



# **Draft Brookvale Structure Plan**

## **Analysis Report**

**November 2022**



northern  
beaches  
council



**Acknowledgement of Country**

We acknowledge the Traditional Custodians and their Country on which we gather today. By these words we show our respect to all Aboriginal people. We acknowledge Elders past, present and emerging and the spirits and ancestors of the Clans that lived in this area.





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B-Line	High frequency, limited stops bus service between Mona Vale and Sydney CBD
Brookvale investigation Area	The area included in purple outline in Figure 1
Council	Northern Beaches Council
DCP	Development control plan
District Plan	The North District Plan
Environmental planning instrument	State environmental planning policy or local environmental plans
LEP	Local environmental plan
LGA	Local government area
LSPS	Local strategic planning statement
Planning instrument	A strategic plan, environmental planning instrument or development control plan

Region Plan	The Greater Sydney Region Plan – A Metropolis of Three Cities
SEPP	State environmental planning policy
Standard Instrument	Standard Instrument—Principal Local Environmental Plan
Strategic plan	A regional strategic plan, district strategic plan or local strategic planning statement
Structure plan	A plan that outlines the direction of future land use and growth
The Department	NSW Department of Planning and Environment
GCC	Greater Cities Commission (former Greater Sydney Commission)
NSW	New South Wales



## Introduction

The revised draft Brookvale Structure Plan (the revised Structure Plan) provides the strategic land use planning framework for Brookvale over the next 15 years. The Structure Plan sets the vision for Brookvale as a Strategic Centre and guides the future land use composition of the area which respond to its economic, transport, social and environment context.

Forming part of the Brookvale-Dee Why Strategic Centre, Brookvale is home to the largest concentration of employment and businesses on the Northern Beaches, accommodating up to one-third of the LGA's jobs (13640 in 2016). Brookvale is the most connected and accessible centre on

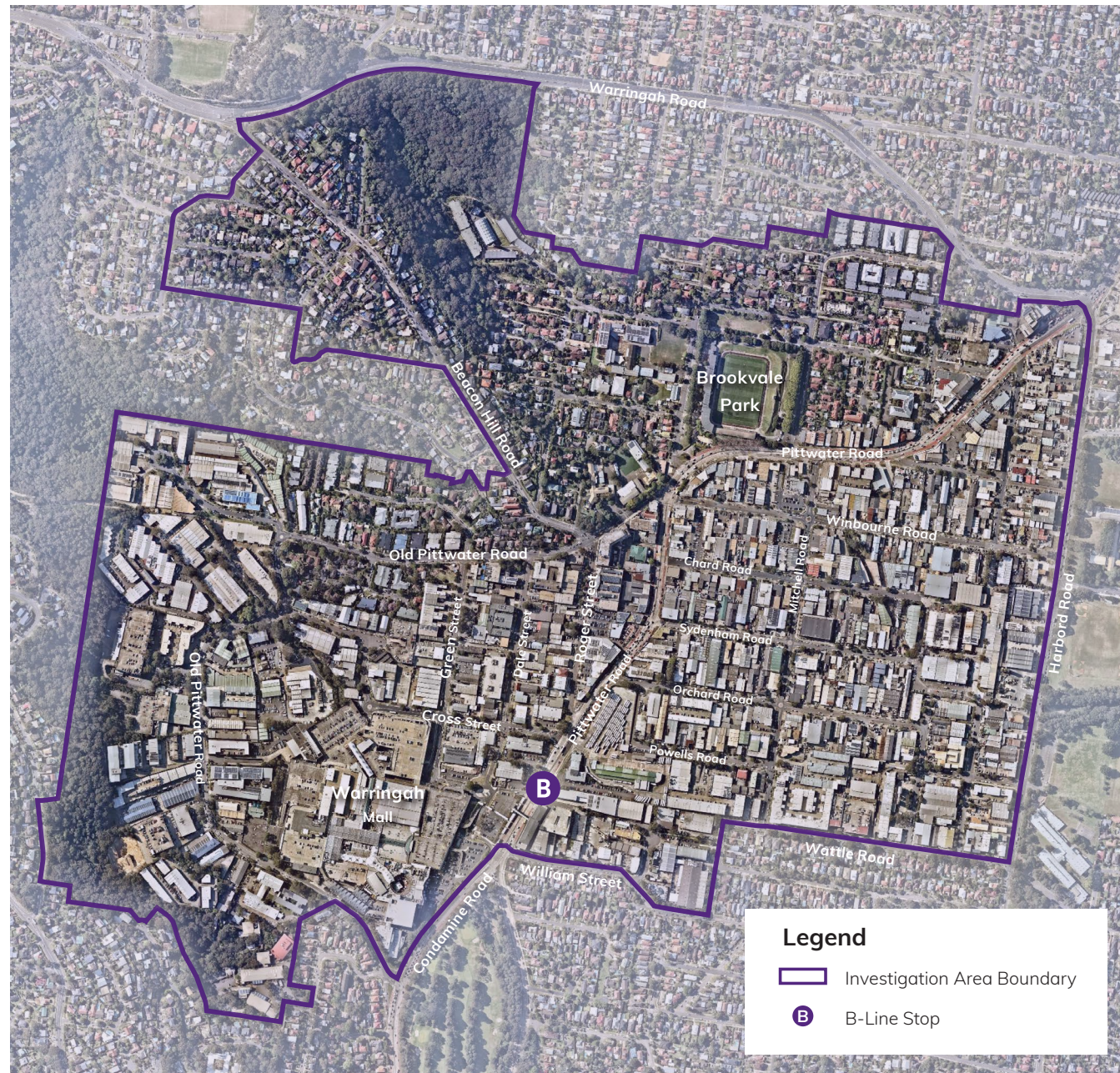
the Northern Beaches, providing a range of regionally significant functions with Warringah Mall, Brookvale TAFE, Brookvale Oval and the largest concentration of industrial land in the North District. A diverse range of businesses support the local construction industry, provide automotive services, specialised local manufacturing, wholesale trade and a growing cohort of professional and creative businesses. While the B-line has improved travel times and will be increasingly utilised, the constrained road network must be addressed in line with growth to realise Brookvale's potential as an employment and innovation centre.

While Brookvale provides a range of key functions for the Northern Beaches, it has lacked a clear plan for how it will transition over the next 15 years. In 2015, Council commenced a process to plan for Brookvale's Future with the Draft Brookvale Structure Plan publicly exhibited in 2017. A number of issues were raised with 113 submissions highlighting concerns about traffic and transport, housing density, affordability and feasibility. Subsequently, the Greater Cities Commission (GCC) finalised its Greater Sydney Region Plan in 2018 and North District plan which place greater emphasis on the protection of industrial lands and urban services and highlight the importance of place-based planning.

Northern Beaches Council subsequently commissioned a review of the exhibited draft Brookvale Structure Plan to ensure the plan aligned with strategic planning policy and to address key issues raised during the 2017 exhibition process. Council has undertaken further studies including a Transport Management and Accessibility Plan (TMAP) providing a comprehensive review of transport constraints including upgrades and improvements and an Employment Study which has helped to set a stronger vision for Brookvale's future employment role and function.







### The purpose of this analysis report

This background analysis report details the research and analysis of Brookvale that has informed the revised Brookvale Structure Plan. This analysis aims to build upon the draft Brookvale Structure Plan 2017 (Hames Sharley, 2017) to re-align with changes in strategic planning policy, reflect new supporting evidence in traffic and transport, urban economics and feasibility.

A key influence in shaping the revised Brookvale Structure Plan have been the changes to strategic planning policy. To ensure the structure plan supports outcomes that give effect to strategic planning directions, priorities and actions, a strategic review of the draft Brookvale Structure Plan 2017 was undertaken to evaluate its alignment with the following strategic plans:

- Greater Sydney Region Plan
- North District Plan
- Towards 2040: Local Strategic Planning Statement

- Recently endorsed and draft local studies/strategy, such as:
  - The Northern Beaches Local Housing Strategy 2021
  - Northern Beaches Affordable Housing Contributions Scheme
  - The draft Northern Beaches Environment Study
  - Northern Beaches Environment & Climate Change Strategy 2040 (Protect.Create.Live)
  - Northern Beaches Move Transport Strategy
  - Northern Beaches Employment Study
  - Northern Beaches Resilience Strategy (Withstand.Adapt.Thrive)
  - the draft Northern Beaches Social Infrastructure Strategy (in development)

In addition to the strategic review, new technical analysis has informed the revised Structure Plan to respond to matters raised during the exhibition of the 2017 version of the draft structure plan. Key issues raised included traffic congestion, supporting the delivery of affordable housing, development feasibility and supporting employment growth in Brookvale. The new analysis which has informed the revised draft structure plan, include:

- The Brookvale-Dee Why Transport Management and Accessibility Plan (TMAP) (Bitzios Consulting, 2021)
- Updated economic analysis (Ethos Urban, 2022)
- Updated feasibility testing (Atlas Urban, 2022).

This analysis is further described in this analysis report.

Based on this new information, refinements were made to the revised draft Brookvale Structure Plan. This process involved:

1. Undertaking a strategic review of the 2017 version of the draft Structure Plan to re-align the plan with updated strategic plans and policy
2. Incorporating findings and recommendations from the new technical analysis
3. Confirming the vision and aspirations for the structure plan
4. Developing a preliminary structure plan framework for technical testing, including feasibility, floorspace demand and traffic and transport considerations
5. Updating the revised draft Brookvale Structure Plan for public exhibition.





Figure 1. Brookvale's location in the Northern Beaches

## Brookvale as a place

The Brookvale Structure Plan concerns 249 hectares of land centred in the suburb of Brookvale in the Northern Beaches LGA. The investigation area is largely consistent with the Brookvale suburb boundary and has been modified to reflect the street network and include neighbouring uses.

The strategic centre combines Brookvale and Dee Why and provides the greatest number of jobs in the Northern Beaches. The centre comprises a variety of land uses including niche manufacturing and urban services which support the diversity and resilience of the Northern Beaches economy. Policy put forward by the Greater Cities Commission highlight the importance of maintaining this mix of industrial and urban services for local employment to be self-sustaining while encouraging opportunities for innovative and creative industries. Providing high quality office and retail spaces within

the precinct is key to encouraging growth of emerging professional and creative businesses without displacing industrial and urban services activity. Actions also seek to promote walking, cycling and public transport between Brookvale and Dee Why to enhance connectivity between the dual-centre. While the dual-centre of Brookvale-Dee Why is holistically considered a strategic centre, there are distinctions between the two centres. Dee Why is a mixed-use centre with a greater proportion of higher density residential, with employment being contained to population serving uses such as

smaller-scale retail, cafes and restaurants. Conversely, Brookvale functions primarily as an employment centre, with its industrial area supporting niche manufacturing, urban services and wholesale industries and Warringah Mall being one of the largest 'single roof' shopping centres in Greater Sydney. The centre is also unique in its character and culture with a presence of industrial uses and emerging creative industries.



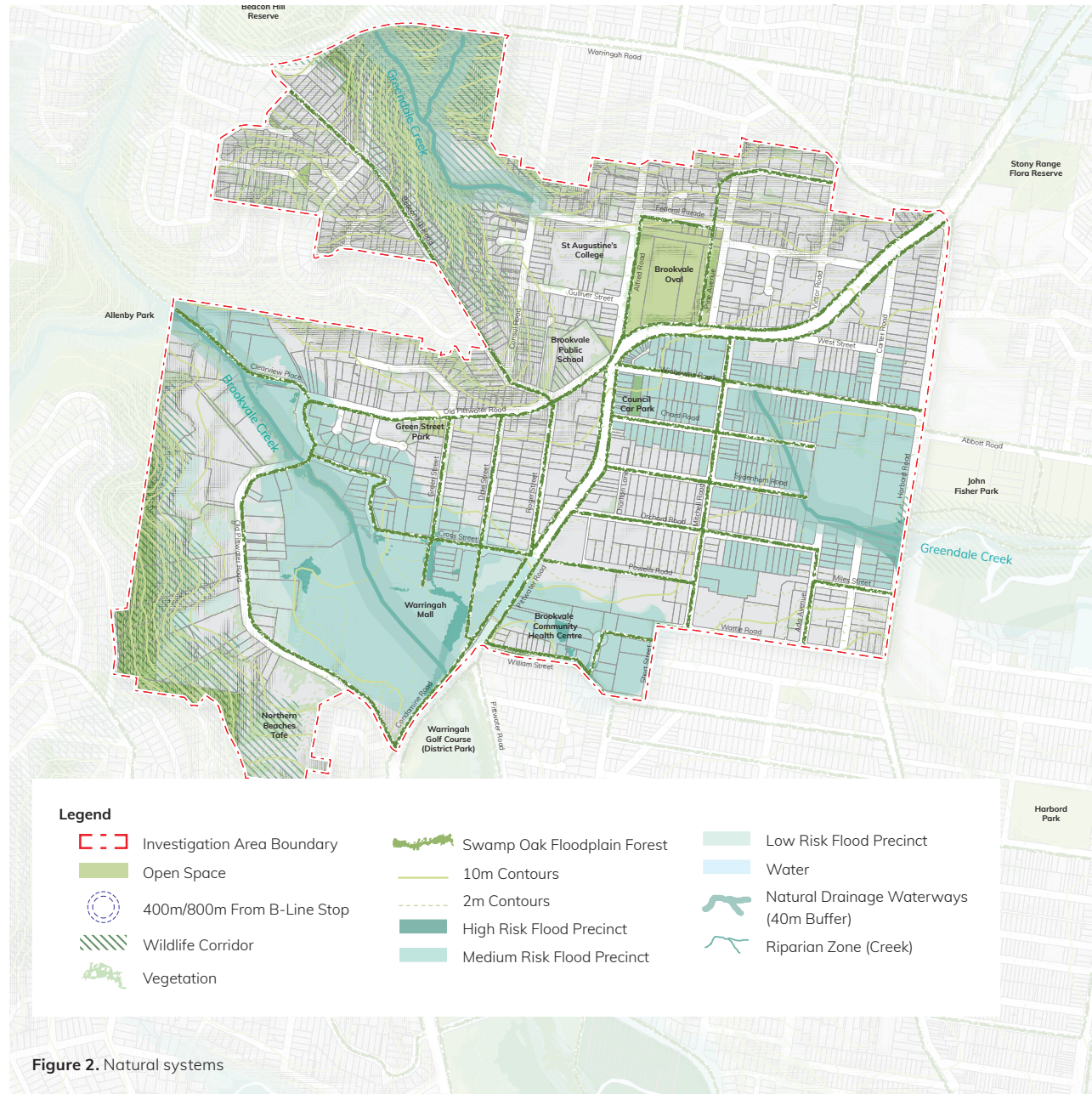


Figure 2. Natural systems

### The natural systems

The topography of Brookvale is primarily flat with a gradual incline to the north of the investigation area along Beacon Hill Road and Greendale Creek along the western boundary. Existing low density residential dwellings located along Beacon Hill Road sit at a highpoint, accessing views across Harbord Lagoon towards North Curl Curl Beach. The commercial and industrial land located within the investigation area are located at a low point, sitting amongst the undulating topography to the north and west. Brookvale Creek to the north-west of the investigation area is clearly defined within a steep valley that is interrupted by urban development.

The investigation area's natural setting comprises large flood affected lands as a result of the corresponding low-lying land located either side of the existing Manly Creek and Greendale Creek and coastal inundation risks to the south. Despite the potential flooding challenges, the waterways provide a key source of amenity where restored to a condition that better reflects that of their natural state that carries a unique 'water story' including connectivity to the hinterland and ocean. This presents an opportunity for consideration for the revised structure plan.

The investigation area is generally cleared of native vegetation which is geographically limited to the periphery of the area with the existing Greendale Creek, Brookvale Creek, Brookvale Oval and dispersed pocket parks. These native vegetation areas contain a number of threatened species. Wildlife corridors are also present along the existing creek reserves and there is an opportunity for the revised structure plan to provide linkages between habitat corridors through integrating Water Sensitive Urban Design (swales along roads, green/linear links).





In 2011,  
**the population of the  
Total Study Area** was  
3,380 persons. This has  
since increased by +920  
persons to reach 4,300  
residents in 2020.

**3,380**  
residents in 2011

**+920**

**4,300**  
residents in 2020

**An age profile similar**  
to Greater Sydney with  
a median age of

**36.6**  
Brookvale Study Area

**36.4**  
Greater Sydney

Professional services   Health care   Retail trade

were the **main industries of employment** for residents. Resident employment profile is similar to the Greater Sydney average.

**Most residents  
worked in white  
collar jobs**

**72.4%**  
Brookvale Study Area

**74.8%**  
Greater Sydney

**Fewer family households**

**66.6%**  
Brookvale Study Area

**73.7%**  
Greater Sydney

Brookvale precinct also had a much higher share  
of **lone person households**

**29.2%**  
Brookvale Study Area

**21.7%**  
Greater Sydney

**Slightly lower  
ownership  
share with**

**59.2%**  
Brookvale Study Area  
dwellings owned with a  
mortgage or outright

**62.2%**  
Greater Sydney  
dwellings owned with a  
Mortgage or outright

**High household  
incomes** with a median  
household income of

**\$98,820**  
Brookvale Study Area

**\$92,000**  
Greater Sydney

**High density living  
with a lower share  
of separate houses.**

**27.2%**  
Brookvale Study Area  
Separate Houses

**54.6%**  
Brookvale Study Area  
Share of Flat, Units or Apartments

**28.2%**  
Greater Sydney  
Separate Houses

**57.2%**  
Greater Sydney  
Share of Flat, Units  
or Apartments

**Some of the key trends between the  
2011 and 2016 census, include:**

- Household income increased from a median household income of \$76,810 in 2011 to \$98,820 in 2016.
- Dwelling density increased with a reduction in the share of semi-detached dwellings and a corresponding increase in flat, unit or apartments. Separate houses remained unchanged, which indicates that residential development has been primarily been concentrated in existing areas of density.
- Dwelling ownership has increased a greater share of dwellings owned with a mortgage but a decline in the share of dwellings owned outright.
- Housing costs have declined with a decrease in the median monthly mortgage from \$2,620 in 2011 to \$2,340 in 2016, while median weekly rents have increased from \$420 to \$520. However, the variation of median rents from the Greater Sydney median has declined from 16.7% to 15.6% indicating that rents have not increased as quickly as the rest of Greater Sydney.
- Share of residents in white collar occupations has remain unchanged with managers and professions remaining the dominant occupation of employment for residents.





Employment

Between 2011 and 2020, the number of jobs in the Total Study Area increased from 11,460 to 14,170 in 2020, an increase of +2,710 jobs. In 2020, the majority of jobs are in the Western Study Area (7,620 jobs) followed by the Eastern Study Area (5,470 jobs) (see Table 3 below). 22.4% of jobs within the Total Study Area are in Retail Trade, with the next highest industry being Manufacturing with 12.9% of the jobs. Professional Services (9.3%), Wholesale Trade (9.2%) and Construction (9.2%) were the other main industries of employment. (For study area boundaries refer to Appendix C).

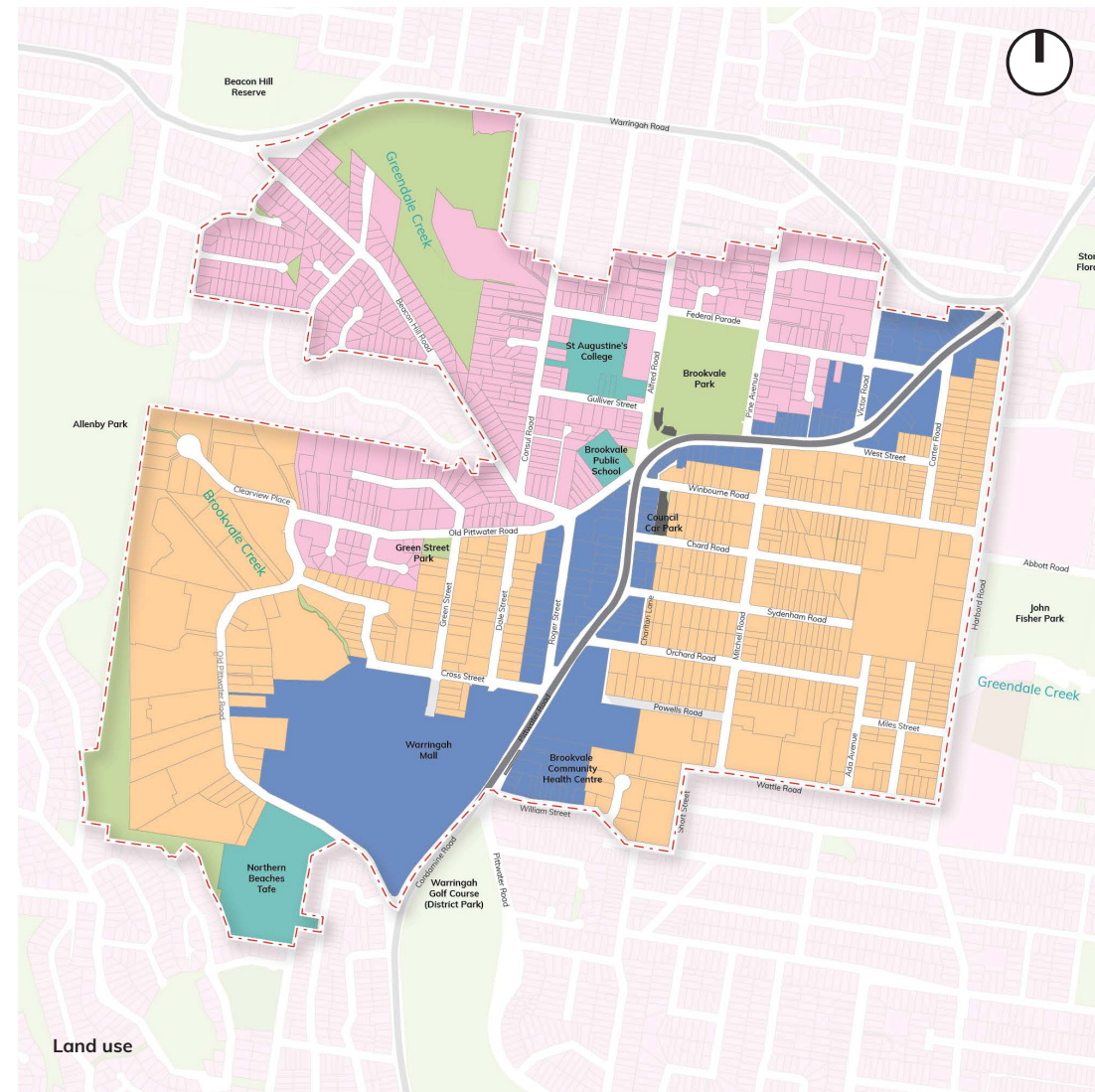
Table 1: Employment growth, 2011 to 2020

Employment	2011	2016	2020	2011 to 2020
Total Study Area	11,460	13,640	14,170	+2,710
Northern Study Area	930	1,040	1,080	+150
Eastern Study Area	4,270	5,310	5,470	+1,200
Western Study Area	6,260	7,290	7,620	+1,360
1km Investigation Area	11,790	14,080	14,630	+2,840
Growth				
Total Study Area		+440	+130	+301
Northern Study Area		+20	+10	+17
Eastern Study Area		+210	+40	+133
Western Study Area		+210	+80	+151
1km Investigation Area		+460	+140	+316
Growth Rate				
Total Study Area		3.5%	1.0%	2.4%
Northern Study Area		2.3%	0.9%	1.7%
Eastern Study Area		4.5%	0.7%	2.8%
Western Study Area		3.1%	1.1%	2.2%
1km Investigation Area		3.6%	1.0%	2.4%

Source ABS 2011; ABS 2016; TfNSW; Ethos Urban

Note:2011 and 2016 employment figures have been derived using destination zones that broadly match the 1km investigation area. 2020 figures are derived from TfNSW employment projections.





#### Legend

	Investigation Area Boundary		Public Open Space		Industrial
	Main road		Residential		Education
			Commercial		Car Parking

Figure 3. Land use

#### Land use and ownership

The arterial road of Pittwater Road runs through the centre of the investigation area, defining Brookvale into two separate parts.

The investigation area includes the largest concentration of industrial zoned land in the North District of Sydney with approximately 86ha of dedicated industrial land including small warehouses, manufacturing and commercial wholesalers. The West of Pittwater Road contains a mixture of larger industrial warehouses and manufacturing businesses..

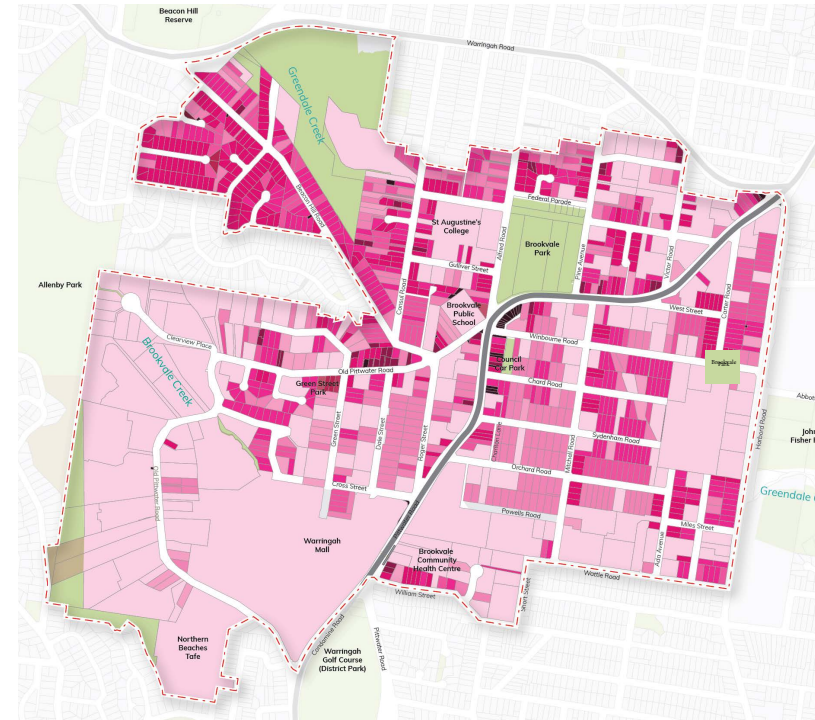
The investigation area comprises a mix of commercial uses running north along Pittwater Road including a variety of commercial land uses, culminating at Westfield Warringah commercial core at the junction of Pittwater and Old Pittwater Road. Residential dwellings bound the north and south end of the investigation area with a mixture of dispersed public open spaces and education facilities.

