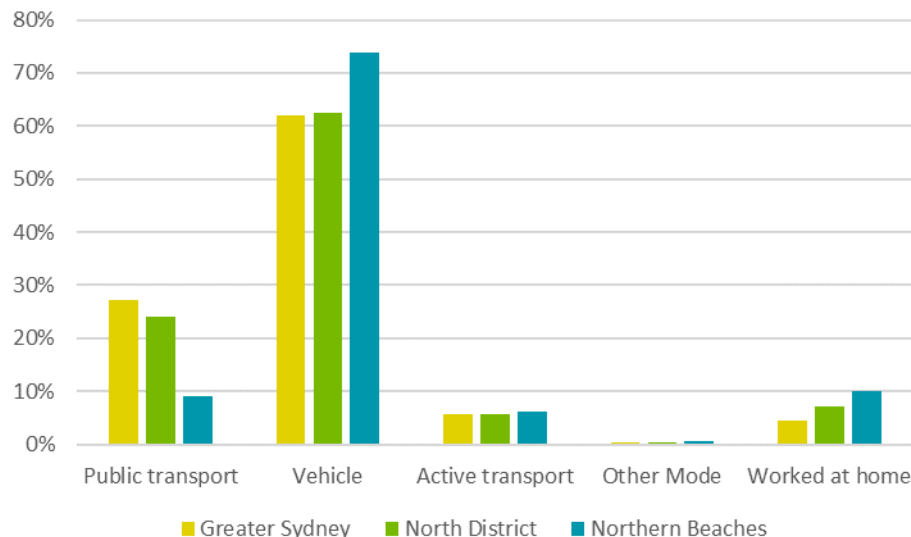
Source: ABS Census 2016 (TableBuilder Pro)

Similarly, historical trends are showing a lesser increase in the proportion of commuters using *Public Transport* and smaller drops in the use of *Vehicles* to both the District and GS.

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[22] Self-sufficiency looks at what proportion of local jobs are filled by local residents