Scentre Group own the largest parcel of land within the investigation area, namely being Warringah Mall Westfield Shopping Centre. Other larger holding are TAFE NSW's ownership of the Northern Beaches TAFE and the Department of Education's ownership of St Augustines. The Council also own Brookvale Park and smaller parcels of land scattered throughout the investigation area. All other land holdings are by private enterprise.



Figure 4: Site photos of existing built form





#### Legend

- Investigation Area Boundary
- Main road
- Public Open Space
- 0-300 m<sup>2</sup>
- 301-450 m<sup>2</sup>
- 451-600 m<sup>2</sup>
- 601-750 m<sup>2</sup>
- 751-900 m<sup>2</sup>
- 901-1200 m<sup>2</sup>
- 1201-1500 m<sup>2</sup>
- 1501-2000 m<sup>2</sup>
- 2000+ m<sup>2</sup>

#### Block and lot pattern

The investigation area is characterised by a variety of lot sizes that range from small residential and commercial lots of 300m<sup>2</sup> to 600m<sup>2</sup> to the east and industrial lots of 750m<sup>2</sup> to 2000m<sup>2</sup> and more to the west. The east of the investigation area is defined by a fine grain lot pattern as a result of former plans zoning the land for residential use. Existing industrial lots framing Pittwater Road to the west are significantly large and irregular shaped, in comparison to the industrial lots to the east comprising of varying sizes. Westfield Warringah Mall is located on the largest commercial lot in the investigation area. There is no identified minimum lot size for land zoned B5 Business Development and B3 Commercial core.

The width of lots in the investigation area generally correspond with the overall area of the lot. This is reflected in smaller lots comprising small lot widths within the fine grain lot pattern for commercial and residential uses to the east of Pittwater Road. Larger lots typically feature wider lengths such as the large industrial lots located to the west of Pittwater Road. It is likely that lot consolidation of 2-3 lots will likely be required for future large-scale development to be considered viable within the existing commercial lots abutting Pittwater Road.

#### Built form and density

The investigation area comprises varying heights and floor plates, with a dominant 1-2 storey development typology. Warringah Mall contains the largest floor plate for retail purposes up to 3 storeys in the investigation area, in contrast to retail and commercial uses concentrated along Pittwater Street comprising small floor plates up to 2-storeys. Large industrial warehouses with open pads contain large floor plates between 1-2 storey and congregate to the east of Pittwater Road.

#### Transport

Pittwater Road is the main arterial road serving as a north-south connector through the investigation area. It serves a multi-functional role in the road network, facilitating regional movements between the Northern Beaches and the lower North Shore, as well as 'local' trips between Dee Why and Brookvale. Pittwater Road is well serviced by existing bus routes including the B-Line. The B-Line bus stop is located at the Westfield Warringah interchange providing direct public transport access to Brookvale's commercial core. Other local bus routes service the length of Pittwater Road as well as some local roads including Winbourne and Mitchell Road (in part).

Warringah Road serves an east-west major arterial road connecting Pittwater Road to Chatswood. Main arterial roads in the investigation area have been defined as movement corridors in the movement and place model. These roads reflect high proportions of through vehicles for public transport, private vehicles and freight.

Designated cycle routes cover a significant portion of the investigation area, located along the major arterial roads and some local roads. There is opportunity to improve existing cycle routes, as most cycle lanes are not clearly defined or protected within the investigation area.

Multi-use trails and paths are typically located along surrounding green links that feed into the investigation area, as well as some local roads.

On-street parking management approaches will be required to dynamically respond to the make-up of the area and the nature of the uses as parking will be limited with the intensification and development of the investigation area.

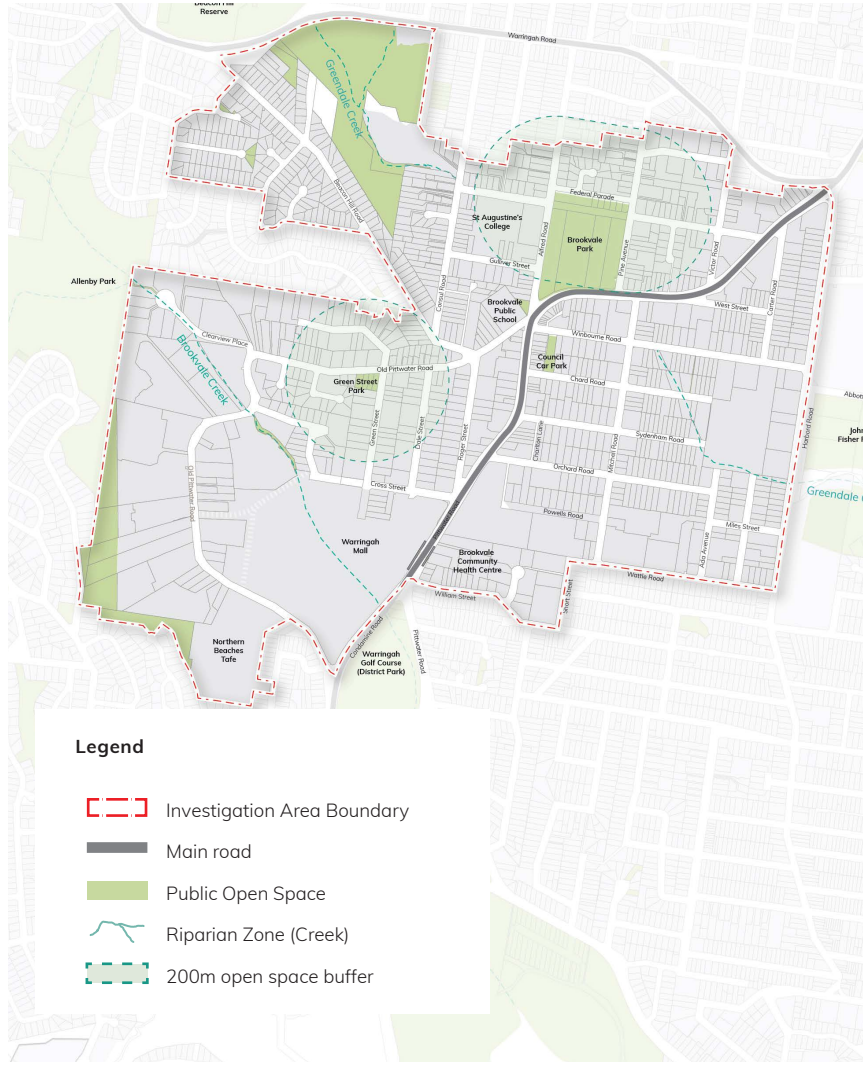
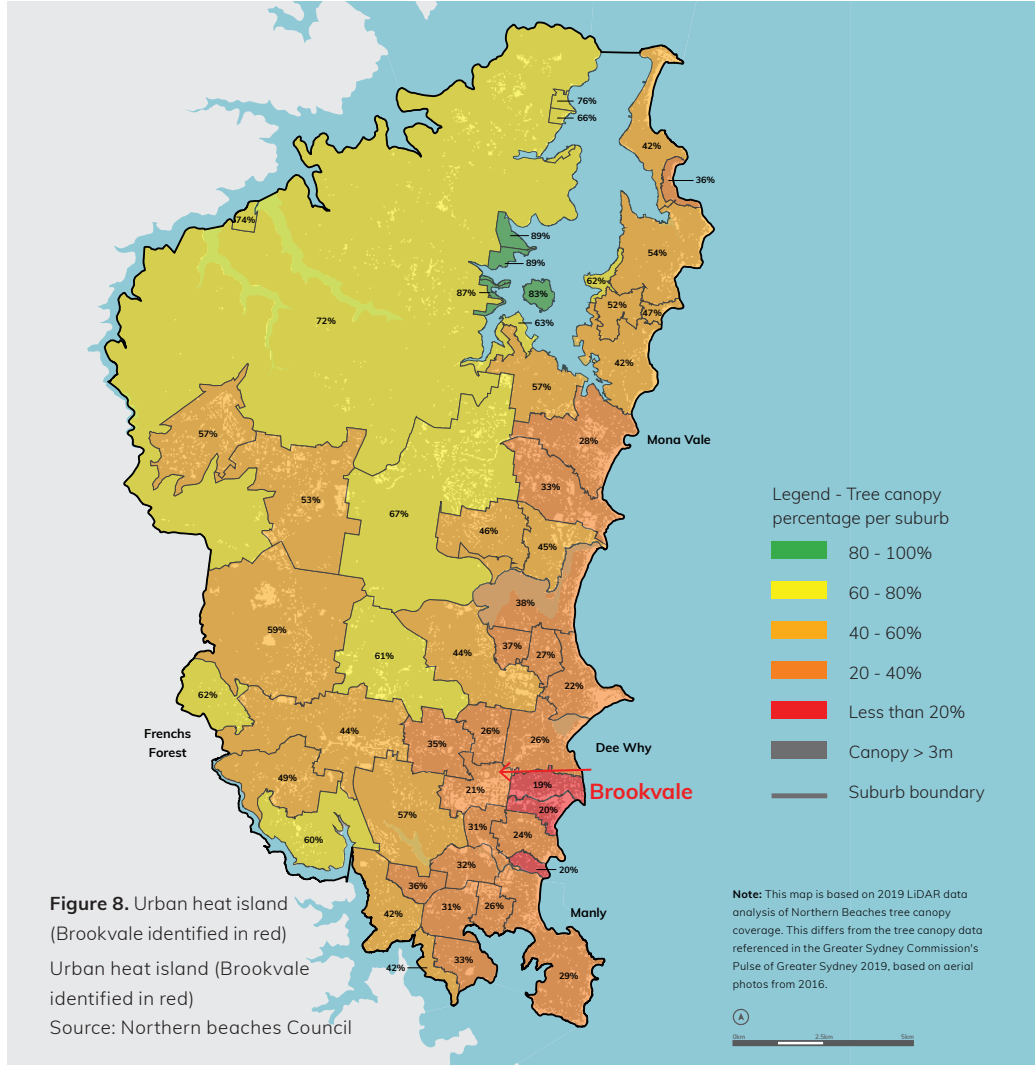
Figure 5. Block and lot pattern



#### Legend

- Investigation Area Boundary
- Public Open Space
- 400m/800m From B-Line Stop
- ~ ~ ~ Riparian Zone (Creek)
- ✱ Community / Civic Uses
- B B-Line Stop / Route
- Pedestrian / Cyclist Overpass
- Local Bus Route
- Pick up/drop off zone
- P Parking Location
- Existing Cycling Network (NB Bike Plan 2020)
- - - Proposed Cycling Network (NB Bike Plan 2020)
- - - Local Proposed Cycling Network
- - - Multiuse Trail - Unsealed





**Open space**

Within the investigation area, the majority of developed open space falls within Brookvale Park, which provides green open space, a District playground, basketball, cricket net and fitness equipment. The sportsfield itself is available for public access and bookings when not being used by the Manly Warringah Sea Eagles for rugby league.

Green Street Park also provides for local open space within the investigation area and provides a highly used playground.

The investigation area is boarded by a number of larger public open space areas. This includes Allenby Park to the west which provides natural open space

and a tranquil setting for a walk through the rainforest and a picnic. To the east is a district scale John Fisher Park, which provides extensive green open spaces and associated activities which are readily available to the residents of Brookvale.

While being surrounded by larger public open spaces, there is significant opportunity to increase the amount of public open space within the core of suburb as part of the revised structure plan to support the recreational needs of residents and workers in Brookvale.

**Urban heat island**

The investigation area currently comprises a very low tree canopy coverage, with Brookvale having among the lowest levels amounts of tree canopy cover (21%) of all suburbs in the LGA as shown in Figure 8. This is a result of the highly urbanised and industrial area of Brookvale with limited green coverage. The arterial road of Pittwater Road also constrains the greening in the area.

Substantial tree planting to increase the urban tree canopy to reduce the urban heat island effect will be necessary as part of the revised structure plan.



## Heritage

The investigation area contains a mix of heritage items including land uses, memorials and residences that are identified for their inter-war mission style that has been adaptively reuse. The heritage items include the following:

- Former premises relating to Austral Brickworks (I2 Local item)
- Milroy House (I3 Local item)
- Brookvale Public School (I4 Local item)
- Bus shelter (I5 Local item)
- Palm trees and plaque on the corner of Pittwater Road and Cross Street (I6 Local item)
- Former Wormald Building (front entrance, tower and curved former canteen only) (I49 Local Item)

There are several opportunities to integrate aboriginal culture and heritage throughout the Brookvale Investigation Area. This is such as public art installations.



**Figure 6:** Brookvale Brickworks 1975

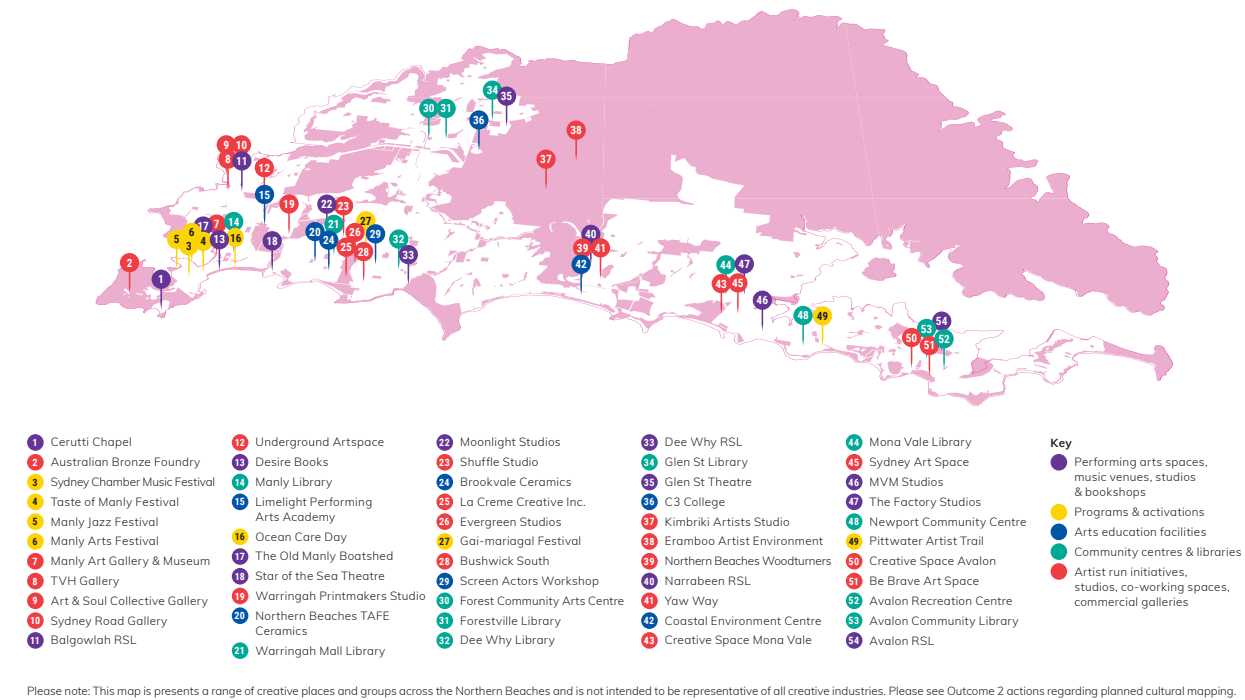


**Figure 7:** Brookvale Public School c1910s

Source: Warringah Council, Photographer: Bill McCausland



**Figure 8:** Palm trees and plaque on the corner of Pittwater Road and Cross Street, planted 1927. Photo Date 1994  
Source: Warringah Council



Please note: This map is presents a range of creative places and groups across the Northern Beaches and is not intended to be representative of all creative industries. Please see Outcome 2 actions regarding planned cultural mapping.

**Figure 9:** Snapshot of creative spaces and places. Source: Northern Beaches Council's Arts and Creativity Strategy



Social and cultural

The investigation area contains the Warringah Mall Library which contains the largest library floorspace compared to other libraries in the Brookvale-Dee Why Catchment. There is an opportunity to expand and renew the existing local community facilities in the area and there is an identified gap in the number of integrated multipurpose facilities available within the investigation area. Opportunities to deliver co-working facilities and high amenity spaces close to the B-line will be critical for creative and professional businesses to grow, network and develop as an innovation district.

Brookvale Park is the largest community asset in the investigation area. With high usage

as a sports stadium and the site recently obtaining development consent for the Centre of Excellence at the northern end of Brookvale Park, there is significant opportunity to improve connectivity between the sports field and existing B-line stop. Increasing accessibility will be critical with the Centre of Excellence likely to generate greater activity with the new development including a new 3,000 seat undercover grandstand, gym, rehabilitated pools, multipurposed education facilities and food and drink premises.

Council’s Arts and Creativity Strategy identifies the need to support innovative and creative industries that enable creative sector vitality, collaboration for innovation and building

thriving arts hubs as a key outcome. The strategy identifies Brookvale as the heart of emerging creative industries, with being “the home to printing studios, surfboard shapers, artist studios, fabric designers and recording studios”. The strategy notes that the community has indicated the need for more diverse creative and cultural opportunities across all creative disciplines. The investigation area will need to respond to the growing creative community through the delivery of creative spaces to facilitate cultural events and foster collaborative opportunities.

Constraints

There are a number of key constraints as a result of the natural environmental, traffic barriers and fragmented ownership patterns affecting the investigation area. These constraints limit the capacity of growth the centre will be able to support in the future. The key constraints identified include the following:

- A disconnect between existing green links and corridors
- Significant flood hazard in low lying commercial and industrial areas
- High urban heat effects due to significant hardstand areas and limited urban tree canopy
- Lack of public open space within the core of the investigation area
- Traffic congestion during peak periods along Pittwater Road which limits access to services and employment areas in Brookvale
- The division of the area into two distinct sides by the Pittwater Road arterial which is a barrier to east-west pedestrian and cyclist movement

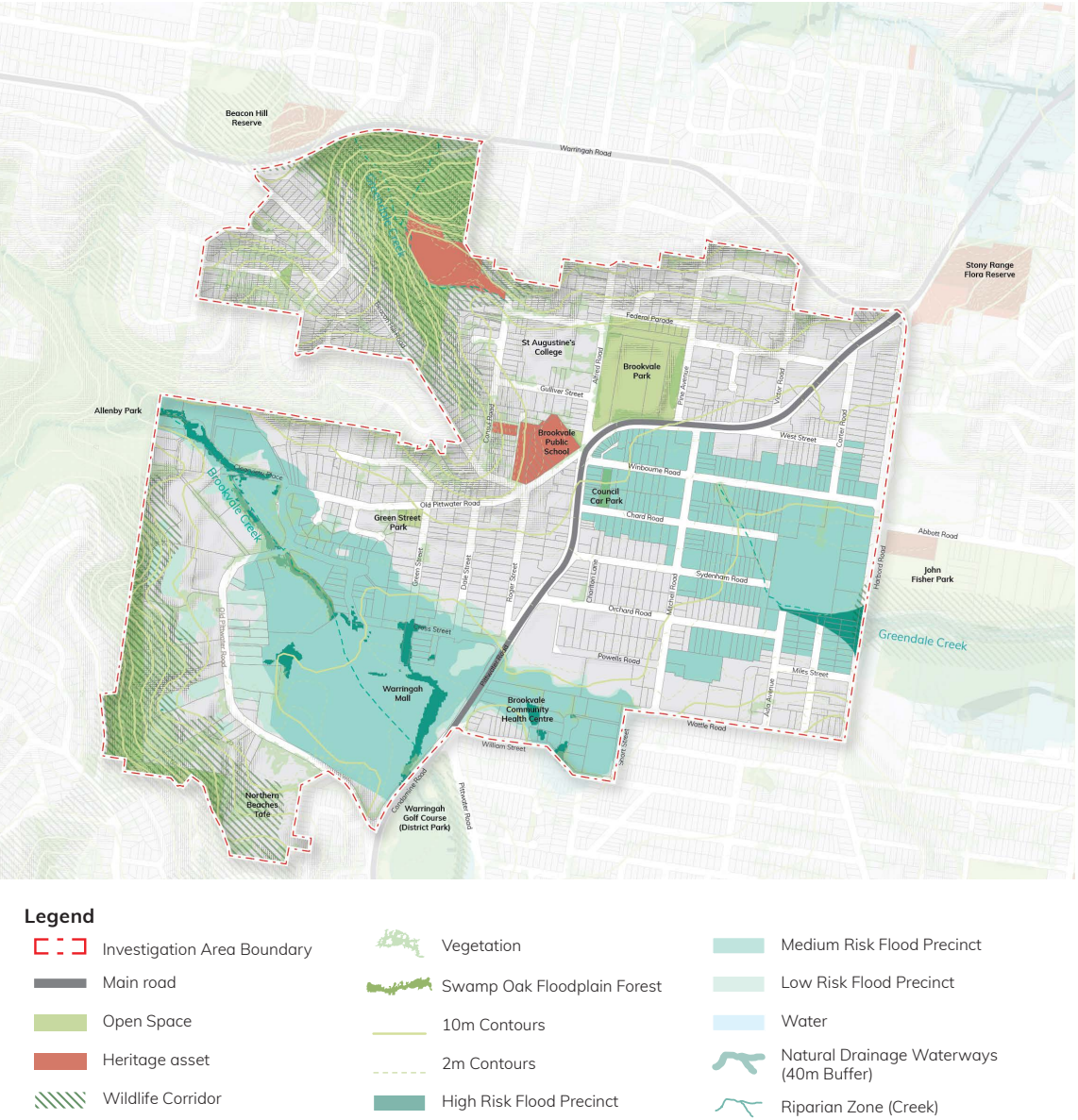


Figure 10: Key weaknesses and constraints



- Pittwater Road generates substantial noise and currently has poor amenity
- Pedestrian amenity and permeability is limited due to long street blocks.
- These constraints will inform the capabilities and apply place-based responses through the revised Structure Plan.

**Strengths and opportunities**

There are a number of key strengths and opportunities to support future growth and development to best utilise the Brookvale centre as an activated, functioning centre.

Key strengths of the Brookvale investigation area, include:

- Improved accessibility from the B-line service

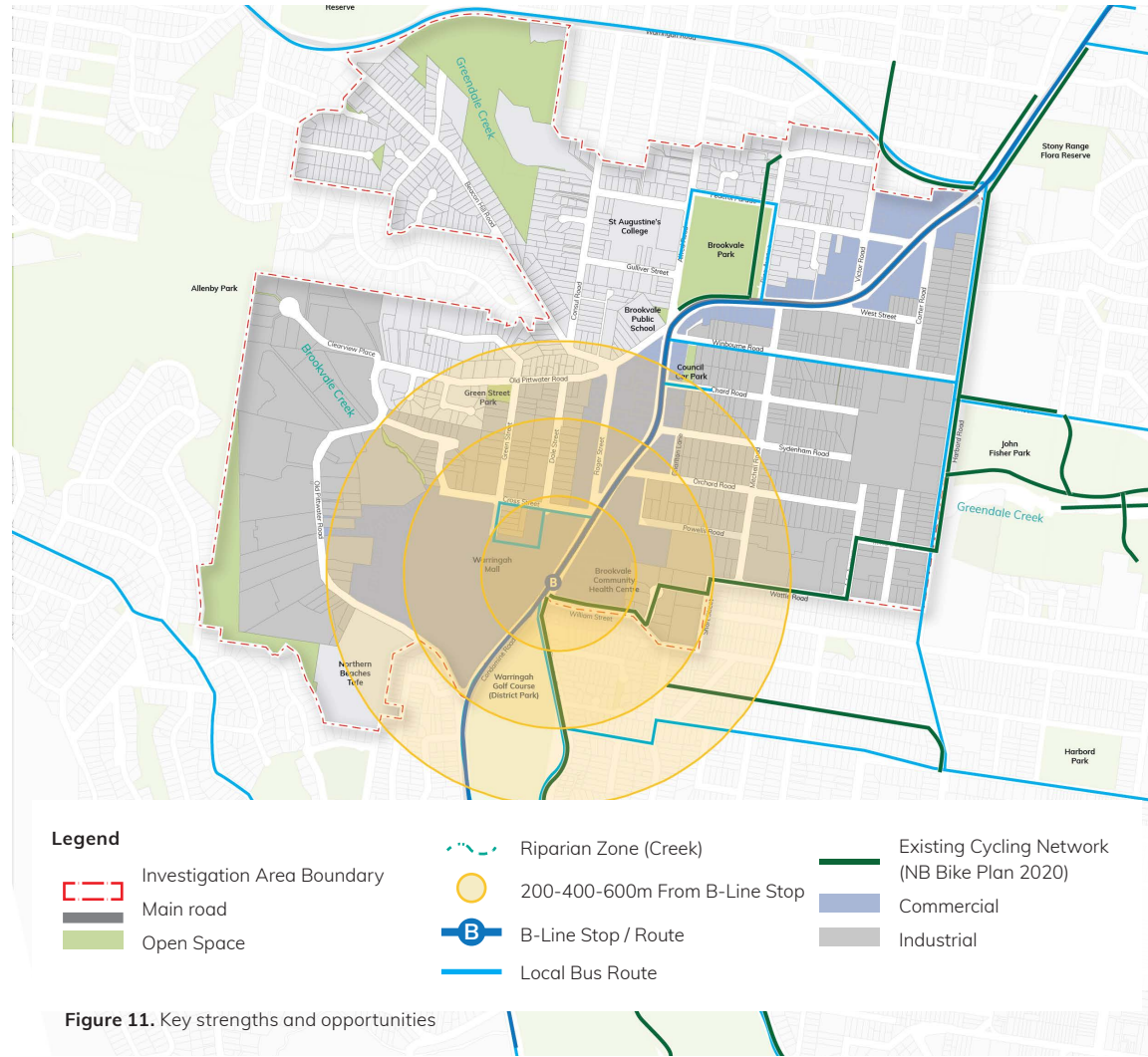
- Established and highly networked clusters of local urban services and industrial land uses, enablers of emerging industries (Advanced Manufacturing, technology, creative and innovative industry)
- Amenity, convenience and activation provided by existing retail offering
- Its access to district scale open spaces including, John Fisher Park.

There are a number of opportunities within the investigation area, including:

- Establishing a new community focal point with new public open space and community infrastructure that is close to existing services and amenities
- Its access to a large white-collar labour force within Northern Beaches LGA that may support the delivery of commercial office space to allow residents to live and work within the local area

- The emerging number of creative industries that are supporting Brookvale’s role as destination for workers and visitors
- Providing linkages between habitat corridors through the site in the form of WSUD (swales along roads, green/linear links)
- Improving existing cycle routes as most cycle lanes are not clearly defined or protected
- Ensuring that built form continues to harness long range views to the surrounding topography
- Emphasising the bush-coastal character of the area within streetscape design and built form
- Consolidating future development along Pittwater Road to integrate with existing public transport links and Warringah Mall.

These opportunities will inform the the revised structure plan. In particular, the opportunity to deliver localised employment opportunities to drive economic growth for Brookvale to become more dynamic, prosperous and liveable with emerging innovative industries, services, technologies and knowledge-based jobs. that the structure plan maximises these opportunities for economic development.

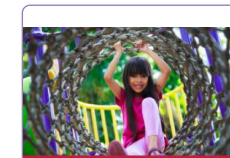






## The strategic planning context

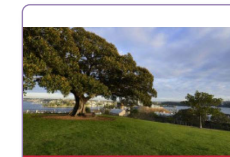
A number of existing State and local strategic planning documents and policies provide guidance and direction for the future planning of Brookvale. The following policies and their relevant priorities and actions have been considered in the development of the revised Structure Plan.



### BETTER ENVIRONMENT

#### Greener public spaces

Increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10% by 2023.



### BETTER ENVIRONMENT

#### Greening our city

Increase the tree canopy and green cover across Greater Sydney by planting one million trees by 2022.

### The Premier's Priorities shape the work of State agencies

Two of these are relevant for the planning of Brookvale as a leafy, green place:

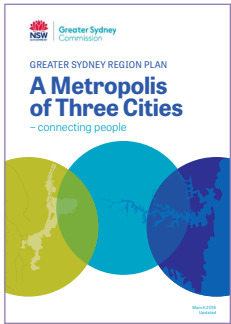
**'Greener public spaces'** – increasing the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10 per cent by 2023

**'Greening our city'** – increasing the tree canopy and green cover across Greater Sydney by planting one million trees by 2022.

These priorities are supported by the planning for the Greater Sydney Green Grid, as well as the broader Five Million Trees Program, which is funding the work of councils to plant thousands of more trees across Greater Sydney. The NSW Government's \$150 million Strategic Open Space program aims to secure and improve green space across Greater Sydney.

The Parks for People program is the initial \$50 million that is being spent across Greater Sydney to create better access to open space – this latter program will fund a new park alongside Wakehurst Parkway.





**Greater Sydney Region Plan and North District Plan**

The Greater Sydney Region Plan establishes a 40-year vision to 2056 for Greater Sydney to be a metropolis of three cities, enabling most people in Greater Sydney to get to their nearest strategic centre within 30 minutes by public transport. The Region Plan is supported by five district plans that guide the implementation of the Region Plan at a district level and act as a bridge between regional and local planning. Brookvale is located within the North District and is included in the North District Plan.

The North District Plan has identified that an additional 92,000 homes will be needed in the district by 2036, while also establishing a baseline target of 23,000 jobs for the Brookvale-Dee Why area by 2036 (from 3,000 in 2016). The more ambitious target is for 26,000 jobs.

The District Plan also identifies Brookvale-Dee Why as being a strategic centre, recognising its current role in supporting the greatest number of jobs in the Northern Beaches. Actions put forward for to strengthen the strategic centre, include:

- maintain the mix of uses so that Brookvale-Dee Why continues to perform strongly as a well-balanced, self-sustaining combined centre
- encourage and support improvements to Warringah Mall and better integrate it within the fabric and life of Brookvale-Dee Why
- recognise and enhance the economic and employment opportunities along Pittwater Road and encourage revitalisation along the commercial strip

- promote walking, cycling and public transport to Warringah Mall, the Brookvale industrial area and Dee Why
- encourage the establishment of new, innovative and creative industries in the Brookvale industrial area
- encourage new lifestyle and entertainment uses to activate local streets in Brookvale-Dee Why
- improve connections between Brookvale-Dee Why and the Northern Beaches Hospital at Frenchs Forest.



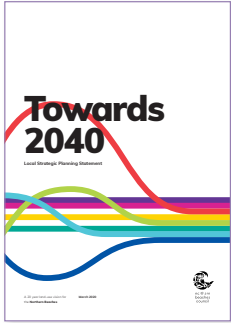
**Future Transport and mobility**

The Future Transport Strategy 2056 sets the vision and direction for NSW transport investment. It includes a movement and place framework to ensure that transport supports the character of the places and communities. The key guiding principles for future transport that are relevant to the Brookvale Structure Plan, include:

- **Successful places:** The liveability, amenity and economic success of communities and places should be enhanced by transport
- **Accessible services:** Transport should enable everyone to get the most out of life, wherever they live and whatever their age, ability or personal circumstances

Council's Move - Northern Beaches Transport Strategy 2038 echoes this ambition. It aims for a quarter of all trips in Northern Beaches LGA to be made by public transport by 2038, and for a 30% reduction in trips by cars in the same period. One of the key objectives of the strategy is to prioritise active travel options by improving existing cycling and walking networks around the Northern Beaches. In this context improving the active transport environment around the Brookvale centre is one of the key objectives of the Revised Structure Plan.





**Towards 2040 - Northern Beaches Local**

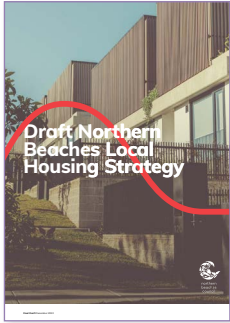
Towards 2040 (LSPS) sets a 20-year vision and supporting planning priorities and actions for land use planning in Northern Beaches Council. The LSPS recognises the role of Brookvale as a strategic centre which will continue to accommodate most of the LGA's jobs. Specifically, Planning Priority 24 identifies Brookvale as an employment and innovation centre which will continue to support industrial, commercial, retail, service and education sectors, but also encourages opportunities to grow high skilled employment and innovation-led change across its existing base of urban services, manufacturing, distribution, automotive and construction industries. While renewal

opportunities will support Brookvale as a place for jobs, new housing will be provided subject to infrastructure such as B-Line improvements, public transport to Chatswood and an express bus to Manly.

To support the future planning of Brookvale, the LSPS identifies the following principles:

- Support Brookvale as an employment-based centre.
- Establish a town centre-activity point and open space outside of Warringah Mall
- Support the expansion of Warringah Mall and integrate it with surrounding built form
- Bring life back to the streets, including revitalisation of the main commercial strip

- Ensure appropriate interfaces between different land uses.
- Enhance tree canopy and provide green links to Brookvale Park, Warringah Mall and the B-Line.
- Enhance Brookvale's identity and define gateways to create a sense of arrival
- Improve public transport and regional cycle networks to Sydney CBD, Frenchs Forest, Mona Vale and Manly.
- Support the night-time economy, creative and innovative industries and public art.
- Preserve the industrial integrity of the industrial zoned land.



**Northern Beaches Local Housing Strategy**

The Northern Beaches Local Housing Strategy (LHS) sets a vision for the supply of future housing to meet the needs of the growing community. Importantly, the LHS looks at the mix of housing in the Northern Beaches Local Government Area (LGA) today, and at the kind of housing that will be needed in the future.

The LHS proposes a range of actions in five priority areas, including:

- **Priority 1:** Housing targets - meet District Plan and 6-10 year housing target.
- **Priority 2:** Detailed planning for centres - establish sufficient capacity to accommodate housing demand around existing centres
- **Priority 3:** Social and affordable housing - encourage the provision of affordable housing and plan for boarding house in appropriate and accessible locations

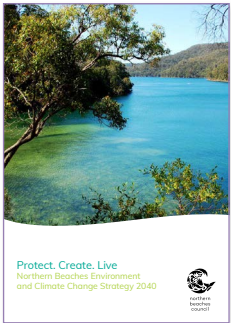
- **Priority 4:** Precinct sustainability and housing - investigate and support sustainable housing precincts
- **Priority 5:** Planning for seniors housing - incentivise the provision of seniors housing in the right locations.

Specifically to Brookvale, the following directions are identified by the LHS to inform the future planning of this area:

- Concentrated medium and higher density urban renewal should occur within 1km around accessible centres along the B-line corridor
- It is noted that Brookvale and Dee Why are considered priority renewal areas in support of future housing development.
- Brookvale to be prioritised as initial focus for urban renewal. However, the strategy highlights that as the LGA's largest employment centre, it is important that employment land uses are retained in the Brookvale area.

- Potential additional capacity of 840 – 1,240 dwellings if the Centres Renewal Framework is applied to Brookvale (it should be noted that this covers a broader area then the study area for the revised Brookvale Structure Plan)
- Brookvale is to provide medium-high density housing supply that complements the employment centre.
- Brookvale may be able to accommodate some more high density residential and mixed-use development (with ground floor retail).
- Brookvale is to be prioritised as catalyst for renewable energy innovation.



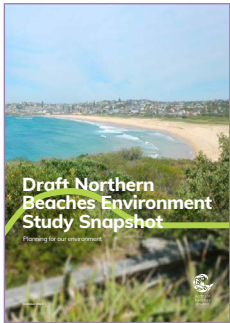


**Northern Beaches Environment & Climate Change Strategy 2040 (Protect.Create.Live)**  
Northern Beaches Environment and Climate Change Strategy 2040 is our plan for a healthy and diverse natural environment that is respected, supported and celebrated. Notably, the strategy recognises the opportunity to use our land use planning instruments and controls to design and build our neighbourhoods well so they fit within our natural environment, rather than damage or destroy it, and reduce resource use.

The Strategy defines key goals and actions that will inform how Council plans for adaptive and resilient communities in the LGA. The following goals will be important for the future planning of Brookvale:

- Our homes, work places, buildings, infrastructure and neighbourhoods are designed, built and maintained with low environmental footprints, to improve liveability and support community resilience.

- The built environment integrates nature and connects our community through green and blue networks to support active travel and healthy lifestyles. We design our community around nature.
- Our community is actively working towards being energy, water, waste and transport smart so that we meet net zero carbon emissions by 2050.

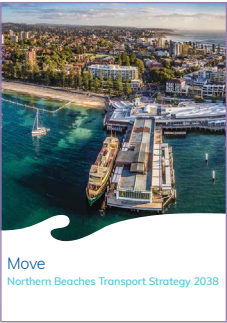


**Northern Beaches Environment Study**  
The Draft Northern Beaches Environment Study is part of the framework to support the new Local Environment Plan, Development Control Plan and other development related activities. The Study recommends actions that will help to deliver the commitments within the Local Strategic Planning Statement - Towards 2040 and the Environment and Climate Change Strategy, 2040.

Key planning actions identified by the Environment Study that are relevant to the Brookvale Structure Plan, include:

- Review, develop and integrate planning controls into the new planning framework that includes green infrastructure that provides for water treatment and retention, water sensitive urban design, urban cooling, ecosystem services and amenity and integrate it into built, landscaped and natural environments in strategic centres, employment hubs and areas subject to urban intensification.
- Ensure built form controls maximise landscape open space at ground level, and where appropriate at upper levels.
- Implement a best practice Urban Tree Canopy Plan for the LGA that includes tree canopy targets and prioritises local native tree species.
- In the short term, incorporate within the new planning framework requirements for landscape open space, tree protection and replacement requirements.
- Develop and integrate planning controls into the new planning framework that require building materials that help to mitigate urban heat.



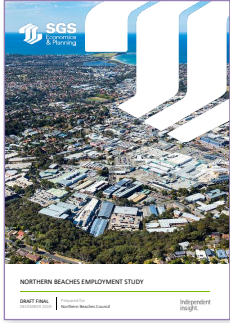


**Move - Northern Beaches Transport Strategy 2038**

The Northern Beaches Transport Strategy provides a long-term vision (20 years) for transport on the Northern Beaches in response to the community’s priorities. It outlines key Future Directions for transport infrastructure, reducing congestion and changing travel behaviour.

The Strategy is structured on five Themes with each having up to eight Future Directions. These themes, include:

- Accessible and Liveable Places - Create and enhance “Places for People” that are integrated with public transport, creating vibrant, connected places with wide footpaths, safe cycling options and where the car is not the first option.



**Northern Beaches Employment Study**

The Northern Beaches Employment Study is part of the framework to support the Local Strategic Planning Statement - Towards 2040, informs updates to the Local Environmental Plan and advises non-planning recommendations to an Economic Development Plan. It provides an analysis on the LGA’s opportunities and constraints for employment lands.

Key planning actions identified by the Employment Study that are relevant to the Brookvale Structure Plan, include:

- Improve the functionality of Brookvale through integrating Warringah Mall and surrounding land uses
- Develop a focal point for the centre with protecting and managing the right mix of industrial and urban service lands.
- Concentrate commercial floorspace in the commercial core.
- Identify the likely locations to support commercial growth and prevent the commercial conversion in industrial zones
- Leverage the emerging creative manufacturing scene
- Refocus the role of Brookvale prioritising high skilled employment



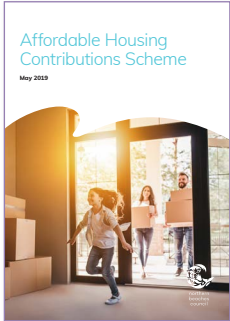


**Northern Beaches Resilience Strategy (Withstand.Adapt.Thrive)**

Northern Beaches Resilience Strategy outlines a vision and actions for strengthening resiliency within the community when shocks or sudden challenges such as bushfires, economic challenge, diseases and pandemics occur. The Strategy establishes seven Strategic Directions to address these shocks and stresses and support a more resilient Northern Beaches.

The Strategic Directions identify key priorities and actions and creates a platform for collaboration and partnerships between the community, businesses, government agencies and non-government organisations. These priorities and recommendations focus on:

- providing support mechanisms that harness on our willingness to learn and adapt
- increasing awareness of current and emerging challenges, and
- implementing a range of mitigative and adaptive measures.
- building the self-sufficiency and capacity of our community
- capitalising on our strengths as a connected community



**Northern Beaches Affordable Housing Contributions Scheme**

In May 2019, Council adopted its Northern Beaches Affordable Housing Contributions Scheme and is the primary mechanism for Council to levy for affordable housing (for areas of uplift) in the Northern Beaches LGA. Specifically, this allows Council to collect developer contributions to provide affordable housing either as complete dwellings or as an equivalent monetary contribution on the Northern Beaches.

The objectives of Council's Affordable Housing Contributions Scheme are:

- to set out how, why, where and at what rate development contributions can be collected for the purpose of affordable housing; and
  - to provide local residents and key workers on low to moderate incomes with access to affordable rental accommodation to assist them to enter the private rental market or home ownership.
- Under the current Affordable Housing Contributions Scheme, Council is committed to the aspiration to deliver a 10% affordable rental housing target for urban renewal areas. To investigate the capacity for future development to deliver affordable rental housing in Brookvale, feasibility analysis was undertaken to determine the level of affordable rental housing that could be delivered as part of the renewal of Brookvale (refer to Section 6.3).



The planning framework for Brookvale

Strategic directions to guide the revised draft Brookvale Structure Plan were developed based on the review of strategic plans, policy and updated traffic, employment and feasibility analysis.

The strategic directions identified include:

1. Draw on the locational attributes and place character of Brookvale.

2. To adopt a holistic approach, rather than focusing on island sites, explore alternative structural layouts for the town centre and the locations of increased density.

3. Employment uses in Brookvale are to remain the first-order land use with residential acting as a complementary use that will support the vibrancy and activity in the centre.

4. Existing industrial zoned lands are to be retained with limited encroachment or intervention of other land uses.

5. Aim to establish an employment-focused mixed-use core around the Brookvale B-line stop that supports a mix of commercial, civic, entertainment activities and is a key focus of activity that attract people to visit and participate in community events, arts, recreation and cultural activities.

6. Consider increasing maximum building heights in industrial zoned areas to allow for multi-level industrial buildings to support future floorspace demand for industrial uses.

7. Mixed use development (incl. residential) opportunities are explored in existing B5 Business Development zones that are within a walkable distance of the B-line stop, and/or currently permit shop top housing as an additional permitted use.

8. Investigate opportunities to encourage alternative forms of ground floor employment uses along the Pittwater Road 'movement corridor', such as entertainment, creative and maker spaces that are less inclined to amenity impacts of a busy road

9. Identify appropriate design measures and/or land use planning approaches to mitigate and manage potential conflicts with surrounding employment uses (e.g. safety, layout, orientation, access, freight and last mile, servicing, design quality and public realm).

10. Identify opportunities to deliver public benefit (e.g. affordable housing, new roads, through site links and open space)

11. Identify opportunities to 'green' the urban environment in Brookvale including consideration of:
  - increasing urban tree canopy coverage
  - the embellishment of existing open spaces within or near the study area
  - innovative strategies to deliver new open space in the centre, such as rooftop parks and sports courts, plazas, wide street verges and the conversion of road space.

12. Outline ambitions to adopt best-practice sustainability targets for energy, water and waste.





Table 2: Table 2 identifies the land use zones and the objectives these zones.

Zone	Objectives	
B3 Commercial Core	<ul style="list-style-type: none"><li>To provide a wide range of retail, business, office, entertainment, community and other suitable land uses that serve the needs of the local and wider community.</li><li>To encourage appropriate employment opportunities in accessible locations.</li></ul>	<ul style="list-style-type: none"><li>To maximise public transport patronage and encourage walking and cycling.</li><li>To recognise and support the role of Warringah Mall as a retail centre of sub-regional significance.</li></ul>
B5 Business Development	<ul style="list-style-type: none"><li>To enable a mix of business and warehouse uses, and specialised retail premises that require a large floor area, in locations that are close to, and that support the viability of, centres.</li></ul>	<ul style="list-style-type: none"><li>To provide for the location of vehicle sales or hire premises.</li><li>To create a pedestrian environment that is safe, active and interesting by incorporating street level retailing and business uses.</li></ul>
IN1 General Industrial	<ul style="list-style-type: none"><li>To provide a wide range of industrial and warehouse land uses.</li><li>To encourage employment opportunities.</li><li>To minimise any adverse effect of industry on other land uses.</li><li>To support and protect industrial land for industrial uses.</li></ul>	<ul style="list-style-type: none"><li>To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.</li><li>To enable a range of compatible community and leisure uses.</li><li>To maintain the industrial character of the land in landscaped settings.</li></ul>
R2 Low Density Residential	<ul style="list-style-type: none"><li>To provide for the housing needs of the community within a low density residential environment.</li><li>To enable other land uses that provide facilities or services to meet the day to day needs of residents.</li></ul>	<ul style="list-style-type: none"><li>To ensure that low density residential environments are characterised by landscaped settings that are in harmony with the natural environment of Warringah.</li></ul>
R3 Medium Density Residential	<ul style="list-style-type: none"><li>To provide for the housing needs of the community within a medium density residential environment.</li><li>To provide a variety of housing types within a medium density residential environment.</li><li>To enable other land uses that provide facilities or services to meet the day to day needs of residents.</li></ul>	<ul style="list-style-type: none"><li>To ensure that medium density residential environments are characterised by landscaped settings that are in harmony with the natural environment of Warringah.</li><li>To ensure that medium density residential environments are of a high visual quality in their presentation to public streets and spaces.</li></ul>
C2 Environmental Conservation	<ul style="list-style-type: none"><li>To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.</li><li>To prevent development that could destroy, damage or otherwise have an adverse effect on those values.</li><li>To protect and enhance the quality and character of visually sensitive areas and preserve significant natural landforms in their natural state.</li></ul>	<ul style="list-style-type: none"><li>To manage development in areas having steep sloping topography or that are subject to any potential landslide.</li><li>To manage water quality in significant water catchment areas.</li><li>To ensure that development, by way of its type, design and location, complements and enhances the natural environment in environmentally sensitive areas.</li></ul>
RE1 Public Recreation	<p>To enable land to be used for public open space or recreational purposes. To provide a range of recreational settings and activities and compatible land uses.</p> <p>To protect and enhance the natural environment for recreational purposes.</p>	<p>To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value.</p> <p>To prevent development that could destroy, damage or otherwise have an adverse effect on those values.</p>
SP2 Infrastructure	<p>To provide for infrastructure and related uses.</p>	<p>To prevent development that is not compatible with or that may detract from the provision of infrastructure.</p>

Warringah Local

Environmental Plan 2011

The Warringah Local Environmental Plan 2011 (LEP 2011) is the principal environmental planning instrument applying to the Brookvale Structure Plan study area. The relevant current planning controls under the Warringah LEP 2011 are described below.

Land Use Zoning

A number of land use zones currently apply to the Brookvale Structure Plan study area (as shown in Figure 15). These include:

- B3 Commercial Core
- B5 Business Development
- IN1 General Industrial
- R2 Low Density Residential
- R3 Medium Density Residential
- E2 Environmental Conservation
- RE1 Public Recreation
- SP2 Infrastructure

Transition to new employment zones

It is noted that the Department of Planning and Environment (DPE) intends to transition existing business and industrial zones in local environmental plans to introduce the new employment zones. The draft translation of these zones in the Warringah LEP 2011 (as exhibited by DPE) proposed for the following amendments (as they apply to Brookvale investigation area):

- Zone translation generally reflects intent of reform outlined in the Explanation of Intended Effect (EIE) with exceptions, including:
  - B1 Neighbourhood Centre and B2 Local Centre zones translating to the E1 Local Centre zone
  - B3 Commercial Core translating to the E2 Commercial Centre zone
  - B5 Business Development, B6 Enterprise Corridor and B7 Business Park zones translating to the E3 Productivity Support zone

- IN1 General Industrial and IN2 Light Industrial translating to E4 General Industrial
- B4 Mixed Use translating to the MU1 Mixed Use zone
- Land use permissibility expanded consistent with intent of the reform
- Residential flat buildings now prohibited in MU1 Mixed Use (see new Local Provision)
- Objectives amended to reflect strategic intent of zones with some changes to local objectives
- Delete Local Provision Clause 6.7 - Residential Flat Buildings not permitted at ground level - RFBs proposed to be prohibited in MU1 Mixed Use with an Additional Permitted Use layer proposed below to permit RFB's in specified locations in Dee Why

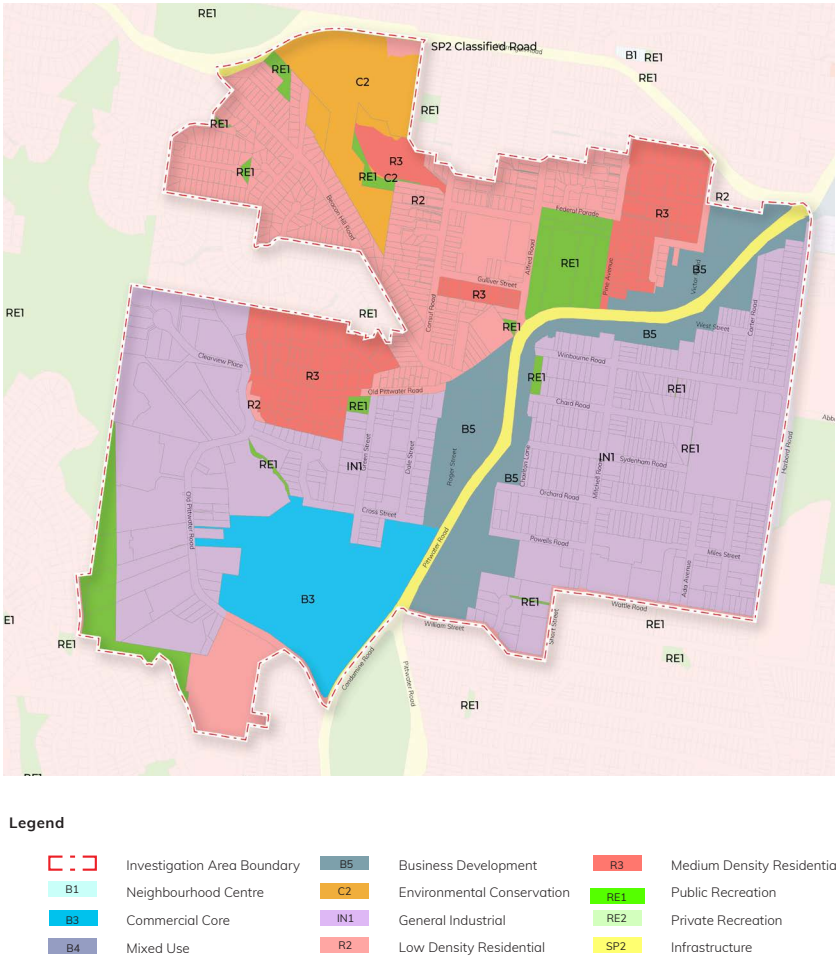
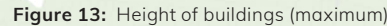


Figure 12. Land use zoning





**Figure 13:** Height of buildings (maximum)

As shown in Figure 13, the Brookvale Investigation area predominantly has a maximum building height of 11m for IN1 General Industrial and B5 Business Development zoned lands.