FIGURE 63: COMPARATIVE PROPORTIONAL CHANGE IN METHOD OF TRAVEL TO WORK (POW) STRUCTURE (2006-2016)
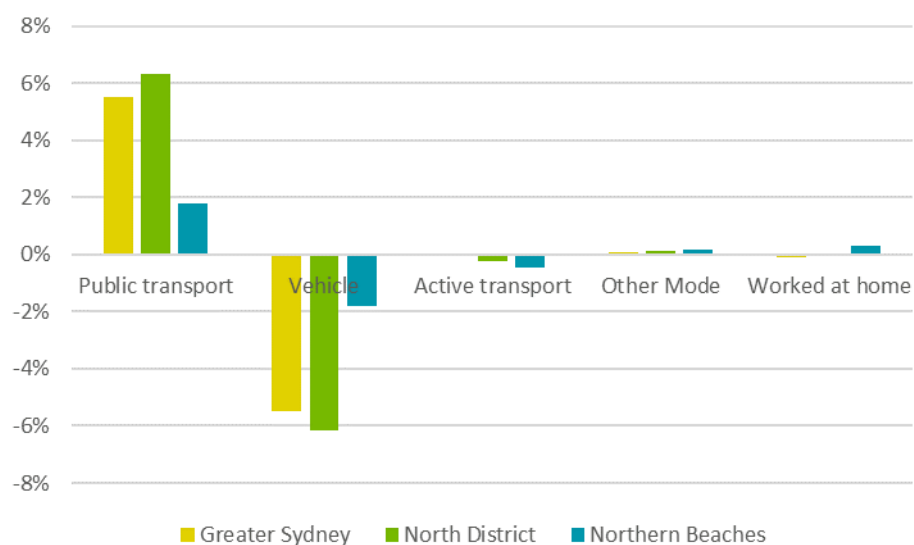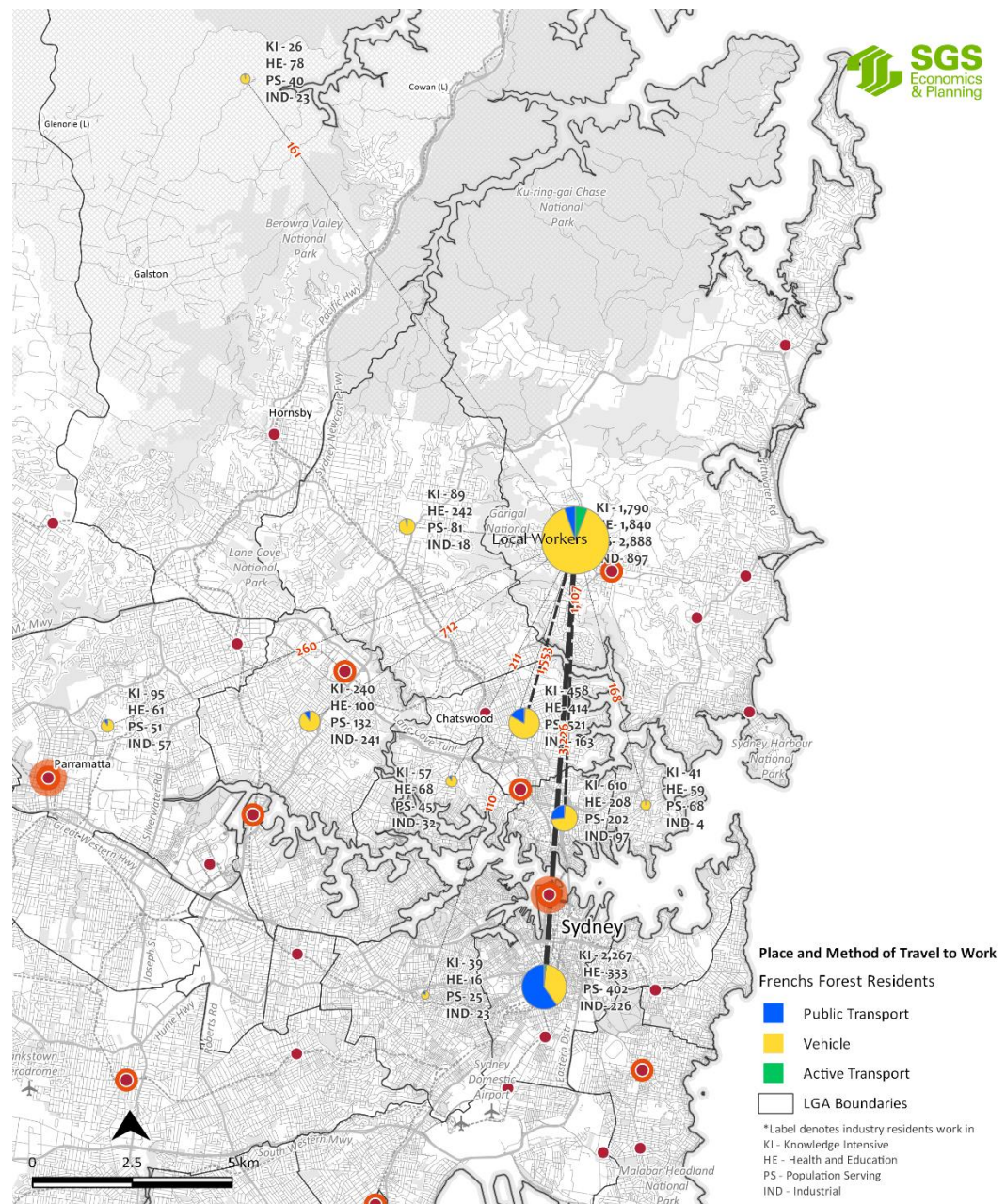