Areas zoned for residential (R2 Low Density Residential and R3 Medium Density Residential) and C2 Environmental Conservation have a height limit of 8.5m.

The Westfield Warringah Mall and land zoned RE1 Public Recreation have no maximum building height.

The Warringah Development Control Plan 2011 builds upon and provides more detailed provisions than the Warringah LEP 2011. All sections of the Warringah Development Control Plan 2011 apply. Part G Special Area Control also applies to the Warringah Mall site.

There is also the opportunity to review the current development standards such as parking rates, planning for freight and last mile delivery and improved sustainability requirements.

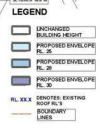
Warringah Mall is located within the investigation area. The DCP sets provisions for the shopping centre, including the surrounding land. This includes the corner of Condamine Street and Old Pittwater Road, Junction of Condamine Street and Pittwater, Pittwater road and the corner of Cross Street and Green Street. The DCP stipulates the maximum building envelopes for the Warringah Mall site as shown in Figure 14.

- The DCP stipulates design controls for quality-built form of these areas based on the following objectives:

- To ensure that new development makes a positive contribution to the streetscape and public domain.
- To ensure a high standard of architectural design.
- To achieve high quality urban design internally and externally and high levels of pedestrian comfort in the public spaces of the centre.
- To emphasise key nodes and entry points to create a sense of arrival.
- To encourage the use of high quality, durable and robust materials.
- To ensure the design response reflects the Northern Beaches vernacular/lifestyle.

The DCP identifies the following future development opportunities for 'gateways' within the Warringah Mall site:

- **Corner of Condamine Street and Old Pittwater Road:** presents the opportunity to create a built edge and strongly define the corner and reinforce the prominence of this 'gateway' site arrival point.



**Figure 14.** Warringah Mall future development envelope plan  
Source: Warringah DCP 2011



**The Northern Beaches Local Environmental Plan and Development Control Plan Review**

The Northern Beaches Council was proclaimed on 12 May 2016 by the State Minister of Local Government. This resulted in the amalgamation of Manly, Pittwater and Warringah local government areas. In accordance with this merger, the Northern Beaches Council is currently in the process of preparing a consolidated Local Environmental Plan and Development Control Plan.

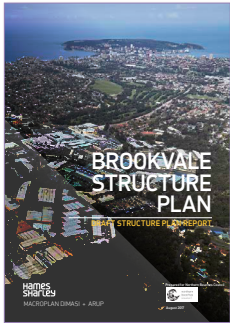
A series of technical studies have been prepared to inform the LEP and DCP review, including the publication of an LEP/DCP Discussion Paper that explores significant proposals and issues that Council needs to address and discuss. Consultation on the discussion paper was carried out between late June and early September 2021. Comments are now closed, and feedback is being reviewed and considered. The formal legal exhibition of the draft LEP and DCP is anticipated in mid-late 2022 and pending NSW Government approval the new LEP and DCP are proposed to commence in mid-2023.

**Key matters to be considered for the revised Structure Plan**

1. The current land use zoning plan limits opportunities to deliver on the intended outcomes for the future of Brookvale outlined by local strategic plans . This includes opportunities to support higher skilled employment and new housing (including affordable housing).
2. There is an opportunity to diversify land uses around the Brookvale B-line stop to promote a range of activities and to support this location becoming the natural core of activity in Brookvale centre. This may require land use zoning changes to broaden the range of permitted uses in this location (such as residential).
3. There is limited public recreation zoned lands within the core of Brookvale to support the recreational needs of residents and workers in Brookvale.
4. Future land use zoning changes of industrial and business zoned lands will need to align with the proposed employment zone reforms to be implemented across the LGA.
5. There is no applicable FSR and height limits for the Brookvale Investigation area and other parts of the LGA. This limits the ability to control scale and density of building within Brookvale. Proposed changes in land use and development outcomes may require the need for additional controls to manage density outcomes such as FSR and height of building controls.
6. There is an opportunity to increase development potential with the delivery of new public domain infrastructure, community infrastructure through development contributions.







The exhibited draft Brookvale Structure Plan 2017

The first iteration of the draft Brookvale Structure Plan was placed on hold following public exhibition in late 2017, presenting a strategic land use planning framework to guide the future development of Brookvale for the next 20 years.

The draft Structure Plan (2017) was supported by a number of reports including an Analysis Report and a Scenario Report. The Analysis Report outlined the existing context and benchmarked Brookvale against other similar centres. This information was then used to inform the Scenarios Report, which pulled together background information, the results of community consultation as well as transport, economic and demographic analysis. It also established a set of Development Principles and a Development Framework for Brookvale. The four (4) main development principles which support the Structure Plan are:

- 1. Recognise importance of Brookvale’s employment lands to the Northern Beaches;
- 2. Create green links and green destinations;
- 3. Leverage the B-line service; and
- 4. Activate the Brookvale Town Centre.

Based on the principles, development scenarios were explored with the preferred scenario for Brookvale involving a balance of employment and residential growth (60% employment; 40% housing). This was based on economic advice that residential growth was necessary to support and encourage jobs growth in the Town Centre and the adjacent industrial areas. The proposed land use and development pattern for the Brookvale under the draft Structure Plan (2017) sought to:

- support additional housing from shop top housing focused along the spine of the town centre along Pittwater Road

- support Warringah Mall expanding and be core of retail activity
- retain existing general industry zones retained at east and west end of the precinct while broadening the types of employment uses in the industrial zone
- establish green linkages and spaces to enhance amenity of the streetscape
- have existing residential zoned lands are to remain unchanged.

The key constraint at the time of the preparation of the draft Structure Plan (2017) was the capacity of the road network to accommodate additional growth. The identified road capacity limitation was based on a Transport Management and Access Study (TMAS) undertaken by GHD in 2012. Based on the TMAS, the structure plan sought to limit growth to allow an increase of 570 dwellings adopting 2.1 persons per dwelling and 1,700 jobs by 2031 (equivalent employment floorspace of 50,319 sqm).

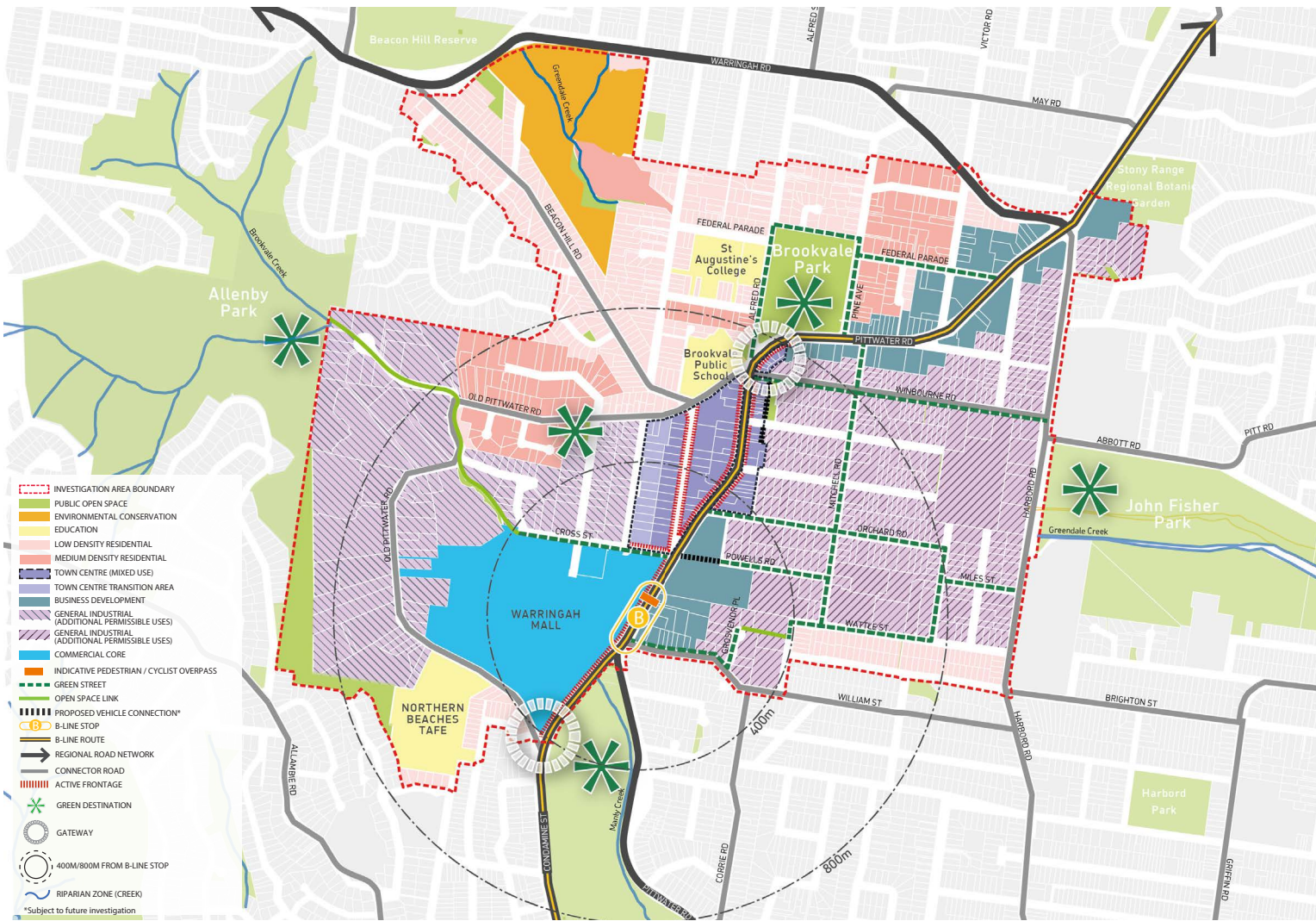


Figure 15. Draft Structure Plan Source: Hames Sharley, MacroPlan Dimasi, Arup



Stakeholder and community feedback

A total of 113 submission were received, comprising of 5 from agencies and 108 from the public during the first public exhibition.

The most common concerns centered about traffic and transport impacts, with desire to see great provision for parking. Equally submissions called for greater public transport links with a need for a trainline to assist with perceived concern for potential traffic congestion should Brookvale Town Centre be uplifted. Better cycle/pedestrian options were also requested with the possibility of a pedestrian overpass on Pittwater Rd.

Responses were mixed in relation to support or opposition to the extension of B4 zoning, with some concern noted that increased residential land use will crowd out local employment opportunities. Further increasing residential density in existing residential area was supported and provided a solution to potential conflicts in land use between the interface of residential and industrial uses.

Several requests were made to keep Amourin St outside of the investigation area and remain in the suburb of North Manly.

Other comments included increases to local green space, improvements the public domain and landscaping of Brookvale. A breakdown of the most common topics raised are identified in Table 3.

Table 3 Key topics and comments raised from public exhibition

Topic	Key Comments
Traffic and transport concerns (incl. congestion, parking, train line, overpass, pedestrian/cycle paths)	Traffic congestion
	Provide adequate parking
	Need for train line
	More safe and convenient cycle/pedestrian options
	Pedestrian overpass/underpass Pittwater Rd
	Cycle/green corridor east through to John Fisher Park and beach
	Traffic noise, including from Mall carpark
	Provision of charging stations for electric vehicles
Investigation area boundary (Amourin St)	Amourin Street remains in the suburb of North Manly and outside of the Structure Plan investigation area
Extend proposed town centre B4 zoning to other sites and/or increase building heights in B4	Make Windbourne Rd Residential/commercial
	Manly Warringah Leagues Club + B5 precinct north of Pittwater Road
Support for B4 zoning, increased residential, revitalisation and/or additional uses in IN1	Support for office uses industrial east
	No secondary height limit / transition area
Opposition to residential growth and/or increased heights	40% too high for residential and will displace opportunities for increase employment
Increase residential density in residential areas	Support for increased density at 19-29 Victor Rd & 1-9 Warringah Rd (10 properties)
Support for jobs growth and protection of industrial land	Mixed use should not encroach on employment land in Dale Street
Public domain, landscaping, visual amenity and town square needed	Public domain, landscaping, visual amenity and town square needed
Brookvale Oval – oppose redevelopment or loss of parkland, question consistency of proposals	Oppose redevelopment or loss of parkland, question consistency of proposals
	Support for Councils' vision for Brookvale Oval
Industrial and residential interface, concerns about conflict	Oppose food & drink premises in IN1 along Headland Rd, east of Harbord Rd, opposite residential
Need to provide affordable/diverse housing	Need to provide affordable/diverse housing
More parks and sporting fields	Increased population will need more green space
More educational facilities, land for a university	Greater provision for more educational facilities and land for a university

Supporting technical analysis

In response to the submissions received in 2017, additional technical analysis has been undertaken to inform the revised Brookvale Structure Plan, including:

- the Brookvale-Dee Why Transport Management and Accessibility Plan (TMAP) which includes updated traffic modelling to determine the maximum redevelopment potential of the Brookvale and Dee Why Town centres based on the traffic network with reasonable upgrades to traffic infrastructure in the surrounding area.
- updated economic analysis to understand the shift in employment growth and composition in Brookvale
- updated feasibility testing to assess the viability of mixed use development in Brookvale based on the proposed built form outcomes of the revised Structure Plan and determine the capacity to deliver affordable housing.

The following sections provide an overview of the technical analysis undertaken.





Transport  
Transport Management and Accessibility Plan 2021

Following the high proportion of public submissions received concerning traffic impacts, Brookvale Dee Why Transport Management and Accessibility Plan (TMAP) was prepared by Bitzios Consulting in 2021.

The TMAP identified a suite of transport measures to support the projected growth in population and employment of the Brookvale and Dee Why Centres up to the year 2036. Based on the traffic modelling undertaken for the preferred land use scenario, a number of road upgrade options were developed in order to allow for the surrounding road network to accommodate the expected population and employment growth. These potential upgrades were narrowed down and broken down to initial and additional capacity-based upgrades, as identified in Table 4.

A key finding of the TMAP was that if the initial upgrades (as identified in Table 4 were to be implemented, there would be capacity to support an additional population of 2,177 persons (approximately 1,037 dwellings) and 810 jobs. Should all traffic upgrades be implemented (as identified in Table 4) Brookvale would be capable of supporting an additional population of 7,258 persons (approximately 3,456 dwellings) and 2,700 jobs.

Table 4: Capacity-based upgrades for Brookvale-Dee Why

Type of upgrade	Capacity-based upgrades
Initial upgrades	<ul style="list-style-type: none"><li>Extension of the right turn bay from Warringah Road to Allambie Road</li><li>Re-allocation of the road space within Cornish Avenue to provide one westbound lane and two eastbound lanes between Willandra Road and the Caltex driveway</li><li>Installation of a peak period clearway (parking restrictions) along the southern side of Abbott Road</li><li>Upgrade Allambie Road / Rodborough Road roundabout to traffic signals</li><li>Peak period parking restrictions along the eastern side of Harbord Road</li><li>Peak period parking restrictions on both sides of Pittwater Road</li><li>Traffic signals at Harbord Road / Brighton Street.</li></ul>
Additional upgrades	<ul style="list-style-type: none"><li>Grade separation of Pittwater Road / Warringah Road / Harbord Road interchange*</li><li>Extension of the short southbound left turning lane on Willandra Road from Warringah Road to Cornish Avenue by reducing the adjacent northbound carriageway from two lanes to one lane</li><li>Installation of a new northbound left turn lane on Harbord Road between Abbott Road and Winbourne Road</li><li>Beacon Hill Road / Warringah Road intersection upgrade - Beacon Hill Road left slip lane changing to two signalised left turn lanes (Option 9.01)</li><li>Pittwater Road / Victor Road intersection signalisation.</li><li>Mid-block pedestrian crossing removal between Victor Road and Federal Parade.</li><li>Pittwater Road / Cross Street / Powells Road Extension**.</li><li>Pittwater Road / Delmar Parade AM right turn ban.</li><li>Pittwater Road / Old Pittwater Road / Winbourne Road right turn ban.</li><li>Harbord Road / Brighton Street / Amourin Street signalisation.</li></ul> <p>*Note: this is a major upgrade which remains uncertain due to the significant cost involved and reliance on decisions by State and possibly also Federal Governments.</p> <p>**Note: this upgrade is dependent on redevelopment of the Transport for NSW bus depot.</p>

Source: Brookvale Dee Why TMAP 2021 (Bitzios)

Further traffic capacity investigations

The TMAP identified that, in the interim prior to the introduction of major road upgrades such as the grade separation at the Pittwater Road / Warringah Road intersection, the Brookvale Centre could accommodate up to an additional 1,037 dwellings and 810 jobs. These findings however were based on travel behaviours of residents and employees from 2016 prior to the introduction of the B-Line service and the COVID-19 pandemic which has resulted in more people working at home. In addition, the TMAP assumed a traffic capacity threshold to support an additional 1,000 jobs in Dee Why. For feasibility reasons, it is unlikely 1,000 additional jobs will be delivered in Dee Why, with only 700 additional jobs being anticipated for this area. Based on this assumption, the balance of additional traffic capacity (equivalent to 300 additional jobs) was transferred across to Brookvale.

In this context updated analysis was undertaken to determine the potential for additional population and employment within Brookvale without causing undue traffic congestion – consistent with the approach adopted for the TMAP. A modest

10% mode shift away from private vehicles was adopted for new dwellings and jobs in the centre which is considered achievable with the introduction of reduced parking rates for the Brookvale Centre in combination with improved pedestrian and cycle connections and public transport links. It should be noted that this mode shift only applies to future residents and employees of Brookvale, with all existing users assumed to maintain current travel behaviours.

Based on the above assumptions and having regard to strategic housing target imperatives, it was considered that in the short term prior to the introduction of major traffic upgrades, Brookvale could deliver up to an additional 1,300 dwellings and 975 jobs (Scenario 7). Following the delivery of major road upgrades, in particular the grade separation at the Pittwater Road / Warringah Road intersection, additional dwellings and jobs can be achieved while at the same time maintaining an appropriate flow of traffic with the centre.

Table 5: Capacity scenarios considered

Scenario	Dwellings	Jobs	Dwellings + Jobs	Assumed mode shift away from private car	Note
1	1037	810	1847	0%	As per Bitzios findings
2	850	1110	1960	0%	No mode shift assumed however mix of employment and dwellings altered which results in identical traffic demands compared with Scenario 1
3	1037	945	1982	5%	Modest 5% mode shift away from private vehicle assumed. It would be expected this is achievable with minimal intervention given the improved public transport and pedestrian environment around Brookvale compared to the previous 2016 journey to work dataset
4	850	1240	2090	5%	
5	850	1240	2090	10%	10% mode shift achievable with introduction of reduced parking rates for the Brookvale Centre in combination with improved pedestrian connections and public transport links
6	1037	1085	2122	10%	
7	1300	975	2275	10%	Mode shift assumptions consistent with Scenario 5 & 6, however also considers additional traffic capacity (equivalent to 300 additional jobs) in Brookvale that the TMAP originally anticipated for Dee Why

Source: JMT and Ethos Urban



**Movement and connections network**

The movement network developed for the Revised Brookvale Structure Plan has the aim of creating a more permeable street network that supports access by walking, cycling and public transport. A range of transport initiatives have been identified to reduce car reliance and promote access to the B-Line stops on Pittwater Road.

In line with both Transport for NSW and Northern Beaches Council policies, the transport strategy seeks to prioritise active modes of travel (walking and cycling) above all other modes. The transport vision for the area will be targeted around an improved environment for pedestrians and cyclists, supporting access to nearby public transport nodes.

Move - Northern Beaches Transport Strategy 2038 outlines Council's overall strategy to improve transport within the LGA. One of the key objectives of the strategy is to prioritise active travel options by improving existing cycling and walking networks around the Northern Beaches. In this context improving the active transport environment around the Brookvale centre should be one of the key objectives of the revised Brookvale Structure Plan.

Potential initiatives to support this objective, include:

- Implementation of the recommendations arising from Council's 2020 Bike Plan, including new or enhanced bicycle connections along key streets such as Cross Street, Orchard Road, Pittwater Road and William Street.
- Building on the release of the Strategic Cycleway Corridor program by the NSW Government in April 2022, the Revised Structure Plan identifies Pittwater Road and Condamine Street as a key cycleway corridor that will connect Brookvale with key centres such as Dee Why, Manly Vale, Balgowlah and Manly.
- Improved pedestrian crossing and public domain facilities at two key signalised intersections on Pittwater Road – those being at Cross Street and Sydenham Road. These improvements (subject to further investigations) may include increased waiting space for pedestrians, wider crossings, upgraded public domain treatments and reduced waiting times.
- Provision of new through-site links to improve permeability within the Brookvale

Centre and reduce walking distances. This will facilitate better connections to jobs and services and reduce car reliance for residents and employees of Brookvale.

- In conjunction with a future development of the bus depot site, creation of a new street between Cross Street and Powells Road to provide for improved connectivity between the east and west of the centre. This measure would support enhanced access to Warringah Mall from the industrial area east of Pittwater Road, as well as access to the open space around John Fisher Park for residents and employees west of Pittwater Road.
- Improved walking environments and public domain treatments on key streets such as Cross Street and Dale Street to enhance pedestrian amenity and promote connectivity to the B-Line stops on Pittwater Road.
- Require (as part of future DCP controls) new development within Brookvale to provide for high quality bicycle parking and end of trip facilities such as showers, lockers and change rooms to support cycling as a mode of transport.

**Car Parking**

One of the key strategies to achieve the objective of minimising the traffic impacts arising from future development within Brookvale is the introduction of maximum car parking rates for future development. Maximum car parking rates are used to ensure that parking is not oversupplied and leaves the decisions regarding on-site supply to developers and businesses. Most maximum parking rates are set below the natural demand – i.e. fewer bays may be constructed than developers want on-site which reduces pressures arising from traffic congestion on the surrounding road network. Minimum car parking rates, which are currently in force in Brookvale, effectively force proponents and developers to provide a certain number of car spaces and provide no restriction on the overall number of spaces provided.

Similar to the Frenchs Forest town centre, where maximum car parking rates are in force for residential uses, it is recommended that DCP provisions for car parking rates are updated for Brookvale to introduce maximum rates for future residential and business uses.

In addition, similar to Frenchs Forest, requirements would be in place around the need to provide dedicated car share and electric vehicle charging parking spaces as part of new development within the centre.

**Public Transport**

The Brookvale Centre is well serviced by bus routes with a bus interchange located at Warringah Mall and the bus depot to the east of Pittwater Road. The B-Line service, which began operating in November 2017, significantly improved public transport accessibility to Brookvale. The B-Line stop is located adjacent to Warringah Mall on Pittwater Road, with services operating every 10 minutes throughout the day. As part of the B-Line program a new commuter car park was provided, located opposite Westfield Warringah Mall as part of the Brookvale Community Health Centre.

The Revised Structure Plan, through improved pedestrian links and enhanced permeability through the centre, supports access to the B-Line stops as well as other general bus stops located within the study area. Suggested improvements to signalised intersections on Pittwater Road, particularly at Cross Street, .will further support pedestrian access to public transport stops within the study area.



Economic analysis

This section describes the market potential for key land uses within the Brookvale Study Area. This analysis was undertaken for each major land use types, including residential, retail, office and industrial. For each land use, the analysis outlines:

- 1. Summary/take-outs for Brookvale:
  - a. Trends
  - b. Challenges/opportunities
- 2. Methodology
  - a. Approach to projections
  - b. How does it compare to draft Structure Plan
- 3. Projections
  - a. Table and explanation of dwelling/ floorspace projections
  - b. How does it compare to draft Structure Plan?
- 4. Recommendations
  - a. Success factors
  - b. Size and mix
  - c. Locations

It is noted that this analysis was completed in 2020.

Department of Planning and Environment, and Transport for NSW population projections have been considered. Consideration for COVID 19 and the impacts on population growth and housing demand have also been considered and have informed dwelling take up rates in the short term (the next five years).

Residential assessment

The Study Area offers substantial opportunities to create a true live work place mixed use community taking advantage of key community infrastructure such as transport infrastructure, retail facilities and employment opportunities.

The LSPS recognises the opportunity to deliver new higher density residential and mixed use development within its centres that can accommodate a diverse range of housing types with good access to services and infrastructure.

Some of the key challenges for Brookvale with regards to residential uses include:

- Brookvale will be competing with other residential centres both within Northern Beaches and within the surrounding area that have better locational attributes and amenity, such as Dee Why, Manly, Neutral Bay, North Sydney and Chatswood.

- Population growth will add additional pressure on an already constrained road network and on existing public transport.
- Managing competing land uses between industrial, commercial and residential, with each of these uses having varied requirements for access, operation and amenity.
- Providing increased housing diversity and affordable housing for key workers in order to attract and support vital services.

Methodology

Dwelling projections have been informed through an iterative process involving the design and feasibility teams as well as the market potential and projections from the NSW Department of Planning and Environment.

Overall, there is strong dwelling demand within the Total Brookvale Study Area, and changes in planning controls based on the final structure plan present an upward risk to these projections.

While the trend throughout Greater Sydney is towards smaller household sizes, it's likely that the opposite trend will occur in some areas of Brookvale due to existing low population base and an influx of new residents into these

areas following new residential developments. The exception is the Northern portion of the Brookvale Study Area, where existing residential areas exist, where the average household size is expected to decline as the population continues to age, and new residential activity is expected to be limited. A summary of the household size assumptions is highlighted in below.

These household sizes are estimates based on observed trends in terms of ageing suburbs, and the impact that new residential developments can have in an area, particularly an area with low and older population. It is noted that these household sizes are larger compared to the 1.8 average household size assumed in the previous draft Structure Plan 2017, which were considered to be too low for Brookvale upon review.

Projections

Based on current projections, by 2041 the number of dwellings within the Total Study Area of Brookvale will increase from 1,750 dwellings in 2020 to 2,510 dwellings by 2041. An increase of 760 dwellings, (see Table 7).

Recommendations

The Northern Beaches' Local Housing Strategy proposes to adopt a centres renewal framework approach to development of centres within the Northern Beaches. This framework model seeks to focus housing growth within a walkable distance of 800m, with higher density mixed residential uses ideally located at the 'core', with pockets of mixed housing in the periphery of the core. When applying its Centres Renewal Framework, the Northern Beaches' Local Housing Strategy identifies the potential additional capacity of between 840 – 1,240 dwellings in Brookvale.

It is recommended that opportunities for new higher density residential and mixed use in Brookvale iss concentrated around the B-line stop to the east of Warringah Mall and on either side of Pittwater Road but within a 400m radius. Currently, residential uses in the Brookvale area are primarily low density and therefore, present an opportunity for increased density in the longer term. Other key location drivers behind where residential may be located, include:

- Walkable and public transport accessible (800m distance as per housing study)
- Close to retail facilities
- Close to jobs
- Close to education and health facilities
- Close to amenities such as community services

Table 6 Household size assumptions, 2020 to 2041

Household Size	2020	2041
Total Study Area <sup>a</sup>	2.5	2.3
Northern Study Area	2.7	2.2
Eastern Study Area	2.0	2.1
Western Study Area	2.1	2.3
1km Investigation Area	2.7	2.5

Source: Ethos Urban  
Note: a average household size is a weighted average of dwellings within the Northern Study Area, Eastern Study Area, and Western Study Area. Analysis completed in 2020.

Table 7 Dwelling Projections, 2020 to 2041

Dwellings	2020	2026	2031	2036	2041	2020 to 2041
Total Study Area	1750	1910	2070	2240	2510	+760
Northern Study Area	1050	1170	1300	1440	1590	+540
Eastern Study Area	30	30	30	30	30	+0
Western Study Area	670	710	740	770	890	+220
1km Investigation Area	3690	3840	3990	4140	4420	+730
Growth						
Total Study Area	30	30	30	30	50	
Northern Study Area	10	20	30	30	30	
Eastern Study Area	0	0	0	0	0	
Western Study Area	10	10	10	10	30	
1km Investigation Area	60	30	30	30	60	



**Retail assessment**

With an understanding of the local resident and worker population, an estimate of the level of retail expenditure likely to be generated by the population can be determined. These estimates can then help guide the recommendation for retail floorspace and associated facilities within Brookvale.

Estimates of retail spending by study area residents have been prepared with reference to the MarketInfo retail spending model. MarketInfo is a micro-simulation model that uses a variety of data sources including ABS Household Expenditure Survey, ABS Census of Population and Housing data, ABS Australian National Accounts, and other relevant sources. Estimates of retail spending by Trade Area residents are defined within the following broad product categories:

- **Food, Liquor and Groceries (FLG)** – includes spending on fresh food, groceries and take-home liquor. This is the main category of relevance to supermarket-based shopping.
- **Food catering** – includes cafes, restaurants and take-away food.
- **Non-Food** – includes apparel, homewares, bulky merchandise, general merchandise.
- **Retail services** – includes hairdressers, beauty salons, dry cleaners etc.

Estimates of the Study Area resident total retail expenditure by category is presented in below. These are based on the application of the average per capita spending levels and the projected Study Area residential population. In addition, an allowance for real growth in average per capita retail spending has been applied that reflects long-term trends as measured by the ABS Australian National Accounts. All retail spending projections are presented in constant 2019/20 dollars.

Total spending by residents in the Total Study Area is projected to increase from \$64.4 million in 2020, to \$80.8 million in 2031. By 2041, total spending by residents is projected to increase to \$103.7 million.

The Total Study Area is expected to experience rapid rates of spending growth and this is expected to continue for the foreseeable future. In particular, FLG, non-food and retail services are projected to experience strong demand growth with an expectation from local residents that this is provided in accessible and convenient and fast growing location in close proximity to their homes, such as the Northern Study Area and future town centre.

Workers would further add to retail demand. Based on a current retail expenditure estimate of \$5 per worker being directed to retail facilities within Brookvale, this would suggest that some \$17m in additional retail expenditure could be directed to facilities within Brookvale from local workers (13,950 workers at \$5/day, 5 days/week and 48wks/year.) This is the equivalent of an additional 26% over and above the retail expenditure generated by residents.

**Summary/ take-outs for Brookvale**

A key feature of the retail landscape in Brookvale is Warringah Mall in the Western Study Area accounting for the majority of retail floorspace and retail services within the Total Study Area and being the largest retail destination within the Northern Beaches Council area and serving a large proportion of the North Shore of Sydney. The evolving landscape scene will see regional centres such as Warringah Mall expand their offering towards more greater retail experience and become more mixed-use.

As identified in the previous Structure Plan, Brookvale is a ‘one stop shop’ for the region,

and draws strong demand for local retail, bulky goods, building supplies and automotive repairs.

Trends such as emergence of café culture, food centres and experience dining, and online food delivery services (dark kitchens) is changing the types of retail spaces demanded. For the former, high amenity and high quality spaces are sought that have good pedestrian access, while in the latter, amenity and location are less critical, with factors such as lower rent and land values and access to major roads being more important. Other retail trends are the presence of microbreweries, a gin distillery, boutique gyms, and even a French bistro.





Methodology

The methodology applied in this report differs from the methodology applied in the previous Structure Plan. The previous Structure Plan estimated floorspace demand using worker projections; however, taking into account changes in the broader retail landscape and following a review of the current retail landscape within Brookvale, as well as the population serving function of retail, a retail expenditure by residents and local workers was determined to be more appropriate. This approach looks at the

demand for retail floorspace by residents and workers. It uses projected residential and local worker retail expenditure and assumed market shares to estimate supportable retail floorspace.

Assumptions for each broad retail product category are listed in below. Assumed market shares are based on industry benchmarks. The increase in the share of food catering experience reflects the expectation of Brookvale’s future retail environment. The share of retail expenditure from outside the Total Study Area is assumed to also capture spending by

workers who live outside the Study Area. This has been calculated assuming an average spend of \$10 per worker over an average of 240 working days per year and assumes the increase in worker expenditure within the region as the retail amenity improves along with a transition of the workforce towards more knowledge based workers who will associate more strongly with retail facilities during their lunchtimes as well as before and after work.

Table 8: Retail Expenditure Projections by 2041 (in constant 2019/20 dollars)

Retail Category	2020	2026	2031	2036	2041
Total Study Area					
FLG	\$25.2m	\$27.4m	\$29.5m	\$31.6m	\$35.5m
Food Catering	\$10.4m	\$11.5m	\$12.5m	\$13.5m	\$15.4m
Non-Food	\$26.2m	\$30.8m	\$35.4m	\$40.4m	\$48.5m
Services	\$2.6m	\$3.0m	\$3.4m	\$3.8m	\$4.4m
Total Retail	\$64.4m	\$72.8m	\$80.8m	\$89.3m	\$103.7m
Northern Study Area					
FLG	\$16.8m	\$18.2m	\$19.5m	\$20.9m	\$22.0m
Food Catering	\$6.9m	\$7.5m	\$8.2m	\$8.8m	\$9.4m
Non-Food	\$17.5m	\$20.4m	\$23.4m	\$26.7m	\$30.1m
Services	\$1.8m	\$2.0m	\$2.3m	\$2.5m	\$2.8m
Total Retail	\$43.0m	\$48.2m	\$53.3m	\$58.9m	\$64.4m
Eastern Study Area					
FLG	\$0.2m	\$0.2m	\$0.2m	\$0.2m	\$0.2m
Food Catering	\$0.1m	\$0.1m	\$0.1m	\$0.1m	\$0.1m
Non-Food	\$0.3m	\$0.3m	\$0.3m	\$0.3m	\$0.4m
Services	\$0.0m	\$0.0m	\$0.0m	\$0.0m	\$0.0m
Total Retail	\$0.5m	\$0.5m	\$0.6m	\$0.6m	\$0.7m
Western Study Area					
FLG	\$8.1m	\$9.0m	\$9.7m	\$10.4m	\$12.6m
Food Catering	\$3.5m	\$3.9m	\$4.2m	\$4.6m	\$5.6m
Non-Food	\$8.4m	\$10.0m	\$11.6m	\$13.3m	\$17.2m
Services	\$0.8m	\$1.0m	\$1.1m	\$1.2m	\$1.5m
Total Retail	\$20.9m	\$23.9m	\$26.6m	\$29.6m	\$36.9m
1km investigation Area					

Retail Category	2020	2026	2031	2036	2041
FLG	\$58.5m	\$60.9m	\$62.9m	\$64.9m	\$68.9m
Food Catering	\$22.8m	\$24.1m	\$25.1m	\$26.2m	\$28.1m
Non-Food	\$64.0m	\$72.0m	\$79.3m	\$87.4m	\$99.1m
Services	\$6.2m	\$6.8m	\$7.3m	\$7.8m	\$8.6m
Total Retail	\$151.5m	\$163.7m	\$174.6m	\$186.3m	\$204.8m

Source: Marketinfo; Ethos urban  
Note: analysis completed in 2020



Projections

Following the methodology outlined above, the additional demand is estimated for each retail product category up to 2041 (see Table 10). The table indicates that by 2041, there will be additional demand of 7,940 m² of retail floorspace.

As recommended by the SGS (2020) Employment Lands Study, future expansion of Warringah Mall should interact with the future town centre. This will facilitate greater pedestrian movement within Brookvale, Warringah Mall and a future town centre, and improve accessibility and amenity for residents and workers.

The previous Structure Plan estimated provisioning of an additional 21,642 m² of retail floorspace by 2031, while the SGS (2020) Employment Lands Study has identified a gap of 8,500 m² by 2036. The figures in this report are more closely aligned with the SGS (2020) Employment lands Study and reflect how the retail landscape has changed since the previous Structure Plan was undertaken.

Table 9: Retail Spending Assumptions

Product Category	Retail expenditure		Share of spending retained in Total Study Area		Average turnover (\$m)	Worker expenditure	
	2020	2041	2020	2041		2020	2041
FLG	\$25.2 m	\$35.5 m	75%	75%	\$7,500	\$5.8 m	\$12.4 m
Food Catering	\$10.4 m	\$15.4 m	50%	70%	\$7,500	\$17.0 m	\$36.4 m
Non-Food	\$26.2 m	\$48.5 m	80%	80%	\$5,500	\$5.4 m	\$11.6 m
Services	\$2.6 m	\$4.4 m	80%	80%	\$5,500	\$5.8 m	\$12.4 m
Total Retail <sup>a</sup>	\$64.4 m	\$103.7 m	73%	77%	\$7,500	\$34.0 m	\$72.7 m

Source: Ethos Urban  
Note: a. allows for 25% worker expenditure. b. figure is weighted average of each broad retail product category by spending. Analysis completed in 2020

Table 10: Estimated additional retail demand, 2020 to 2041, Total Study Area

Type	2026	2031	2036	2041
FLG	330 m²	620 m²	920 m²	1,480 m²
Food Catering	280 m²	570 m²	900 m²	1,390 m²
Non-Food	980 m²	1,930 m²	2,980 m²	4,670 m²
Services	90 m²	170 m²	260 m²	400 m²
Total Retail	1,670 m²	3,290 m²	5,060 m²	7,940 m²

Source: Ethos Urban  
Analysis completed in 2020





Recommendations

The key location drivers behind where retail should locate is the following:

- Clustering benefits are considered important for retail facilities due to a critical mass of tenants and uses creating a retail destination and community hub, with a range of uses and facilities provided in a single location and encouraging increased foot-traffic, longer 'dwell' times and increased expenditure.

- Access to transport determines the accessibility of retail facilities to a broad range of customers. The more accessible a retail facility, the greater its pool of potential customers.
- Walkable distance to workers defines the worker catchment and the ability for workers to access retail services during lunch time or before or after work.
- High exposure and high traffic areas is considered important for retail facilities to attract turn in generating customers from passing trade.

From the above, it is clear that the majority of retail uses should locate within 400 metres of the Warringah Mall, B line bus stop and in a future Town Centre in Brookvale, should the Town Centre be located on the existing Bus Depot or Roger Street (both within 400m of Warringah Mall and the B-line).

A number of vacancies along Pittwater road indicate that these retail uses are no longer suitable for Pittwater Road, with most of these retail uses better suited in the future town centre. As noted in the SGS (2020) Employment Lands Study, this retail corridor needs to re-invent itself and consider other retail uses that do not directly compete with Warringah Mall. Examples of viable uses include car dealers, specialist retail and home renovation or construction related showroom retail functions, and online food delivery ('dark kitchens'). By providing these uses along Pittwater Road will also mean less competing pressures for these uses in the industrial areas.

Below summarises supportable locations for each of the retail types.

Table 11: Locations for retail

Type	Indicative floorspace	Recommended Location	Recommendations
Total Study Area			
FLG	1,480 m²	Warringah Mall and adjoining	Warringah Mall should retain its function as providing food, liquor and grocery retail floorspace given it contains the majority of retail provisioning in Brookvale. Retail should also be located such that it opens up Warringah Mall to the surrounding area and a future town centre. This will improve access and amenity for residents and local workers.
		Future town centre – ground level	Retail provisioning will need to be provided at the future town centre. Consider potential for small convenience-based supermarket located at the future town centre.
Food Catering	1,390 m²	Warringah Mall and adjoining	Food catering floorspace provisioning should be retained in Warringah Mall but should greater access to local residents and local workforce.
		Future Town centre – ground level	Cafes and restaurant should be located at street level within future town centre to activate street level and encourage night time economy.
		Eastern industrial precinct Micro-brewery cluster	Potential micro-brewery and opportunity to grow a night time economy precinct.
Non-Food	4,670 m²	Pittwater Road; other arterial roads	Gyms, car showrooms, and bulky goods retail should be located along Pittwater road, and other arterial roads within the Study Area. Bulky goods floorspace is likely to be displaced by a new town centre if it is located on the western side of Pittwater Road. Potential to support non-food retail within mixed use developments that may occupy ground level.
Retail Services	400 m²	Warringah Mall and adjoining	Retail services should be located adjoining existing Warringah Mall to create better integration with surrounding land uses and future town centre.
		Pittwater Road	Limited opportunities given current vacancies and low demand with low levels of passing foot traffic due to low amenity of Pittwater Road.

Source: Ethos Urban    Analysis completed in 2020



Commercial assessment

Summary/take-outs for Brookvale

Brookvale has the potential to provide more commercial floorspace with its position on Pittwater Road functioning as a strategic gateway into the rest of the Northern Beaches. It is in a prime position to draw from high skilled workers that want to live on the Northern Beaches but don't want to commute into the city, and from businesses that want to co locate close to Brookvale's industrial areas. While recent commercial developments within Brookvale have been successful (e.g. the Lifestyle Working development in the eastern industrial precinct) but such developments have been in traditional industrial areas and as such raise concerns about potential land use conflicts and depletion of industrial lands.

A key success factor, as noted in the SGS (2019) Employment Lands Study is the provision of high amenity and flexible office space to attract commercial demand away from commercial centres such as Manly, Balgowlah and Dee Why. In particular, through appealing to local businesses. High levels of worker amenity and worker services

will be important factors in attracting high skilled workers. While future provisioning of commercial floorspace will need to be balanced against already existing vacancies within the Total Study Area. To that end, the SGS (2019) Employment Lands Study recommends a staged approach to commercial office development.

However, there are a number of challenges currently faced by Brookvale. The SGS (2019) Employment Lands Study has identified that Brookvale has high commercial rents at \$636 per m² in August 2019, while this is below rents in Manly at \$854 and Balgowlah at \$658, it also has the highest commercial vacancies. The high rents and high vacancies is likely due a combination of lower quality floorspace available, and constrained supply of high quality floorspace. As such, it indicates that while demand for commercial space is strong within the Total Study Area, there is currently inadequate provisioning of the right kind of office space.

Ultimately, the success of commercial office floorspace within Brookvale, will depend on its ability to draw commercial office workers away from centres such

as Manly. Manly has a number of unique advantages over Brookvale: high amenity, cosmopolitan atmosphere with night time economy and lunch time recreation, accessibility to Sydney CBD via the fast ferry.

Methodology

A similar approach to the previous Structure Plan has been adopted in this report. The approach to estimated commercial floorspace demand has used commercial employment projections and a floorspace ratio of 28.0 m² per office job, which is based on the previous Structure Plan.

Table 12: Commercial floorspace ratios

Type	2020	2041
Commercial	25.0	25.0

Source: previous Structure Plan; Ethos Urban; Industrial benchmarks  
Note: Analysis completed in 2020

Projections

Commercial floorspace demand is expected to increase in the order of 60,600 m² by 2041. The previous Structure Plan identified additional floorspace of 4,428 m² by 2031. While the SGS (2019) Employment Lands Study suggest demand for an additional

13,704 m² of commercial space by 2036. The differences between these results reflects the assumed role and function adopted in this report for Brookvale as a knowledge intensive employment centre within the Northern Beaches.

Table 13: Commercial floorspace demand, 2020 to 2041

	2020 (estimate)	2041	Change (2020 to 2041)
Total Study Area	81,880 m²	142,480 m²	+32,460 m² to +60,m²

Source: Ethos Urban; TfNSW  
Note: Analysis completed in 2020

Recommendations

The overwhelming bulk of commercial office floorspaces is in the traditional office buildings, in podium levels and in mixed use developments. In general, dedicated office space is occupied by a range of professional, personal, community services or coworking spaces, which do not require high levels of exposure to passing customers.

Commercial office locations tend to be driven by the need to access high skilled workers, and as such, locate in areas in which high skilled workers want to work. High skilled workers require areas that are of high amenity, accessible to public transport, in walking distance to worker services, including food and non food retail, and places to eat lunch, and engage in recreation. Other factors are driven by business needs: benefits of locating in existing commercial clusters, ability to meet with clients and able to be access to clients.

In addition to commercial office floorspace, a small proportion of commercial floorspace would be allocated to non-retail shopfronts including real estate agents, tax agents, solicitors and the like. Typically this is around 10 to 20% of retail floorspace provisioning, which is estimated to be at 1,000 m².

Below summarises locations for different commercial types. As per the SGS (2019) Employment Lands Study, it is recommended that commercial office activity into one core area and not allow it to spread into industrial lands.

Table 14: Recommended locations for commercial uses

Type	Indicative floorspace	Recommended Locations	Comment
Total Study Area			
Commercial office	59,400 m²	Future town centre or commercial core (within 400 metres of B-line and Warringah Mall).	The success of non-shopfront office depends on the ability to attract knowledge workers to Brookvale. The key competing centre for Brookvale is Manly. Will require share of office space that is flexible and of high amenity for start ups and co-working. As recommended by the Employment Study (p.202), consideration should be given to relocating the Library and other community infrastructure to the future town centre
		Pittwater Road (within 400 metres of B-line and Warringah Mall)	Office space could be accommodated along Pittwater road, in mixed use developments with ground floor retail or show rooms provided it adjoins the future town centre or commercial core.
Shopfront office uses	1,200 m²	Future town centre; Warringah Mall	Commercial spaces in this area should provide flexible spaces to accommodate population services.

Source: Ethos Urban  
Note: Analysis completed in 2020



Industrial lands assessment

Summary/take-outs for Brookvale

Brookvale has an established industrial offering with two major industrial precincts separated by Pittwater Road. There is a noticeable difference in the character of these precincts, with the eastern industrial precinct containing high impact and heavy industry and manufacturing, while the western industrial precinct tends to have lower impact and higher order industrial uses. Both precincts are successful in terms of activity and employment, and a number of clusters and specialisations have emerged or are emerging. These are:

- Emerging brewery scene in the eastern industrial precinct;
- Home construction and renovation cluster along Pittwater Road and Winbourne Road;
- High technology industries such as software designs and film production that have located in commercial office space that is unable to accommodate stand alone office tenants under current zoning in the Western Study Area; and
- Car show rooms have concentrated on both sides of Pittwater Road near Warringah Road.

Rents within Brookvale’s industrial lands are quite low within the Northern Beaches as reported in the SGS (2019) Employment Lands Study. In August 2019, Brookvale saw rents for industrial vacancies averaging \$278 per m², above places such as Cromer (\$237 per m2) and Frenchs Forest (\$235 per m²) with well below Freshwater (\$547 per m²) and Narrabeen (\$421 per m²) (SGS, 2019, Employment Lands Study, p. 123). Increases in industrial land values have been the sharpest in Brookvale, with prices per m² doubling, as indicated by SGS (2019) Employment Lands Study, this could be due to demand but also land speculation. While high rents are an indication of economic viability, if allowed to rise too high, they can force out businesses and stifle emerging start ups, and they can also indicate other underlying problems. Indeed, as reported by the SGS (2019) Employment Lands Study, there is currently a mismatch between current industrial provisions and what tenants require, with 60% of vacant floorspace being dated and in need of refurbishment, with inadequate facilities or amenities to satisfy modern tenant requirements. This, coupled with low rents, makes refurbishment of some this stock unfeasible for owners.

Brookvale has the locational attributes required for a successful industrial precinct: positioned in the gateway to the Northern Beaches, either side

of a major arterial road, extensive quantum of industrial floorspace and land, and diverse mix of uses. This location has meant that Brookvale’s industrial precincts have become an important part of the Northern Beaches supply chain, with the SGS (2019) Employment Lands Study reporting that many trade based businesses have supply chains almost exclusively in the Northern Beaches’ industrial precincts and even solely in Brookvale.

An opportunity for Brookvale’s industrial precincts is to support emerging advanced manufacturing and high technology automated industrial operations. The composition of the workforce is expected to change with a shift towards highly skilled white collar jobs and fewer blue collar jobs as more manual functions are automated. As such building configurations will need to adapt and change to accommodate the needs of these modern industrial businesses including higher ceiling heights for automated equipment and more high amenity work spaces to support attraction of high skilled workers. Investment in renewal of industrial built form will be necessary along with maintaining clear messaging around the policy position of ‘retain and manage’ industrial lands to prevent speculation

Methodology

A similar approach to the previous Structure Plan has been adopted in this report. Estimations of future demand for industrial land has been calculated using industrial land employment projections against industrial floorspace ratios. Employment projections for industrial uses is projected to decline; however, offsetting this is the likelihood for increasing floorspace ratios due to technological changes within the businesses operating in industrial lands. For example, automation may result in more space needed for machinery but a reduction in the number of workers required to operate that machine, this would result in higher floorspace ratio. At the same time, and as noted above, the composition of this workforce is changing, with more white collar jobs and fewer blue collar jobs.

Table 15: floorspace ratios in industrial lands

Heading	2020	2041
Floorspace ratio	75.0	80.0

Source: previous Structure Plan; Ethos Urban; Industrial benchmarks  
Note: Analysis completed in 2020

Projections

Taking the above approach, industrial floorspace demand has been estimated for 2041 (see below). The previous Structure Plan identified an additional 3,188 m² of additional floorspace by 2031.

Table 16: Industrial floorspace demand, 2020 to 2041

Study Area	2020	2041	Change (2020 to 2041)
Total Study Area	378,690 m²	533,900 m²	+155,210 m²

Source: Ethos Urban; TfNSW

Notes: floorspace ratio in 2020 is 75.0 and expected to increase slightly to 80.0 by 2041. Analysis completed in 2020



Recommendations

The location criteria for industrial activity is as follows:

- Within existing business clusters, such as construction and home renovation, automotive repairs and car showrooms, printing industries, and micro-breweries.
- Access to Sydney's road network provides access to customers and businesses who will typically visit industries by private vehicle and to facilitate transport of raw goods and intermediate products to industries, and transportation of finished products to other businesses.
- A way from other uses such as retail, residential and commercial when the impact to surrounding land uses is high and cannot be controlled

through building design. For instance, in the case of 24/7 operations.

- Proximity to higher levels of amenity to attract high skilled workers for higher order industrial uses and activities requiring higher skilled workers (e.g. advanced manufacturing).

In addition, industrial uses can be distinguished by their impact to surrounding land uses and this can affect where they locate.

Low impact industries can be located near retail, residential and commercial and even within the same location as other uses, while high impact industrials should be located further away so as to minimise impacts to surrounding issues that can be generated through noise, emissions etc.

Table 17 summarises the locations for various types of industrial uses. Note that the breakdown of uses within the industrial category is difficult to determine as this depends on future Council and Government policies and initiatives (such as financial support for advanced manufacturing uses); however the below table outlined the types of uses that could be considered supportable at Brookvale in the future.

Table 17: Recommended locations for industrial activities

Potential uses	Recommended locations	Comment
Advanced manufacturing	Within 400 metres of B-line western industrial precinct and proximity to Warringah Mall. Will require ancillary office space.	Accommodating new technology in manufacturing will require new high quality spaces that are a mix of commercial and industrial with access to amenity. Consider links to education services and existing TAFE NSW and any future education facilities. These uses could be located in either industrial precinct but preferably in western industrial precinct to provide higher amenity environment, ancillary office, and access to retail and worker services.
Beverage and tobacco product manufacturing	Eastern industrial precinct; along Pittwater Road. Proximity to B-line would also be beneficial but not as critical.	Microbreweries already locating in eastern industrial area. Consider spaces adjoining these locations, in the north west corner near Pittwater Road.
Medical equipment manufacturing	Within 400 metres of B-line western industrial precinct and proximity to Warringah Mall. Will require ancillary office space.	Recent government policy stances, and the recently completely Northern Beaches Hospital provides opportunity to establish a medical equipment manufacturing cluster within Brookvale. This would be most suited to the western industrial precinct due to this precincts ability to attract higher skilled workers. Consider links to education services and existing TAFE NSW and any future education facilities.
Urban services	Eastern and western industrial areas; along Pittwater Road	Locate within industrial areas and in areas of high traffic and visibility
Light industry/ Low impact industry	Multiple locations but preference for western industrial area and adjoining residential and commercial uses such as at a future town centre; along periphery of heavy industrial areas to create a buffer (e.g. Wattle Road, where industrial uses are already locating on residential side.)	Low impact industrial uses can act as a buffer to other uses (e.g. between heavy industry and residential or retail uses). Consider blending with residential and commercial office spaces.