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

APPENDIX 1 – ADDITIONAL PLACE AND METHOD OF TRAVEL TO WORK (PUR) – MAPS (2016)
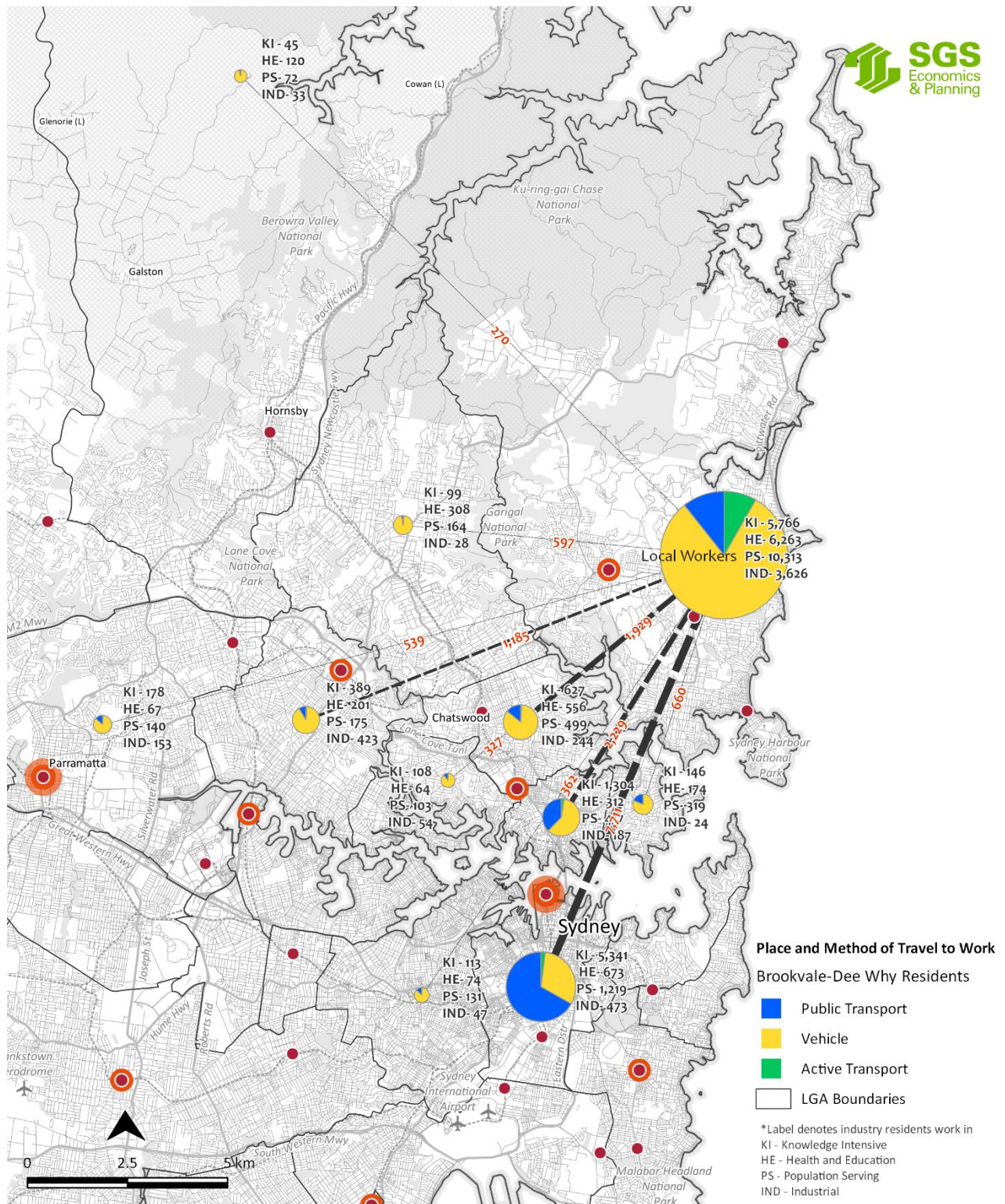
These maps denote working destinations for residents of the four major broader catchment centres on the Northern Beaches. Not to be confused with Place of Work (POW) maps, denoting origin of workers in section 5. Places and Connectivity.

FIGURE 64: PLACE AND METHOD OF TRAVEL TO WORK (PUR) OF FRENCHS FOREST RESIDENTS – MAP

Source: ABS Census 2016 (TableBuilder Pro)

Place and Method of Travel to Work

Brookvale-Dee Why Residents

- Public Transport
- Vehicle
- Active Transport
- LGA Boundaries

*Label denotes industry residents work in
KI - Knowledge Intensive
HE - Health and Education
PS - Population Serving
IND - Industrial

Source: ABS Census 2016 (TableBuilder Pro)

Source: ABS Census 2016 (TableBuilder Pro)

KI - 44
HE - 111
PS - 70
IND - 40

Cowan (L)

267

Glenorie (L)