Source: Ethos Urban



**Health, Education and Other  
Summary/take-outs for Brookvale**

Within the Total Study Area, there are a number of Health Care and Education facilities and a range of ‘Arts and Recreation Services and Other Services’. These facilities tend to be population serving; however, both health and education facilities can also be driven by State Government, local councils and major investors or land owners. In this case, these facilities tend to service a regional population rather than just the local population. Examples would include major hospitals and university campuses. Within the Northern Beaches, other areas will remain the focus for these types of facilities including Frenchs Forest for Health and Education. However, a proportion of smaller health and educational facilities could be accommodated within Brookvale as outlined below.

Existing health care services are limited to a number of facilities along Pittwater Road in the Eastern Study Area next to the B-line bus stop, and in Western Study Area around Dale Street. The most notable education facility is Northern Beaches TAFE to the south of Warringah Mall and a number of primary and secondary schools. ‘Other Services’, which defines a broad range of industries, are fairly evenly distributed throughout the Total Study Area. With the exception of the TAFE, these facilities are primarily servicing the local catchment and are unlikely to play a significant regional role.

The recently completed Northern Beaches Hospital will provide health services throughout the Northern Beaches and beyond, and will be an important attractor for health care services and related education services. The extensive provision at Frenchs Forest will limit the amount likely to be provided at Brookvale in the longer term. As such, there is limited capacity to expand these services other than through responding to a growing population.

Council should consider engaging with a university or education provider to establish a campus that could be co-located with the existing TAFE, and focus on providing education services that can enhance Brookvale’s industrial role. In areas such as advanced manufacturing, medical equipment manufacturing and technologies such as 3D printing.

Consideration should also be given to providing entertainment and civic facilities, social infrastructure, and public space in the future town centre. This will establish the centre, create amenity and act to ‘pull’ retail and commercial uses from other centres. As recommended by the SGS (2019) Employment Lands Study, and as noted above, consideration should also be given to relocating the library and co-locating a multifunction community centre along with any other regional level community recreation and creative infrastructure to help in providing the needed critical mass to create a true mixed use and vibrant centre that does not compete with Warringah Mall in its role and function.

**Methodology**

A similar approach to the previous Structure Plan has been adopted in this report. Floor-space ratios have been used to estimate the average floorspace provision per worker across three land use types: education, health care, and other services. These floorspace ratios have then been applied to ANZSIC industry employment projections to calculate projected floorspace demand in 2041.

**Table 18: Education, Health Care and Other Services Floorspace ratios**

Type	2020	2041
Education	25.0	25.0
Health Care	25.1	25.1
Other services	30.1	30.1

Source: Structure Plan; Ethos Urban; Industrial benchmarks. Analysis completed in 2020



Projections

Using the methodology outlined above, the following floorspace estimates have been calculated for 2020 to 2041 (see below). These floorspace estimates indicate an additional +5,050 m<sup>2</sup> of educational facilities could be provided, an additional 6,430 m<sup>2</sup> of Health Care, and 10,410 m<sup>2</sup> of Other Services. As noted above, major education and health facilities such as a university, school or hospital are unlikely to be supportable within Brookvale due to the proximity to

Frenchs Forest and are not factored into the floorspace estimates below. Compared to the previous Structure Plan, these floorspaces estimates are larger, with the previous Structure Plan estimating additional floorspace of 3,224m<sup>2</sup> for Education, 4,086m<sup>2</sup> for Health Care, and 1,385m<sup>2</sup> for Other Services by 2031. This difference is due to higher population growth assumed in this report.

Table 19: Demand for Education, Health Care, and Other Services floorspace

Category	2020	2041	Change (2020 to 2041)
Education	15,410 m <sup>2</sup>	20,460 m <sup>2</sup>	+5,050 m <sup>2</sup>
Health Care	19,580 m <sup>2</sup>	26,010 m <sup>2</sup>	+6,430 m <sup>2</sup>
Other Services	31,720 m <sup>2</sup>	42,130 m <sup>2</sup>	+10,410 m <sup>2</sup>

Source: Ethos Urban; TfNSW  
Note: Analysis completed in 2020

Recommendations

The key location criteria for each of these industries is outlined below:

- Walking distance from the B-line bus stop, and retail services.
- Near existing clusters, for instance, in health or education precincts or adjacent to other health or education facilities.

Further consideration should be given to collocating education facilities near the existing TAFE. As recommended in the draft Structure Plan, education services could be tied to industries within the Total Study Area and the existing schools and TAFE. This would enable local students to gain the necessary skills in the high skilled industries of tomorrow within the Study Area. Consideration should be given to connecting the future town centre and Warringah Mall with the Northern Beaches TAFE.

Table 20: Education, Health Care and Other Services locations

Type	Indicative floorspace	Detailed breakdown	Recommended locations	Comment
Education	nil	Primary and secondary schools	nil	Limited prospect for primary or secondary schools with decisions to expand based.
	5,680 m <sup>2</sup>	Adult, Community and Other Education	400m of B-line; Future town centre; podiums along Pittwater Road; Northern Study Area; adjoining TAFE NSW.	Can be accommodated in flexible commercial spaces.
Health Care	7,000 m <sup>2</sup>	Health facilities and GP services.	Future town centre; adjoining existing medical centres within one block; other locations along Pittwater Road	Can be accommodated in flexible commercial spaces.
	nil	Hospitals	nil	Limited scope for a hospital given Northern Beaches Hospital
Arts and Recreation Services and Other Services	6,850 m <sup>2</sup>	Creative and Performing Arts Activities; Sports and Recreation Activities	Industrial areas; along Pittwater Road; commercial core	Leverage off emerging creative cluster. Gyms and other fitness activities can be located along Pittwater road and in flexible commercial and retail spaces.
		Repair and maintenance services	A number of Other Services, such as, repair and maintenance services should be located in existing industrial areas and along Pittwater Road	Leverage off existing showroom cluster along Pittwater Road.
Entertainment facilities; community infrastructure; civic facilities and public spaces	Limited additional space	Repurposing of existing uses for destination entertainment/ community facilities.	Future town centre; Pittwater Road	These facilities will be important in aligning any future town centre with Brookvale's 'heart'

Source: Ethos Urban  
Analysis completed in 2020

Summary and future vision for Brookvale

Based on the above, there are a range of key conclusions and opportunities for Brookvale. In the first instance, Table 21 presents a SWOT analysis that effectively highlights the key considerations for the future development of Brookvale. A summary of the key recommendations for Brookvale is presented in Table 22.



Table 21: SWOT Analysis

Measure	Residential	Retail	Commercial	Industrial	Health and Education
Strengths	Excellent access to CBD and broader Northern Beaches via B-line Strong mix of uses and amenities available within the precinct including strong retail and community services at Warringah Mall	Strong regional draw from Warringah Mall Critical mass of retail facilities and tenants Easily accessible, well located and high-profile precinct Excellent access to broader Northern Beaches via B-line Leverage off high passing traffic volumes along Pittwater Road	Excellent access to CBD and broader Northern Beaches via B-line Strong mix of uses and amenities available within the precinct including strong retail and community services at Warringah Mall Scale of the precinct Success of existing modern commercial office uses create precedent	Already the largest concentration of industrial facilities on the Northern Beaches Diverse range of businesses within the precinct currently, and growing. Future occupiers such as ecommerce and microbreweries already establishing in the area High-profile and central location to serve Northern Beaches and Sydney's North Shore	High-profile and central location Growing population Critical mass of existing facilities (i.e. Northern Beaches TAFE; several schools and medical centres). Medical centres on either side of Pittwater Road currently.
Weaknesses	Limited housing diversity with few medium to high density opportunities Limited residential offering around key amenities and transport hubs (B-line) Traffic impacts and areas of low amenity	Critical mass of retail concentrated in Warringah Mall only Limited amenity for retail along Pittwater Road Traffic congestion during peak periods Retail clustering and access east and west impacted by busy Pittwater Road Existing vacancies and dated retail offer along Pittwater Road	Large provision of older commercial stock Older facilities suffering from longer term vacancies Traffic congestion and impacts No clear commercial core for business clustering	Large, legacy uses and more intensive operators still present (i.e. concrete batching plants). The majority of facilities are dated and in need of refurbishment Modern operators and tenants may not find suitable facilities, as they have specialised requirements (i.e. additional height, access). Congested road networks during peak periods. Traditional manufacturing declining and substantial investment required for evolutionary shift to new industries	Population spread over a relatively extensive area, meaning less reliance on walkability Traffic congestion and impacts

Measure	Residential	Retail	Commercial	Industrial	Health and Education
Opportunities	Ability to add residential development in underutilised, centrally located precincts within Brookvale Creation of mixed use town centre with medium to high density residential allowing increased housing diversity Leverage SCentre Group plans for redevelopment Position Brookvale for the future as a true mixed use, live/work/play destination (embracing trend towards working from home and flexible work arrangements)	Repurposing and refresh of facilities along Pittwater Road to more suitable retail facilities (i.e. showrooms) Ability to create new retail precinct within mixed-use town centre to reactivate Brookvale Embrace emerging trends and uses such as technology, ecommerce and specialised retail including micro-breweries, omni-channel retailing and 'click and collect' type functions.	Ability to create commercial precinct without legacy structures or issues Re-imagine Brookvale to accommodate shifting customer and tenant requirements and become the precinct for 'new commercial' uses Align commercial uses with the local demographic Seamless integrations with other industrial and retail uses Leverage growth and access to become true live/work/play precinct Build on success of Lifestyle Centre to support co-working and satellite office hubs	Leverage off population growth and growing high skilled workforce Build on success of Woolworths 'dark store' to support ecommerce uses Embrace new technology operators and businesses - best positioned precinct to serve Northern Beaches in the future Align industrial uses with the local demographic Explore new employment and building materials to limit impact of competing uses and form true live/work/play precinct	Ability to create new precinct and services within future town centre Leverage off growth of high skilled industrial uses (e.g. advanced manufacturing); Re-imagine health and education in the post-COVID-19 environment (i.e. more virtual and technology connectivity).
Threats	B-line reaches capacity and impacts amenity Traffic generation impacts potential Developed focused in other mixed use centres currently that are closer to the beach and lifestyle benefits (e.g. Dee Why, Manly) Managing competing land uses between future town centre, commercial and industrial uses	Warringah Mall continues to develop in isolation rather than together with Brookvale and future town centre Critical mass of emerging retail technologies and businesses are established elsewhere within Northern Beaches Pittwater Road amenity further impacted by 24hr bus lane and reduced access	Timeframe for change and development means that other centres start to serve the role for 'new commercial' uses Ability to achieve enough critical mass and clustering to support viable businesses Traffic impacts, or B-line congestion impact amenity Managing competing land uses including transition to industrial and residential	High cost and requirements associated with transforming the industrial areas Shift to technology and modern tenants results in high skilled workers but less overall employment opportunities Time taken to implement changes results in missed opportunity Managing competing land uses particularly residential	Majority of major health facilities will be in Frenchs Forest around Northern Beaches Hospital precinct Traffic impacts, or B-line congestion impact amenity
Growth Potential	✓✓	✓	✓✓	✓✓✓	✓

Source: Previous Structure Plan; SGS (2019) Employment Lands Study; SGS (2020) draft Housing Strategy; Ethos Urban Note: Analysis completed in 2020



Table 22: Preliminary recommendations for Brookvale

	Residential	Retail	Commercial	Industrial	Health, Education and Other
Indicative dwellings/floorspace (2041)	+760 dwellings (with scope to investigate additional housing between 840-1240 dwellings based on Local Housing Strategy)	+6,350 m <sup>2</sup>	+60,600 m <sup>2</sup>	+155,210 m <sup>2</sup>	Education: +5,050 m <sup>2</sup> Health Care: +6,430 m <sup>2</sup> Other Services: +10,410 m <sup>2</sup>
Locations and composition	Moderate growth overall. Medium to high density in future town centre and within 400m of B-line. Low-scale infill and medium density within the greater 1km investigation area. Consider residential as part of redeveloped Warringah Mall.	Majority focused within the future town centre. Some additional and redeveloped retail floorspace in an expanded Warringah Mall. Opportunity to re-imagine retail uses along Pittwater Road to create critical mass and unique point of difference – i.e. showrooms. Indicative retail mix could include: Food, cafés and dining on the ground floor and podium levels of the town centre. Point of difference from Warringah Mall and appeal to night-time destination and increased activation will be important. Limited major tenant floorspace – potential for convenience based supermarket in future town centre forming part of the mixed use development. Showrooms, bulky goods and non-food uses along Pittwater Road. Tenants that benefit from traffic flow and visibility but not reliance on high pedestrian traffic. Destinational tenants and attractions/ experiences. Could include non-retail uses such as cooking schools, entertainment and community facilities etc.	Moderate amount of commercial office floorspace focused in a commercial core, potentially within or around the future town centre. Easy walking distance to B line (500m). Likely focussed around Pittwater Road or adjacent to Warringah Mall for concentration of central access and high amenity. Quality, commercial office suitable for co-working and flexible office spaces will be important (could include start ups etc.). These can act as suburban 'hubs' for CBD businesses as well as align to needs of local workers and residents. Consider commercial spaces along Pittwater Road above street level retail. Some commercial office shopfronts could be supportable within the future town centre and Warringah Mall. Consider blending of commercial and industry to act as a buffer between industrial lands and future town centre.	Strong potential for redevelopment and intensification of industrial lands. Existing function is maintained but enhanced to adapt to evolving industrial and employment requirements. Higher intensity uses remain focused in eastern precinct, with western precinct lighter industry and blending of office, retail and industrial in transition to Warringah Mall and B-line. Likely that majority of technology and finer grain industrial and employment uses will be accommodated in the western precinct. Consider combining light and low impact industry with residential and commercial uses using modern materials to reduce impacts and improve amenity. Consider this type of integration for transition between residential and higher intensive industrial uses – e.g. around Wattle Road.	Moderate growth overall. Functions could be accommodated within future town centre and within 400m of B-line. Location around existing medical facilities along Pittwater Road (within one block). Opportunity to reposition retail along Pittwater Road to accommodate some of these uses. As recommended by the Employment Study (p.202), consideration should be given to relocating the Library and other community infrastructure to the future town centre.
Success factors	Walkable to B-line and range of amenities and community services. Attractive streetscape and walkable neighbourhood. Limit impact from traffic noise. Opportunity for true mixed use, live/work/play environment aligned to Post COVID-19 world.	Critical mass of tenants/uses to form an active precinct and destination. Leverage off existing Warringah Mall and redevelopment. High traffic volumes and pedestrian activity. Strong access, visibility and enough carparking etc. Attractive streetscape and walkable neighbourhood. Limit impact from traffic noise. Opportunity for true mixed use, live/work/play environment aligned to Post COVID-19 world.	Critical mass of businesses to form an active precinct and destination. Modern, A-grade commercial office developments. Flexible floorplate design also suggested to allow space to adapt and evolve overtime. High-profile, strong access and enough carparking etc. Transport, retail, services and amenities in easy walking distance. Opportunity for true mixed use, live/work/play environment aligned to Post COVID-19 world.	Critical mass of businesses to form an active precinct and destination. Easy accessibility including for trucks and vans. Allow for flexibility in built form to attract and retain a range of users including those that embrace future trends and technology shifts. Ability to operate 24/7. Quality built form that respond to modern tenant requirements. Transport, retail, services and amenities in easy walking distance.	High-profile and easily accessible location. Easy, walkable access to public transport. Walkable to retail and other amenities. Integration with existing education and health facilities to form a critical mass of uses and act as a key destination for the local community. Leverage off existing Warringah Mall and redevelopment.





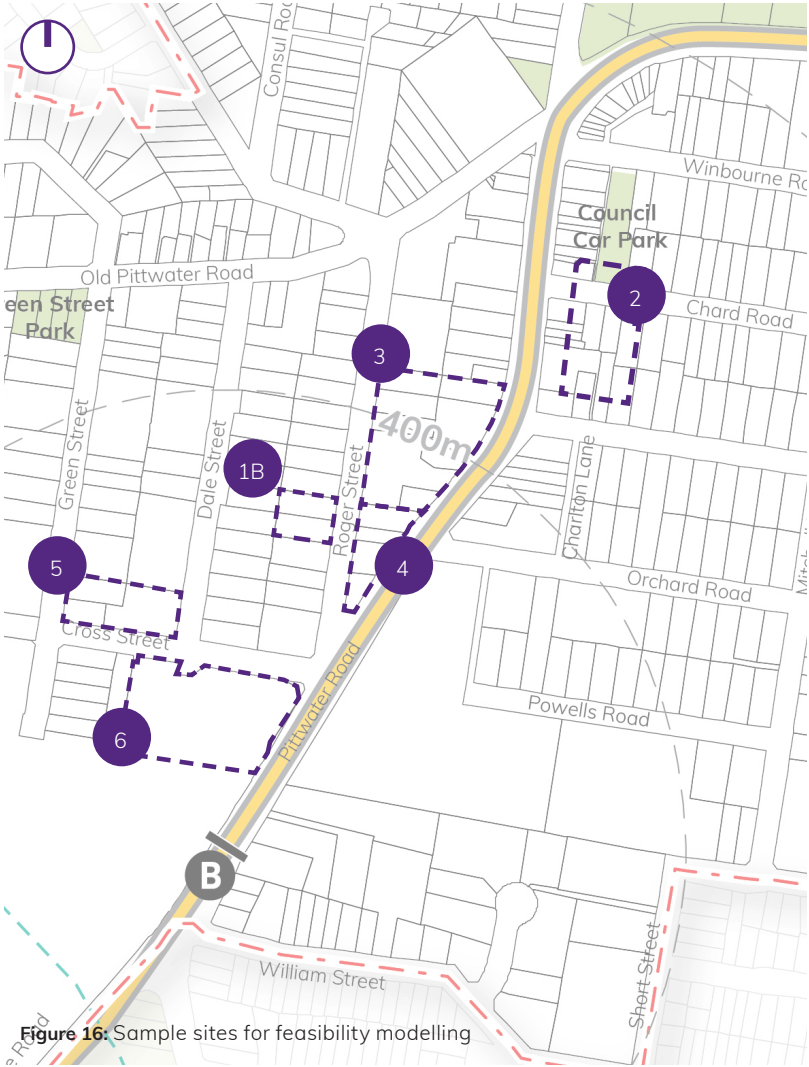


Figure 16: Sample sites for feasibility modelling

Development feasibility analysis

Atlas Economics (Atlas) carried out high-level development feasibility analysis to inform the structure planning process. A sample of sites across the Structure Plan area (the Sample Sites) was tested for a range of land use mixes and densities, iteratively informing high-level concept schemes prepared by Ethos Urban. The high-level concept schemes prepared for the Sample Sites included a mix of employment-only and mixed-use residential development.

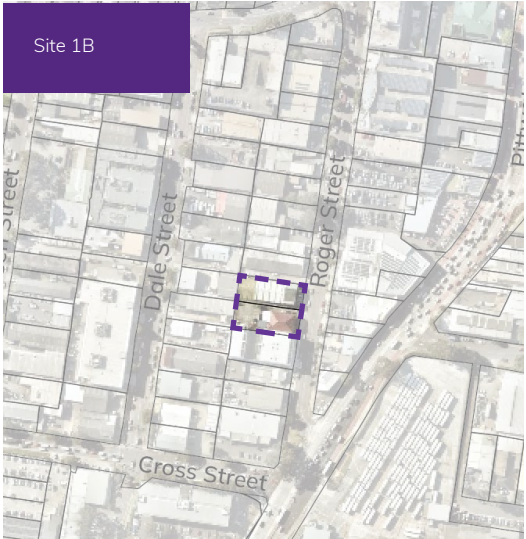
Legend

1b	14-16 Roger St
1	1 Sydenham Rd
2	658-672 Pittwater Rd 1 Chard St
3	285-289 Pittwater Rd 491-497 Pittwater Rd 15-17 Roger St
4	475-481 Pittwater Rd
5	2 Dale St 24 Green St Cnr Green St/Cross St
6	Westfield Warringah, 145 Old Pittwater Rd

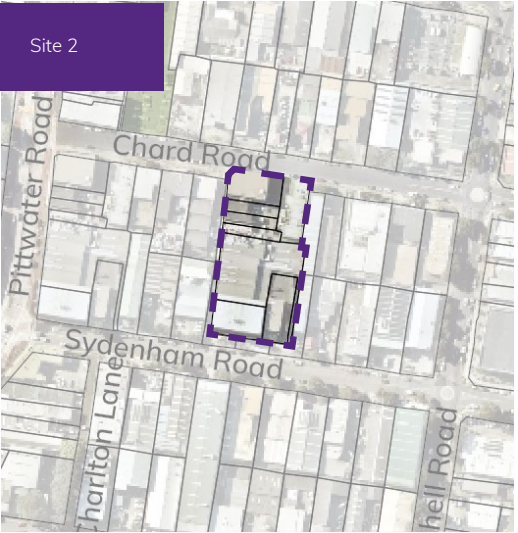
The objective of the feasibility analysis was to:

- To test the viability of a range of land use mixes (from commercial-only and residential-only to mixed use developments) and minimum densities (FSR) required for feasible development to occur.
- To test the tolerance of development to:
  - Section 7.11 contributions at \$20,000 per dwelling
  - Council's target 5-10% Affordable Housing contributions.

Figure 16 illustrates the location of the Sample Sites across the Brookvale Structure Plan Area. The following pages describes the site area and redevelopment yield that was tested for feasibility purposes



Site Area	2,028m <sup>2</sup>
Height (Storeys)	7
Residential GFA	3,614m <sup>2</sup> (FSR: 1.8:1)
Non-residential GFA	1,216m <sup>2</sup> (FSR: 0.6:1)
Total FSR tested	2:38:1
Comments	Apartment typology built to boundary, North and South with blank wall similar to existing residential building to the South.



Site Area	4,996m <sup>2</sup>
Height (Storeys)	6
Residential GFA	7,061m <sup>2</sup> (FSR: 1.4:1)
Non-residential GFA	2,914m <sup>2</sup> (FSR: 0.6:1)
Total FSR tested	2.00:1
Comments	Laneway to the rear, Building setback from Pittwater Road at ground level.



Site Area	10,692m <sup>2</sup>
Height (Storeys)	8
Residential GFA	18,806m <sup>2</sup> (FSR: 1.77:1)
Non-residential GFA	11,897m <sup>2</sup> (FSR: 1.1:1)
Total FSR tested	2.87:1
Comments	Building setback from Pittwater Road at ground level, 6m through block link. Assumes partial above ground parking/loading on ground level.





Site Area	2,807m <sup>2</sup>
Height (Storeys)	8
Residential GFA	NA
Non-residential GFA	10,610
Total FSR tested	3.78:1
Comments	Assumes one level of basement parking.



Site Area	4,038m <sup>2</sup>
Height (Storeys)	4
Residential GFA	NA
Non-residential GFA	7,999
Total FSR tested	1.98:1
Comments	Assumes partial above ground parking/loading on ground level.



Site Area	11,383 m <sup>2</sup>
Height (Storeys)	12
Residential GFA	17,610m <sup>2</sup> (FSR: 1.6:1)
Non-residential GFA	12,447m <sup>2</sup> (FSR: 1.1:1)
Total FSR tested	2.7:1
Comments	Above ground car parking on Level 1, Commercial building on corner of Cross Street and Pittwater Road.





**Factors Influencing Development Feasibility**

Prior to assessing the feasibility of development in the Structure Plan area, it is necessary to consider the factors that affect the feasibility of individual sites for development.

There are a considerable number of factors affecting the feasibility of individual sites for development and rarely is a single factor the only cause of poor development feasibility. Urban land is subject to market factors which directly affect their land values and the feasibility of development.

The following are a selection of factors that affect the feasibility of development in Structure Plan area.

**Land Values and Site Consolidation**

To economically acquire and develop land, the value of a site as a development prospect must exceed its existing use. Development will only occur if the proposed use is valuable enough to displace existing uses. For instance, while many existing buildings may be aged, in many instances they may still be providing a good level of functional utility and thereby be relatively valuable.

Consequently, the acquisition of land for development can be a high-risk and high-resource activity, particularly where numerous sites have to be amalgamated prior to development. Where multiple properties

are required, the payment of incentives over and above market value is often required.

The cost of land and site consolidation is arguably the key impediment for development in established urban areas. High and valuable existing uses and a high degree of ownership fragmentation are factors to this challenge. Fragmented ownership patterns and high land values have the potential to present challenges to large scale renewal in Brookvale.

**Residential v Non-Residential Uses**

The type of land use proposed on a site underpins the value of that site as a development opportunity.

In effectively all markets (with the exception of some areas in large CBDs), residential is the dominant use and outprices all other uses (on a rate per square metre). Consequently, in land use zones where a diverse range of uses is permissible (e.g. B4 Mixed Use), residential uses represent the most financially attractive use and therefore make it difficult for other uses to compete for development sites.

**Cost of Construction**

The cost of construction increases significantly as buildings become taller due to additional engineering and building compliance requirements (e.g. service shafts, fire escapes, etc). The cost to construct residential buildings up to 3-storeys, 9 storeys, 10-20 storeys and 20-40 storeys is incrementally different for these reasons.

In deciding the amount of capital to apply to a site, i.e. how intensely (how many storeys) a site should be developed, developer and investor capital will be applied to the point where incremental revenue equals incremental cost. It is no surprise that in many price-sensitive markets buildings are only developed to 8-9 storeys.

**Statutory Controls**

Whilst it is well understood that planning and development controls have the ability to affect feasibility through changes in land use zoning and densities, design requirements also directly contribute to development costs. Codes for parking, open space, sustainability, development contributions and the like can collectively influence the cost of development. For instance, an increase in density will increase height and cost of construction but may also impact on code-based requirements such as car parking areas.