Ku-ring-gai Chase National Park

Berowra Valley National Park

Galston

Pacific Hwy

Local Workers

KI - 4,480
HE - 3,966
PS - 6,772
IND - 2,407

656

Hornsby

352

KI - 109
HE - 354
PS - 143
IND - 49

Garigal National Park

185

941

982

225

Lane Cove National Park

854

135141

M2 Mwy

KI - 118
HE - 57
PS - 74
IND - 104

KI - 293
HE - 178
PS - 107
IND - 277

Chatswood

KI - 333
HE - 271
PS - 216
IND - 118

Sydney Harbour National Park

Parramatta

Silverwater Rd

Lane Cove Tunl

KI - 54
HE - 47
PS - 47
IND - 32

145

KI - 564
HE - 158
PS - 166
IND - 95

KI - 51
HE - 52
PS - 118
IND - 13

Great Western Hwy

Joseph St

Hume Hwy

Roberts Rd

KI - 49
HE - 32
PS - 46
IND - 17

Sydney

KI - 2,201
HE - 301
PS - 437
IND - 208

Eastern Distr

Place and Method of Travel to Work

Mova Vale Residents

- 🟦 Public Transport
- 🟨 Vehicle
- 🟩 Active Transport
- ⬜ LGA Boundaries

*Label denotes industry residents work in
KI - Knowledge Intensive
HE - Health and Education
PS - Population Serving
IND - Industrial

ankstown erodrome

South Western Mwy

Sydney International Airport

Malabar Headland National Park

N

0   2.5   5 km

Source: ABS Census 2016 (TableBuilder Pro)

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APPENDIX 2 – BROAD INDUSTRY CATEGORIES (BIC) DEFINITION

In conjunction with the Greater Sydney Commission (GSC), SGS Economics and Planning has categorised ANZSIC Divisions into four broad Industry Groups (also known as Broad Industry Categories – BIC). The following table illustrates the classification.

TABLE 86: INDUSTRY GROUPS

ANZSIC 2006 Division Code	ANZSIC 2006 Division Title	Group
J	Information Media and Telecommunications	Knowledge Intensive
K	Financial and Insurance Services	Knowledge Intensive
L	Rental, Hiring and Real Estate Services	Knowledge Intensive
M	Professional, Scientific and Technical Services	Knowledge Intensive
N	Administrative and Support Services	Knowledge Intensive
O	Public Administration and Safety	Knowledge Intensive
P	Education and Training	Health and Education
Q	Health Care and Social Assistance	Health and Education
E	Construction	Population Serving
G	Retail Trade	Population Serving
H	Accommodation and Food Services	Population Serving
R	Arts and Recreation Services	Population Serving
S	Other Services	Population Serving
A	Agriculture, Forestry and Fishing	Industrial
B	Mining	Industrial
C	Manufacturing	Industrial
D	Electricity, Gas, Water and Waste Services	Industrial
F	Wholesale Trade	Industrial
I	Transport, Postal and Warehousing	Industrial

Source: ABS ANZSIC 2006 Support Tool, SGS Economics and Planning and GSC 2016

APPENDIX 3 – UNDERSTANDING DATA AND MEASURES

This report has used a variety of measures in order to better understand trends present in the data from a number of perspectives. Observing indicators from only one perspective can often be misleading. Each perspective (measure) tells a different story and gives a different outlook. This appendix is specifically devised to guide and assist you when analysing the data in this report and help you better understand the original intention of each measure.

Totals - Absolute Values (123)

Totals are the most common used measure for observing data. They are simple, easy to understand and point to straightforward facts. People love using them as they resonate strongly, especially when the numbers are high. For instance, based on the table below, we know we have a large number of people using *Vehicles* (88,789) to travel to work, hence we might end up with a lot of cars on the streets.

METHOD OF TRAVEL TO WORK (PUR) TOTALS AND GROWTH RATES (2006-2016)

Year	Public transport	Vehicle	Active transport	Other Mode	Worked at home or Did not go to work
2016	30,492	88,789	3,193	808	13,183
2011	24,432	81,467	3,043	628	12,240
2006	21,075	75,742	3,292	535	12,155
Growth (Total)	*9,417*	*13,047*	*-99*	*273*	*1,028*
Growth (CAGR %)	*20.28%*	*8.27%*	*-1.52%*	*22.89%*	*4.14%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

<u>Downside</u>: When we have a lot of (similar) values, it might become hard to notice what to pay attention to. Also, understanding how one number (category) compares to other numbers (categories) or sum totals (of all categories) might become hard. Expressing data as a ratio or proportion (%) usually helps us with this.

Proportions - Percentage of SUM Total (%)

Proportions, ratios of percentages (name them as you like) usually kick-in handy when trying to understand how something compares to other (sub) categories or SUM totals. This measure is also particularly useful when trying to set up targets.

For instance, we can see that the value of *Vehicles* is quite different when comparing the local level of *Vehicle* usage (30,492) - table above; and the Metropolitan scale (x number of people use *Vehicles*). If someone asked us to put that in context and measure the RATE of *Vehicle* use, we couldn't really achieve it without using a relative measure. However, if expressed as a percentage of the sum total, we would know that the use of *Vehicles* is actually higher at the local level Metro level - see graph below.

Or, let's say our goal is to at least have 30% of people using Public Transport in the future. It makes much more "sense" to express that using proportions (%) than total numbers – e.g. our goal is to have 45,448 people using public transport. Also, the total might change, so 30% isn't 45,448 but a different value.

METHOD OF TRAVEL TO WORK (PUR) STRUCTURE (2016)
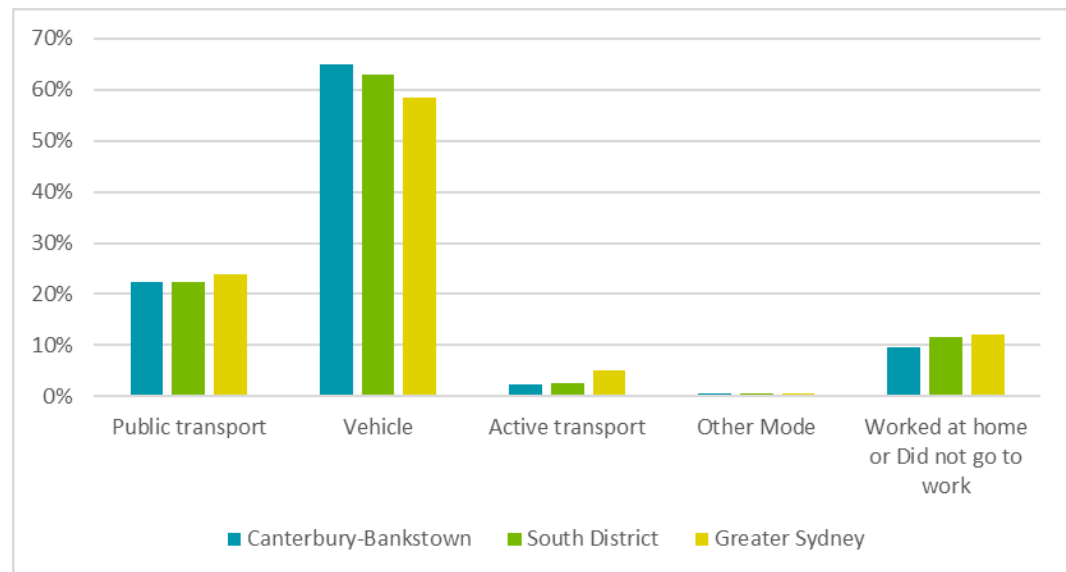
Source: ABS Census 2016 (TableBuilder Pro)

<u>Downside:</u> By using percentages or ratios, we can often oversight the overall importance of something in real life terms. Although 2.34% (ratio of people using *Active Transport*) might seem low and negligible, planning for 3,193 cyclists is still quite important. The larger the grand total is, the bigger the chance for such an oversight is to occur.

Growth Totals - Absolute Values (+- 123)

Again, similar to totals, growth totals are good for understanding the overall impact of some sort of change. From 2006 to 2016, the number of people using *Vehicles* has increased by +13,047 meaning we have a large number of additional vehicles on the streets that we need to plan for. Also, we have an additional +9,417 people using *Public Transport* probably requiring additional services.

<u>Downside:</u> However, growth totals can often "hide" important structural changes that occur over a larger period of time. If we disregarded *Active Transport,* we can see that all modes of transport have experienced a growth between 2006 and 2016. It is easy to jump to a conclusion and say the fastest growing mode of transport is *Vehicles.* However, if we compared the PROPORTION of people using *Vehicles* in 2006 to 2016, we will that the opposite is actually true - see next heading.