**Feasibility of Redevelopment**

This feasibility of redevelopment considers existing property values, or the opportunity cost of land (which refers to the value of a foregone option). In the Structure Plan area, the opportunity cost of land is primarily derived from their existing buildings and uses. This is relevant as the price a developer could pay for development site needs to exceed the 'opportunity cost' of a site. It is a market reality that landowners expect to receive a premium (over and above market value) to incentivise sale for development.

Some sites would require consolidation of multiple properties for the purpose of development. Analysis of sales activity shows a varying range of prices paid for sites in the Structure Plan area, reflective of, inter alia, site area, site coverage (building area), land use zone and age and quality of existing improvements.

Based on research and analysis of market activity (including sales of development sites, residential and non-residential floorspace), the feasibility analysis reviewed the concept schemes having regard to the existing uses and corresponding values.

To displace an existing use, a site must be more valuable as a development opportunity than the existing use.

Established lot patterns and valuable existing buildings/ uses in the Structure Plan area mean that not all sites will be development propositions. Due to existing uses that are functional and highly valuable, some sites will require higher redevelopment densities that there is environmental capacity for.

There is currently a s7.12 development levy that is applicable in the Structure Plan area. The feasibility analysis considered the implications were a s7.11 contribution instead be required on residential floorspace (assumed at \$20,000 per dwelling). A 1% development levy on non-residential floorspace was assumed to remain.

The high-level feasibility analysis additionally considered the implications of an Affordable Housing contribution of 5% on residential floorspace.

When included separately, development feasibility is affected (and thereby a higher density required). When included together, development feasibility is further affected with even higher density required to offset the impact of the contribution/s requirement.

The above process was repeated iteratively to inform the concept schemes in the Structure Plan, with densities adopted balancing

the contributions requirement and the environmental capacity of various sites.

The following two diagrams illustrate conceptually two example sites where the inclusion of contributions (s7.11 and Affordable Housing) separately and together negatively affect the feasibility of development.

In the first graph (Example 1), notwithstanding the negative impact to development feasibility, the value of the site as a development proposition remains higher than the existing-use value. This means the assumed development scheme is able to displace the existing use.

The following graph (Example 2), development in the first instance is only marginal, i.e. with the value of the site as a development proposition on par with the existing-use value. While the inclusion of contributions (s7.11 and Affordable Housing), the existing uses are too valuable to be displaced by the assumed development scheme, regardless of contributions.

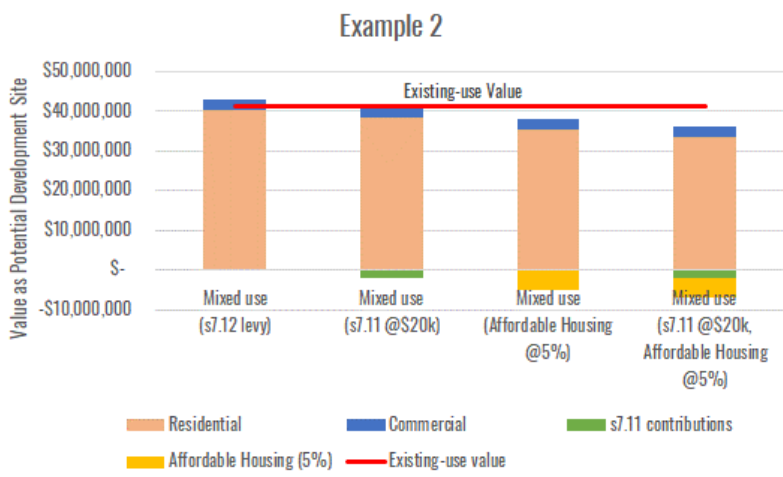
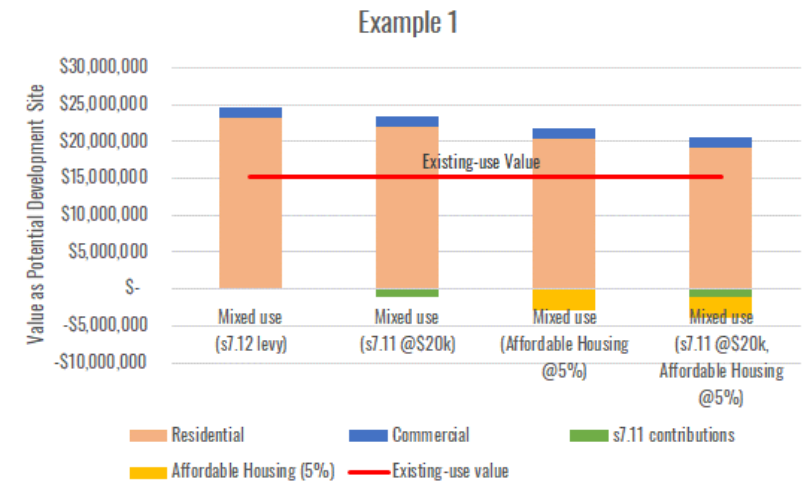




Table 23 summarises the findings of the development feasibility analysis and identifies the minimum FSR required for feasible development at various assumed land use mixes (varying proportions of residential to non-residential GFA). The minimum FSRs identified to be required assume new s7.11 contribution rates at \$20,000 per dwelling and Affordable Housing contributions at 5%. Higher FSRs would be required if higher s7.11 or Affordable Housing contributions were required.

We highlight that the feasibility analysis is desktop in nature and is carried out without the benefit of internal inspections or property-specific financial information (i.e. tenancy schedules, leases, etc.). The analysis has also not considered potential disruption payments which may need to be made to tenants displaced from redevelopment of some sites. Consideration of these factors could have implications for the feasibility of development and FSR threshold required for development to viably occur.

Table 23: Tested Land Use Mixes and Minimum FSR Required

Site	Address	Zone	Land Use Mix (Resi: Non-Resi)	Minimum FSR Required
1b	14-16 Roger St	B5	75: 25	2.4:1
2(a)late	1 Sydenham Rd 658-672 Pittwater Rd 1 Chard St	B5/ IN1	65: 35	2.9:1
2(b)	1 Sydenham Rd 658-672 Pittwater Rd 1 Chard St	B5/ IN1	79: 21	2:1
3	285-289 Pittwater Rd 491-497 Pittwater Rd 15-17 Roger St	B5	61: 39	2.3:1
4	475-481 Pittwater Rd	B5	50: 50	2.6:1
5	2 Dale St 24 Green St Cnr Green St/Cross St	IN1	0: 100	3.9:1
6	Westfield Warringah, 145 Old Pittwater Rd	B3	59: 41	2.7:1 (marginal)

Source: Atlas Economics

Key Observations

The following observations can be drawn from the results of the development feasibility analysis:

- In general, mixed-use development in the Structure Plan area will likely need densities >FSR 2.3:1 for development to be viable. There will invariably be outliers to property values - properties that have sold for much higher or lower prices compared to the sites examined. Properties with high values suggest their existing buildings offer high levels of utility and amenity, with these properties arguably not 'ripe' for redevelopment and/or would require high densities to justify redevelopment.
- Unsurprisingly, sites currently zoned IN1 General Industrial, larger sites and/or sites less intensely developed (i.e. existing car dealerships) have a greater propensity for viable development owing to their lower opportunity cost

(when analysed on a dollar per square metre of site area basis). They therefore require a lower density (FSR) threshold for development to be feasible.

- There is a direct relationship between the FSR required for feasible development and the proportion of non-residential GFA. The higher the proportion of non-residential floorspace in a development, the higher the FSR needed to cross-subsidise the provision of non-residential floorspace (which is not as valuable as residential floorspace).
- The feasibility of redevelopment is marginal in many instances (owing to the high values of existing uses). Consequently, the tolerance of development to new s7.11 contributions (assuming \$20,000 per dwelling) and Affordable Housing contributions will depend on quantum of planning uplift envisaged (whether a rezoning or increase in density).
- The feasibility analysis shows that at the

densities contemplated by the Structure Plan, Affordable Housing contributions above 5% are unlikely to be tolerated. The capacity of sites to contribute to Affordable Housing is directly related to planning uplift - sites which are the beneficiary of large planning uplift having greater capacity to contribute than sites which only receive modest planning uplift.

The development feasibility analysis is desktop in nature and is undertaken relying on publicly available market information. There could be sites within the Structure Plan area which are subject to long lease covenants which require tenants to be compensated for disruption in the event of redevelopment. The analysis could require review should property-specific information come to light.



Benchmarking comparable employment precincts

Alexandria/Rosebery, Sydney

The Alexandria/Rosebery industrial area comprises approximately 166.3 hectares of land located within the City of Sydney LGA. Alexandria is an evolving area containing a second order business and service area outside the central CBD.

Lessons for Brookvale

The Alexandria and Rosebery employment precinct contains a mix of industrial lands primarily relating to international distribution warehouses as a result of its close proximity to Sydney Airport and Port Botany international trade gateways. The precinct also includes clusters of high tech industries and has a strong presence of multi-storey warehouse distribution centres. The area also contains pockets of mixed-use industrial development. Overtime, the precinct has evolved as an enterprise area that supports emerging enterprise, innovation and light industrial uses that reinforce the economic value of the area whilst balancing the need to retain and not displace industrial uses. Flexibility in Specially, the area represents a thriving, diverse dynamic and creative modern employment precinct.



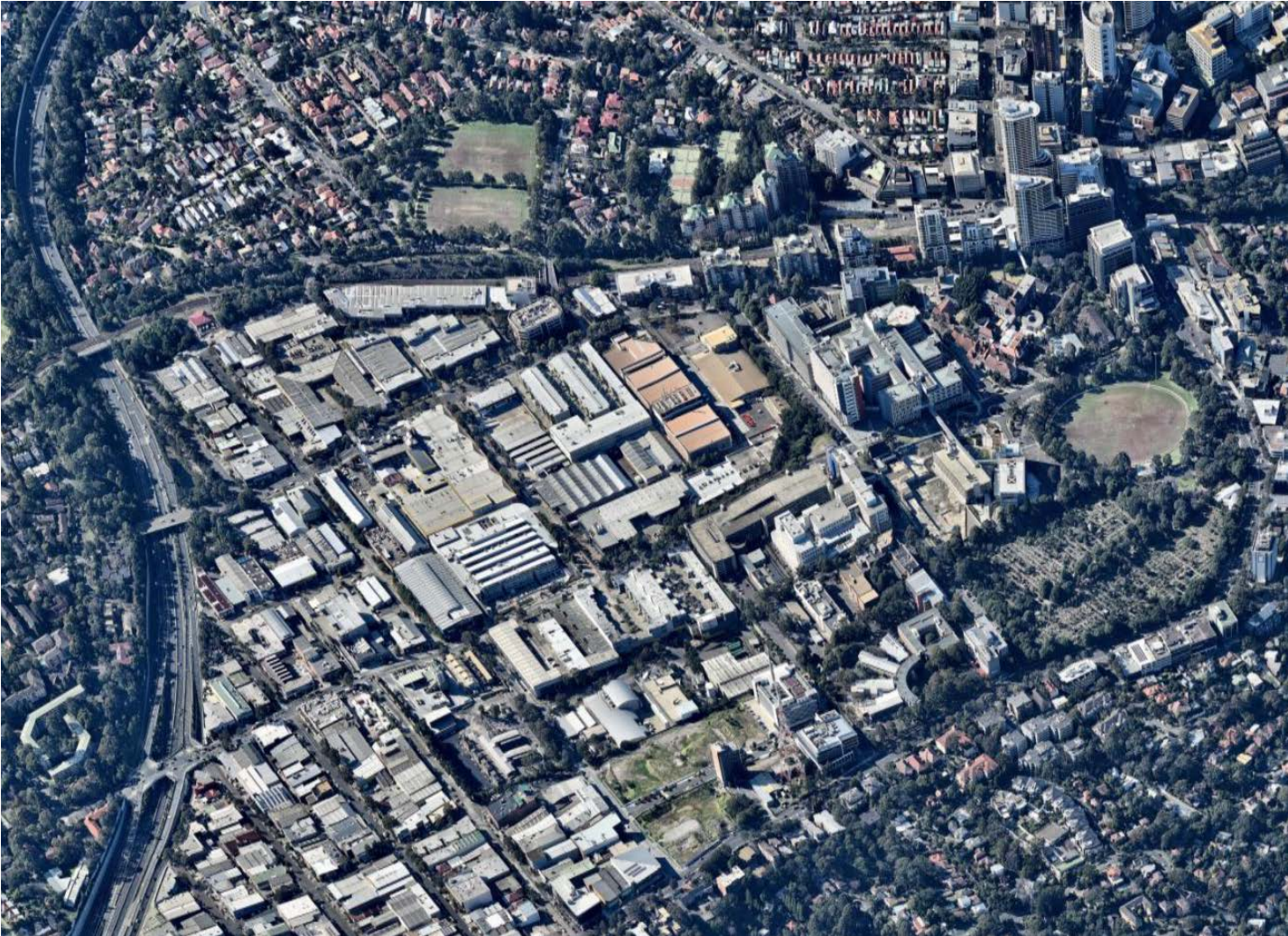
Statistics				
166.3ha Size	62,368 Number of jobs	\$10,953 Gross value added (\$)	Transport, Postal, Warehousing Primary industries	

Artarmon, Sydney

The Artarmon industrial area comprises approximately 65.4 hectares of land located in the Willoughby local government area. The area is well established, supporting manufacturing, IT and publishing, maintenance jobs, service jobs, health related jobs and freight and logistics.

Lessons for Brookvale

The Artarmon employment precinct is closely located to major freight transport infrastructure including the Pacific Highway, Lane Cove tunnel and Gore Hill freeway and the North Shore Rail Line. The area benefits from good access to the metropolitan arterial road network and substantial urban services in the St Leonards strategic centre. The area is also well located to the existing Royal North Shore Hospital health precinct with identified opportunities to foster connections with the several medical-related manufacturing industries thus indicating an emerging health and industrial cluster. This employment precinct demonstrates the viability of a commercial core and mixed use area where people have good access to transport services and jobs. This highlights the opportunities of a commercial core being co-located and in close proximity to industrial land use zones.



Statistics				
65.4ha Size	19,096 Number of jobs	\$3,628 Gross value added (\$)	Health care and social assistance Primary industries	



Statistics

87ha Size	13,916 Number of jobs	\$1,537 Gross value added (\$)	Manufacturing Primary industries
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Marrickville-Sydenham, Sydney

The Marrickville-Sydenham employment precinct comprises approximately 87ha of land located in the Inner West local government area. The industrial make-up of the area is widely varied and relate primarily to manufacturing, wholesale trade and transport, postal and warehousing services. Within these uses are a significant number of creative enterprises which make up part of the Sydenham creative hub precinct.

Lessons for Brookvale

The Marrickville-Sydenham industrial area has evolved overtime to include a significant number of creative enterprises, including artisan food and drink premises, creative spaces and innovative uses of warehouses In order to ensure that industrial areas remain protected and can continue to operate in the area without any conflict, industrial retail outlets are the only form of retail permitted within the IN1-General Industrial and IN2- Light Industrial zones. The industrial area demonstrates the opportunity for Brookvale to expand the diversity of industrial related uses to provide facilities and meet the day to day needs of workers in the area whilst protecting industrial land. Enabling suitable land uses within the industrial zones will contribute to delivering more employment opportunities to support the viability of centres.





Re-aligning the draft Structure Plan

Based on this recent work, a comprehensive review of new evidence and strategic planning priorities has been undertaken to prepare a revised draft Brookvale Structure Plan for public exhibition. This builds on community feedback received during the 2017 public exhibition, findings from technical studies and the strategic directions, priorities and actions of the North District Plan and Council’s LSPS.

A key output of this review process was the identification of emerging directions that would be used to guide the structure planning process. The emerging directions that were considered as part of the revised Structure Plan, include:

- Draw on the locational attributes and the character of place when defining the role and purpose of the strategic centre.
- Retain Brookvale’s role as the economic heart of the Northern Beaches and support upskilling programs for the future workforce. Provide opportunities for the changing

needs of the business community.

- Retain industrial lands and respond to the changing future employment trends.
- Support opportunities to deliver new commercial office floorspace near the Brookvale B-line stop to accommodate future demand for office space in Brookvale, along with a mix of commercial, civic and entertainment functions.
- Support both employment and housing growth in Brookvale, with employment uses as the first-order land use and residential acting as a complementary use that will support the vibrancy and activity in the centre.
- Support the thriving and existing creative industries with a creative hub that fosters collaboration and partnerships diverse arts, events and culture to drive the growth and agile local economy.

- Identify opportunities to ‘green’ the urban environment in Brookvale. Investigate public domain incentives and planting of street trees.
- Investigate opportunities to encourage alternative forms of ground floor employment uses for future mixed use developments. Reconsider uses along the Pittwater Road ‘movement corridor’ that are more flexible than standard retail uses such as entertainment, creative and maker spaces that are less inclined to amenity impacts of a busy road.
- Encourage street activation and a night-time economy.
- Elevate the quality of the public domain, parks and open space, improve linkages to the regional open space network and preserve the native vegetation and wildlife corridors.

- Strengthen existing social infrastructure and facilitate opportunities for the development of multi-purpose and recreational spaces
- Identify opportunities to deliver key areas of activity in the centre that will attract people to visit and participate in community events, arts, recreation and cultural activities.
- Outline ambitions to adopt best-practice sustainability targets for energy, water and waste.

The above strategic directions have been considered throughout the process of revising the Brookvale Structure Plan.

Vision and aspirations

Vision

Based on the strategic directions above, a new vision statement was developed for the Brookvale Structure Plan. This aimed to capture the best parts of Brookvale and outline the future direction for growth and renewal for the centre. The vision statement is: 'Nestled in its unique coastal and bushland environment, Brookvale will be a vibrant, accessible and enlivened place. It will fulfil its role as an

employment-focused centre, supporting the local economy with opportunities that are proudly diverse, innovative and creative. The centre will be a liveable and sustainable place supported by activity, public spaces, and community services that embrace parts of Brookvale’s character and unique environmental qualities that will be highly valued by employees, residents and visitors.'

Aspirations

Driving the draft Structure Plan process in 2017, a series of Structure Plan aspirations were identified. These aspirations respond to an analysis of the existing context as well as the community feedback from consultation carried out for the exhibited draft Brookvale Structure Plan.

A review of these aspirations found that these aspirations are still relevant for Brookvale and should continue to be used to develop and guide this structure plan. While still relevant to informing the structure plan, minor updates to two of the aspirations have been made to better reflect the strategic directions for Brookvale as a centre.

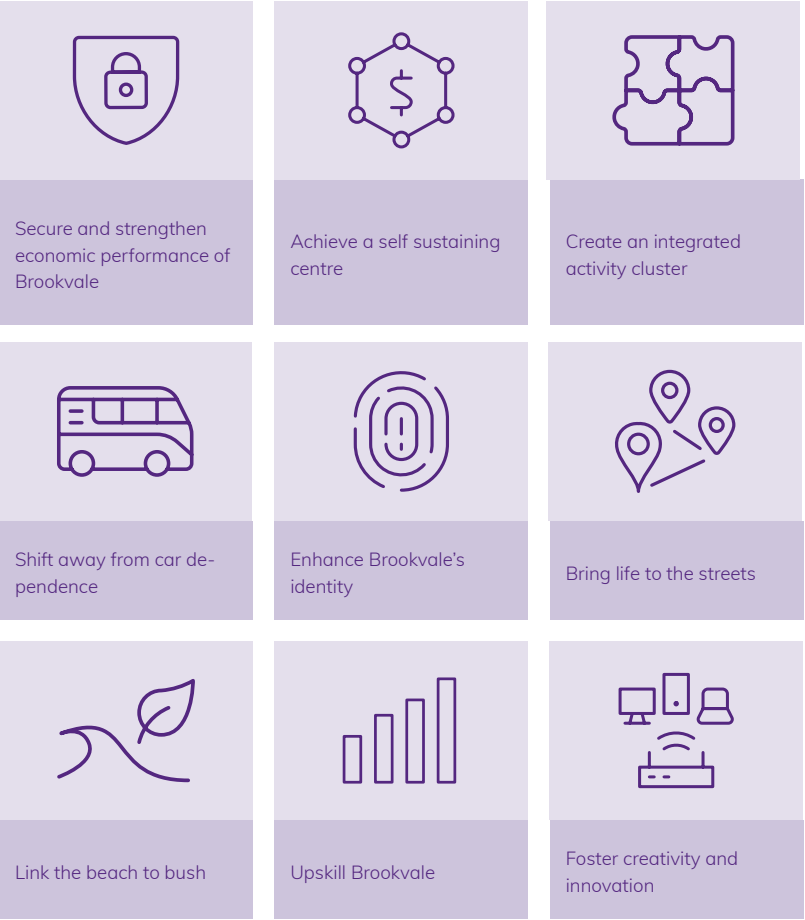


Figure 17: Aspirations for Brookvale Structure Plan



Movement & Connections Network

The proposed movement network for the Brookvale Structure Plan aims to create a more permeable street network that supports access by walking, cycling and public transport. A range of initiatives have been identified to reduce car reliance and promote access to the B-Line stops on Pittwater Road.

New pedestrian through-site links

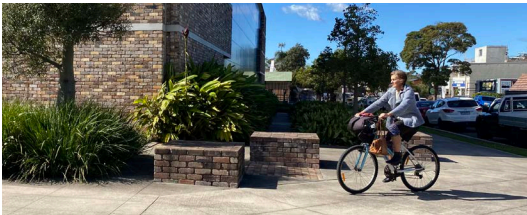
The existing urban structure of Brookvale comprises long urban blocks that limit pedestrian permeability and extend walking distance and times for pedestrians. Proposed pedestrian through-site links have been identified throughout Brookvale which aim to reduce urban block sizes and increase permeability to improve pedestrian accessibility, safety and reduce walking distances.

Existing and proposed laneways

Building upon the Charlton Lane alignment, a new north-south laneway between Chard Road and Sydenham Road is proposed. This laneway will provide vehicular and service access to new mixed use buildings along Pittwater Road and establish a continuous laneway link between the Orchard Road and Winbourne Road Car Park. There is an opportunity to support targeted forms of active ground frontages to these laneways (while maintaining service access) that can facilitate greater activation in the Creative Hub.

Cycling network

The proposed cycling network is aligned with the recommendations arising from Council's 2020 Bike Plan, including new or enhanced bicycle connections along key streets such as Cross Street, Orchard Road, Pittwater Road and William Street.



Streetscape improvements

The revised Structure Plan proposes streetscape improvements in various areas. This includes:

- improved pedestrian crossing and public domain facilities at two key signalised intersections on Pittwater Road – those being at Cross Street and Sydenham Road
- a new shared zone environment for the southern portion of Dale Street near the Pittwater Road intersection
- a re-aligned Dale Street extension south into Warringah Mall which is envisioned to become a new high street that integrates Warringah Mall into the surrounding centre
- overall streetscape improvements associated with new development that will adopt durable high quality materials.

Improvements to the streetscape will need to align with the Northern Beaches Public Space Vision & Design Guidelines which aims to promote a cohesive identity while still recognising the unique character of individual areas.

Potential Powells Road extension

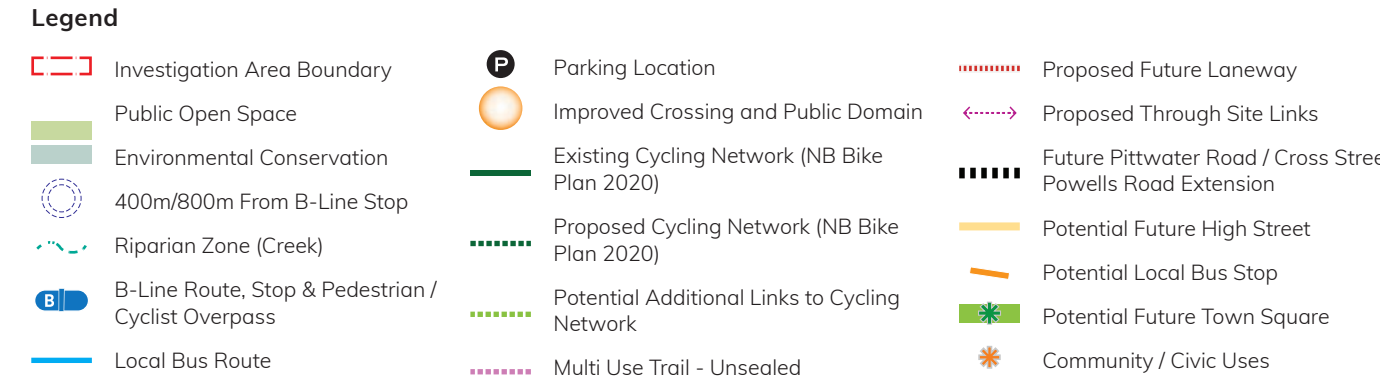
A new road link between Powells Road and Cross Street has been identified to support local vehicle accessibility within Brookvale. As the Powells Road extension dissects the existing bus depot and will have impacts on the space within the depot, the proposed link would need to be delivered as part of any longer-term redevelopment opportunity on the depot site. The opportunity to provide this new link will be subject of further investigations and discussions between Council and TfNSW

Actions

- Investigate the potential for improved pedestrian crossings and public domain facilities along Pittwater Road
- Deliver new through-site links and laneways as part of any future development within Brookvale
- Implement proposed cycleways identified by the Northern Beaches Bike Plan 2020
- Investigate the potential for a future Powells Road Extension with Transport for NSW.



Note: The proposed cycling route network is indicative. Location of routes, side of street and type of cycling infrastructure may vary based on detailed site investigation and environmental assessment.





Natural Systems

Brookvale is nestled in a valley creating an amphitheatre around the western edge of the centre. It's steep topography and dense bushland vegetation are most notable in north west portion of the investigation area while the majority of land in the centre is flat as the terrain steps down towards the coast. The combination of low-lying terrain subject to flooding and limited canopy cover place greater need for intervention to integrate green infrastructure so that Brookvale is more resilient to urban heat island effects and flooding.

Tree canopy & urban greening

Increased tree canopy and urban greening are proposed along key movement corridors such as cycling and pedestrian links as well as within key recreational destinations. Built form should look to incorporate urban greening where appropriate and may include podium and rooftop gardens, atriums, courtyards and green walls.