Proportional Changes - Point Percentages (%)

Proportional changes are good in anticipating broader structural changes. This means, that if the current growth trends continued, even though the growth total of *Public Transport* (+9,147) is lower than that of *Vehicles* (+13,047), the number of people using *Public Transport* would eventually "catch up" in the overall proportion. If we translated the first table to proportions instead of totals, it would look something like this:

METHOD OF TRAVEL TO WORK (PUR) TOTALS AND GROWTH RATES (2006-2016)

Year	Public transport	Vehicle	Active transport	Other Mode	Worked at home or Did not go to work
2016	22.3%	65.1%	2.3%	0.6%	9.7%
2011	20.1%	66.9%	2.5%	0.5%	10.0%
2006	18.7%	67.1%	2.9%	0.5%	10.8%
Growth (Total)	*9,417*	*13,047*	*-99*	*273*	*1,028*
Growth (CAGR %)	***20.28%***	*8.27%*	*-1.52%*	*22.89%*	*4.14%*

Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

This is simply because the initial "base value" was a lot smaller for *Public Transport* compared to *Vehicles.*

CHANGE IN METHOD OF TRAVEL TO WORK (PUR) STRUCTURE (2006-2016)
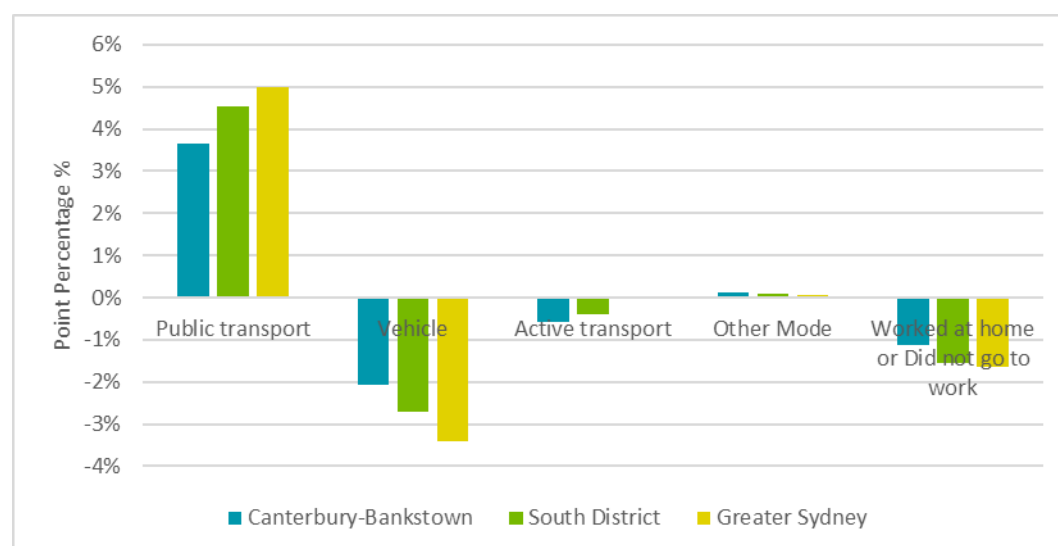
Source: ABS Census 2006, 2011 and 2016 (TableBuilder Pro)

Growth Percentages - CAGR (%)

Relative growth is a measure good for understanding how much a value has changed over time and relative to itself, as well as comparing rates and trends of different geographic scales. In relative terms, the +9,417 increase of people using *Public Transport* represents a +20.28% increase, while the +13,047 represent a +8.27% compared to a previous value of those indicators.

<u>Downside:</u> However, what relative growth numbers don't "catch" is the base value itself. If looked in more detail the +22.89% of the use in *Active Transport* is higher than both previously mentioned modes, but it only represents an additional +273 commuters.

Note: There is a lot of other things to keep in mind when analysing data and using descriptive statistics to measure performance. Only a small part of it has been mentioned in this appendix. We recommend to observe indicators from a variety of perspectives and angles prior to making any conclusions.

APPENDIX 4 – GLOSSARY

This appendix contains a glossary of commonly used acronyms through the report.

ABS – Australian Bureau of Statistics

ANZSIC – Australian and New Zealand Standard Industrial Classification

ASCO – Australian Standard Classification of Occupations

BIC – Broad Industry Category

CAGR (%) – Compounded Annual Growth Rate

District – North District

DPE – Department of Planning and Environment

GFC – Global Financial Crisis

GSRP – Greater Sydney Region Plan

GS – Greater Sydney

GSC – Greater Sydney Commission

LEP – Local Environmental Plans

LGA – Local Government Area

LSPS – Local Strategic Planning Statement

POW – Place of Work

PP (%) – Point Percentage

PUR – Place of Work

SA2 - Statistical Areas Level 2

TPA – Transport Performance and Analytics

VET – Vocational Education and Training

SGS
Economics & Planning

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