Integrate natural elements

The provision of at-grade open space provides the opportunity to unveil and reinterpret natural waterways and corridors that have been buried beneath Brookvale. This is especially relevant for the proposed town square at the Warringah Mall site.

Open space areas are encouraged to be landscaped with adequate tree pits, permeable pavement treatments, swales and bio-retention to play a flood mitigation role.



Actions

- Prepare an Urban Tree Canopy and Greening Strategy for Brookvale to inform planning controls to increase urban tree canopy along streets, public open spaces and as part of new buildings
- Adopt wider landscaped setbacks along the southern edge of Cross Street to become a green boulevard incorporating landscaping and water sensitive urban design measures, improved amenity and contribute to the envisaged character of Brookvale
- Encourage business along Brookvale Creek to engage with the creek and unlock these areas as a key source of workplace amenity
- Integrate greenery and vegetation into buildings, laneways and car parks, such as green laneways, green walls and roofs and green pavement treatment
- Encourage pockets of landscaping at the front of industrial properties on vacant land which offers places for workers to sit while also contributing to the character of Brookvale
- Undertake a hydrology study to address flood risk and assess the potential for the proposed town square at the Warringah Mall site to be located and designed to serve stormwater management functions

Legend

- Investigation Area Boundary
- Open Space
- Environmental Conservation
- 400m/800m From B-Line Stop
- Wildlife Corridor
- Vegetation
- Swamp Oak Floodplain Forest
- 10m Contours
- 2m Contours
- High Risk Flood Precinct
- Medium Risk Flood Precinct
- Low Risk Flood Precinct
- Water
- Natural Drainage Waterways (40m Buffer)
- Riparian Zone (Creek)
- Potential Future Town Square
- Increased Urban Tree Canopy and Greening
- Community / Civic Uses







- Legend**
- Investigation Area Boundary
  - Existing Public Open Space
  - Environmental Conservation
  - Riparian Zone (Creek)
  - 400m/800m From B-Line Stop
  - Proposed Town Square
  - Dual Purpose Carpark / Event Space
  - Community / Civic Uses
  - Potential Future High Street
  - Active Frontages
  - Pedestrian / Cyclist Overpass



**Public Open Space**

The existing provision of public open space in Brookvale is limited to Green Street Park and Brookvale Park. The planned future growth of Brookvale therefore requires new public open spaces to support the needs of the community.

**New Town Square**

A new town square with open space is proposed for the community with a minimum size of 5,000 square metres on the Warringah Mall site. The location of this public place aims to build upon the natural / green grid in Brookvale, take advantage of its frontage to the B- Line stop, assist with water management, and become an anchor for the future commercial, civic and entertainment core of Brookvale. It is envisaged that this space will be a highly activated place for workers, residents and visitors to meet and dwell, and for potential community events to be held. It will support the additional residential and employment population.

The future design of the town square should seek to integrate into its urban setting and should support a combination of hard and soft landscapes which incorporates new trees, seating, public art and play elements.

**Existing public open spaces**

There are opportunities to improve and upgrade existing public open spaces so they are more attractive and accessible to visitors, residents and workers within Brookvale. These include local open spaces include Green Street Park and Brookvale Park and district open sapces such as John Fisher Park. Through additional upgrades, the service capacity of the public open spaces will support additional demand created by the increase resident and worker population in Brookvale.

**Winbourne Road Car Park**

The Winbourne Road Car Park is envisaged to have a dual purpose, primarily as car parking (2 hour limit) for nearby businesses during peak periods (i.e weekdays).

There is an opportunity however to support temporary activation events (e.g. markets and small scale community events) during times when demand for car parking is lower and there is minimal disruption to business operations (i.e. weeknights and weekends).



**Actions**

- Provide a new town square with of a minimum 5,000 square metres adjacent to the B-line stop. This open space should support a combination of hard and soft landscapes, incorporate new trees, seating, public art, play elements, and potentially water management and flood mitigation functions
- Investigate improvements to existing local and district public open spaces to support additional demand created by the Brookvale Structure Plan
- Investigate opportunities for temporary activation / community events at Winbourne Road car park outside of peak periods
- Implement the recommendations of an updated Open Space and Recreation Strategy for Northern Beaches LGA



The structure plan

A revised structure plan framework was prepared to spatially represent opportunities for land use change and increases to height and density. To inform the structure plan, six structure plan moves identified to guide the spatial changes of land use and density within Brookvale. These moves offer a flexible and robust approach to the planning and design of Brookvale with a strong proposition to improve amenity, establish a clear identity through environmental and programmatic initiatives.

The structure plan moves identified, include:

- **Distinguish Brookvale’s Employment Lands** - Recognise the importance of Brookvale’s employment lands to the economic contribution of the Strategic Centre and greater Northern Beaches district.
- **Cultivating Spaces for People to Connect, Create and Learn** - Establishing destinations for the community and nodes for programmed events and initiatives that showcase the culture of Brookvale’s creative industries and to provide community spaces that meet the changing needs of the community.
- **High Amenity Core** - Refocus the town centre west of Pittwater Road to establish a cluster of activity and greater amenity around the B-Line stop.
- **Creating a Walkable Grid** - Historically there are large blocks in Brookvale. East-west connections will allow for a regular urban grid with improved permeability and access.

- **Integrating the B-Line** - There is the opportunity for Warringah Mall to stitch into the existing grid, act as a catalyst for the commercial core, mixed use as well as activate the B-Line stop.
- **Linking the Environment** - Cross street and mid block links have the potential to build Brookvales identity, address flooding as well as connect to broader green networks.

Growth capacity

A key consideration as part of developing the updated structure plan are the traffic capacity constraints of Brookvale, as identified by the TMAP (Bitzios, 2021) and the ability to fund and deliver necessary infrastructure upgrades to support future growth in homes and jobs.

As identified by the TMAP, by implementing the initial infrastructure upgrades (as identified in Table 4), there would be capacity to support an additional population of 2,177 persons (approximately

1,037 dwellings) and 810 jobs. As noted in Section 6.1.2, this capacity threshold was adjusted when factoring opportunities to implement initiatives to promote shifts in travel mode share (i.e. improved cycle ways and adopting maximum car parking rates) and transferring additional traffic capacity (equivalent to 300 jobs) from Dee Why centre that would unlikely be realised. This adjusted capacity would be capable of supporting an additional 1,300 homes and 975 jobs.

Notwithstanding the above, should all major infrastructure upgrades (as identified by the TMAP) be implemented, Brookvale would be capable of supporting an additional population of 7,258 persons (approximately

3,456 dwellings) and 2,700 jobs. One of the key infrastructure upgrades required to unlock this capacity is the grade-separation of the Pittwater Road / Warringah Road / Harbord Road intersection, which has been identified in the Infrastructure Priority List by Infrastructure Australia (Northern Beaches (A8) corridor capacity: Seaforth to Mona Vale). Despite the opportunity to unlock this amount of growth in Brookvale, the cost of delivering these infrastructure upgrades are significant and would necessitate funding sources beyond Council’s local contributions plans (i.e. commonwealth funding and/ or regional infrastructure contributions).

Given the limited certainty regarding major traffic infrastructure upgrades to support growth in Brookvale, two structure plan scenarios have been developed. This includes:

- Low-growth scenario structure plan - This scenario assumes capacity for an additional 1,300 homes and 975 jobs
- High-growth scenario structure plan - This scenario assumes capacity for an additional 3,456 dwellings and 2,700 jobs.



Legend

- Investigation Area Boundary
- Area Subject to Long Term Investigation
- Creative Hub
- Public Open Space
- 400m/800m From B-Line Stop
- Riparian Zone (Creek)
- Environmental Conservation
- Education
- Low Density Residential
- Medium Density Residential
- Mixed Use
- Commercial Core / Mixed Use
- Industrial
- Enterprise
- Productivity Support

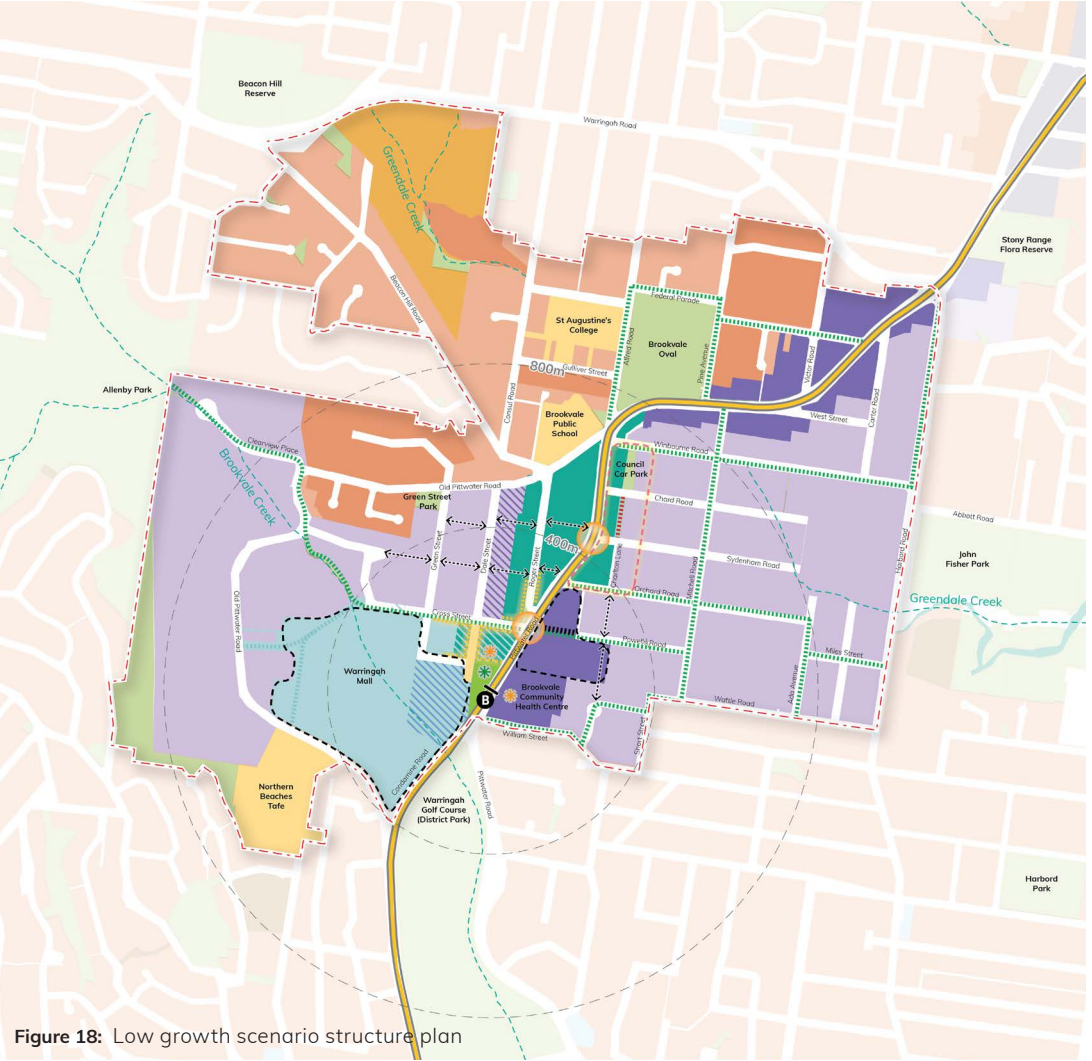
 Commercial Core Potential for future mixed-use and open space, subject to road network capacity requirements Improved Crossing and Public Domain Green Street / Link Proposed Through Site Links Proposed Future Laneway Potential Pittwater Road / Cross Street / Powells Road Extension B-Line Stop B-Line Route Potential Future High Street (Extension of Dale Street) Active Frontage Potential Future Public Open Space Community / Civic Uses

Figure 18: Low growth scenario structure plan

Low-growth scenario structure plan  
(+1,300 homes and 975 jobs)

The low-growth scenario structure plan focuses additional height and density along Pittwater Road, Roger Street and to the north-east corner of the Warringah Mall site. This aims to consolidate growth in existing mixed use areas and larger unfragmented land north of the B-line stop to support the structure plan moves to integrate Warringah Mall and the B-line stop and to create a high-amenity core. The low growth scenario structure plan seeks to consolidate the extent of growth as an interim until commitments to deliver additional traffic infrastructure upgrades can be made. This aims to limit the extent of developable land being taken up so there will be an availability of land suitable for renewal over the longer term should additional capacity be unlocked through additional upgrades.

The proposed distribution of height and density of the structure plan has sought to focus taller heights up to 12 storeys toward the B-line stop and on larger unfragmented sites. This aims to support a greater focus of activity around the future core of Brookvale, which is anchored by the proposed public open space adjacent to the B-line stop and existing services provided by Warringah Mall. Proposed heights transition down to between 7-8 storeys for proposed mixed use areas along Pittwater Road and Roger Street which will establish a new built form setting along this corridor. For industrial and enterprise areas heights are proposed to increase to 18 metres (up to 4 storeys) to provide flexibility for businesses to progressively grow their operations and economic output.

High-growth scenario structure plan  
(+3,456 dwellings and 2,700 jobs)

The high-growth scenario structure plan builds upon the low-growth scenario structure plan identifying additional areas of large unfragmented land that would be suitable for growth to further realise the success

of Brookvale as a key centre for the Northern Beaches. These transformational sites include:

- **Integrating Westfield Warringah Mall**
  - Being strategically positioned adjacent to the B-line stop and with its large landholding that are largely occupied by at-grade parking, there is an opportunity to deliver transformative change that supports the delivery of public benefit for the community. A key initiative for the renewal of Warringah Mall would be the delivery of an employment-focused mixed use core for Brookvale that accommodates a new focal point of activity with office and retail space and a range of complementary uses, including residential, entertainment, community services and public spaces.



- **Renewal of the Transport for NSW Bus Depot** - The Brookvale Bus Depot plays an important role as the main terminal for the region's buses. Despite this, there is merit in investigating the renewal of the depot over the long term given its significant size and location. Its renewal could see new opportunities to deliver new public space and a link connecting Powells Road to Pittwater Road. Despite these opportunities, Transport for NSW would need to investigate whether the bus depot operations can be relocated to another facility, or redevelopment could be feasibly delivered while continuing its operation as a bus depot.

The proposed distribution of height and density of the this scenario would continue to focus of heights around the B-Line (up to 12 storeys) to reinforce the desire for a high-amenity core that is anchored by a central public open space.

While the identified transformational sites are capable of supporting significant growth, they are unlikely to support all of the remaining growth capacity to deliver 3,456 dwellings and 2,700 jobs. Additional areas may need to be identified for land use change and increased densities to achieve this growth capacity.

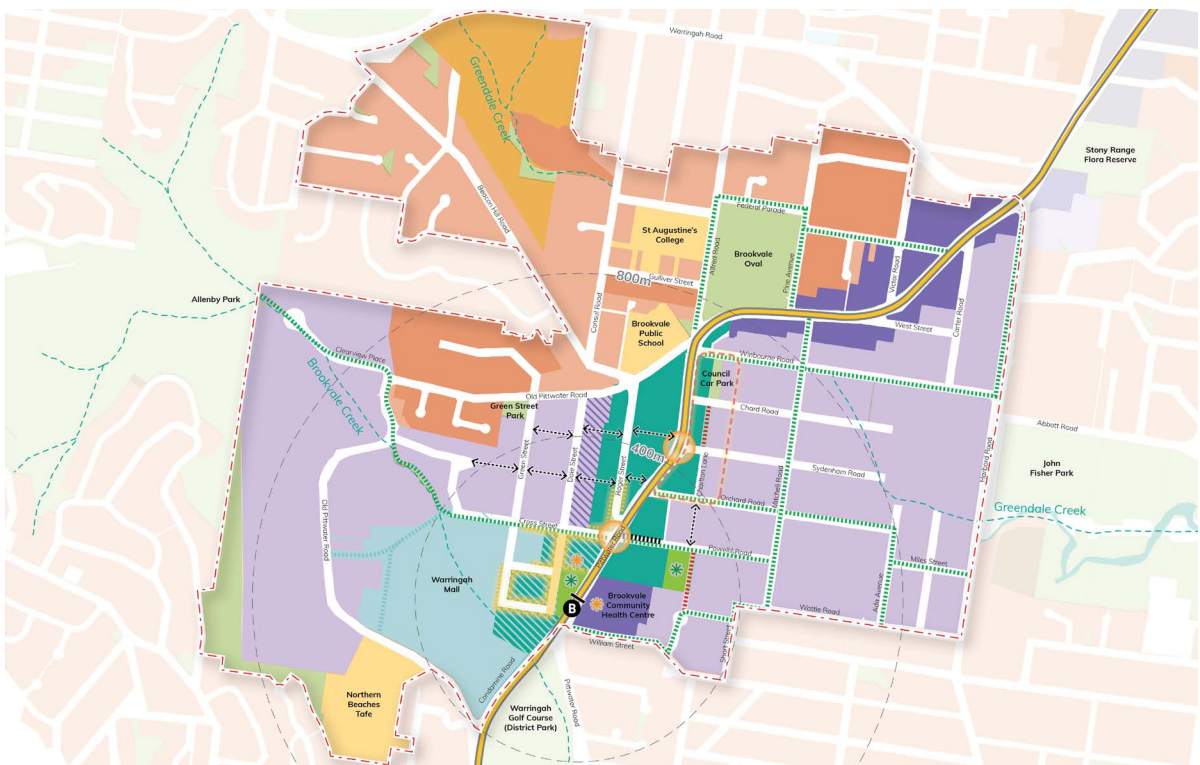
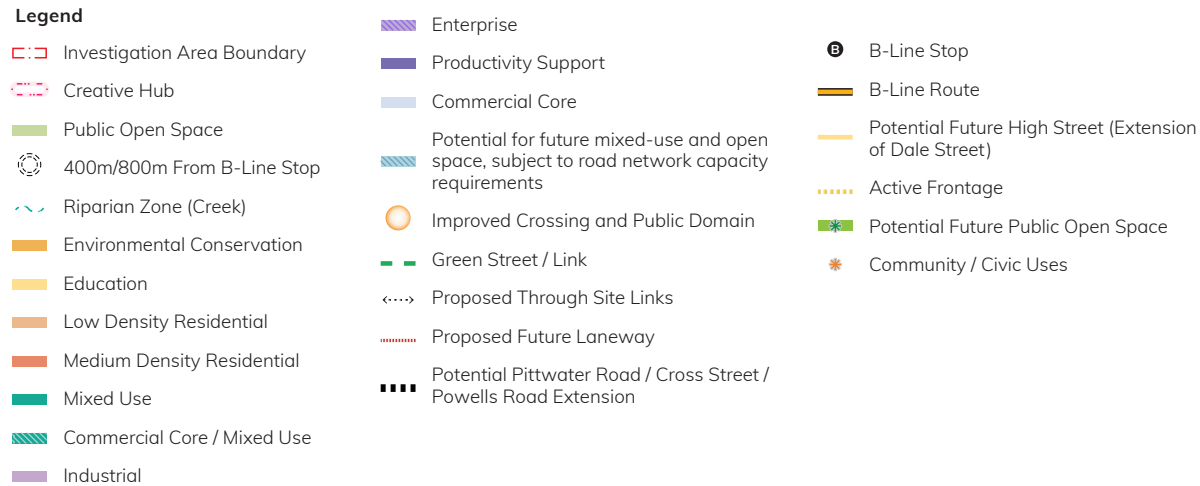

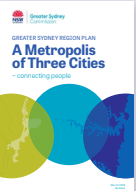
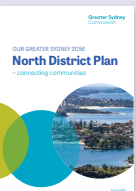



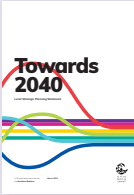
Figure 19: High growth scenario structure plan






Appendix A – Strategic planning context


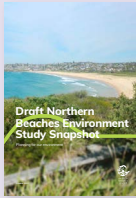
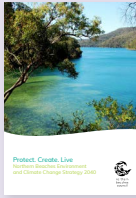
Strategy & Policies	Purpose	Key actions relevant to Brookvale
 NSW Premier's Priorities NSW Government	The Premier's Priorities outlines the key policy priorities for the government. The priorities are focused on: <ul style="list-style-type: none"><li>• A strong economy</li><li>• Highest quality education</li><li>• Well-connected communities with quality local environments</li><li>• Putting customer at the centre of everything we do</li><li>• Breaking the cycle of disadvantage.</li></ul>	<ul style="list-style-type: none"><li>• <b>Priority 11:</b> Greener public places. Increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10 per cent by 2023.</li><li>• <b>Priority 12:</b> Greening our city - increase the tree canopy and green cover across Greater Sydney by planting one million trees by 2022.</li></ul>
 A Metropolis of Three Cities – Greater Sydney Region Plan Greater Sydney Commission	The 40-year vision and 20-year plan to manage growth and change across Greater Sydney through the '30-minute city'. It sets a number of directions around liveability, productivity and sustainability.	<ul style="list-style-type: none"><li>• Maintain the mix of uses so that Brookvale-Dee Why continues to perform strongly as well-balanced, self-sustaining combined centre</li><li>• Encourage and support improvements to Warringah Mall and better integrate it with the fabric and life of Brookvale-Dee Why</li><li>• Recognise and enhance the economic and employment opportunities along Pittwater Road and encourage revitalisation along the commercial strip</li><li>• Promote walking, cycling and public transport to Warringah Mall, the Brookvale industrial area and Dee Why</li><li>• Encourage the establishment of new, innovative and creative industries in the Brookvale industrial area</li><li>• Encourage new lifestyle and entertainment uses to activate local streets in Brookvale-Dee Why</li><li>• Improve connections between Brookvale-Dee Why and the Northern Beaches Hospital at Frenchs Forest.</li></ul>
 North District Plan Greater Sydney Commission	A 20-year plan to manage growth in the context of economic, social and environmental matters for the North District to fulfil the vision of the Greater Sydney Region Plan.	<ul style="list-style-type: none"><li>• N10: Growing investment, business opportunities and jobs in strategic centres</li><li>• N15: Creating and renewing great places and local centres, and respecting the District's heritage</li><li>• Strengthen Brookvale-Dee Why through Action 41 to develop the centre encourage innovative and creative industries and provide a mix of uses that activate local streets.</li></ul>
 Future Transport Strategy 2056 Transport for NSW	The 40-year vision, directions and outcomes framework for customer mobility in NSW.	<ul style="list-style-type: none"><li>• Activate centres through enhancing the liveability and amenity of places</li><li>• Support active transport and sustainable travel</li><li>• Deliver vibrant centres supported by streets that balance the need for convenient access while enhancing the attractiveness of places</li></ul>





Strategy & Policies	Purpose	Key actions relevant to Brookvale
 <p>Towards 2040 - Northern Beaches Local Strategic Statement Northern Beaches Council</p>	A 20-year vision and supporting planning priorities and actions for land use planning in Northern Beaches Council.	<p><b>Key actions</b></p> <ul style="list-style-type: none"> <li>Jobs in the strategic centre are forecast to grow from 20,000 jobs in 2016 to 23,000-26,000 by 2036. This will largely comprise a mix of industrial, urban services and retail industries.</li> <li>Grow high skilled employment opportunities and innovation-led change across existing base of urban services, manufacturing, distribution, automotive and construction industries.</li> <li>Increase activity and supporting the night-time economy, creative and innovative industries and public art.</li> <li>Preserve the industrial integrity of industrially zoned land and support Brookvale as an employment -based centre.</li> <li>Provide renewal opportunities that will support Brookvale as a place for jobs, new housing will be provided subject to infrastructure such as B-Line improvements, public transport to Chatswood and an express bus to Manly.</li> <li>Promote development that maintains or restores the community's uses and value of waterways, ecological conditions, watercourses and beaches.</li> </ul> <p><b>Principles for Brookvale</b></p> <ul style="list-style-type: none"> <li>Support Brookvale as an employment-based centre.</li> <li>Establish a town centre-activity point and open space outside of Warringah Mall</li> <li>Support the expansion of Warringah Mall and integrate it with surrounding built form</li> <li>Bring life back to the streets, including revitalisation of the main commercial strip</li> <li>Ensure appropriate interfaces between different land uses.</li> <li>Enhance tree canopy and provide green links to Brookvale Park, Warringah Mall and the B-Line.</li> <li>Enhance Brookvale's identity and define gateways to create a sense of arrival</li> <li>Improve public transport and regional cycle networks to Sydney CBD, Frenchs Forest, Mona Vale and Manly.</li> <li>Support the night-time economy, creative and innovative industries and public art.</li> <li>Preserve the industrial integrity of the industrial zoned land.</li> </ul> <p><b>Key priorities</b></p> <ul style="list-style-type: none"> <li><b>Priority 12:</b> An inclusive, healthy, safe and socially connected community: Deliver and improve social infrastructure including community facilities and open space to facilitate opportunities that encourage social connection for people of all ages and abilities.</li> <li><b>Priority 17:</b> Centres and neighbourhoods designed to reflect local character, lifestyle and demographic changes: Enhancing the local identity of through innovative design, place activation and recognition of heritage and culture</li> <li><b>Priority 24:</b> Brookvale as an employment and innovation centre: Establish a vibrant town centre that ensures appropriate interfaces between different land uses, enhances the tree canopy, improved public transport network, supports a day and night time economy and preserves the integrity of industrially-zoned land</li> <li><b>Priority 28:</b> Safeguard employment lands: Safeguard employment land from non-compatible uses by focusing on economic outcomes that support the population, restricting the further fragmentation of industrial lots and supporting the efficient use of land.</li> <li><b>Priority 30:</b> A diverse night-time economy: Foster an accessible and diverse night time economy that minimises land use conflict from sterilising night-time opportunities in centres</li> </ul>

Strategy & Policies	Purpose	Key actions relevant to Brookvale
 <p>The Northern Beaches Local Housing Strategy Northern Beaches Council</p>	The strategy sets a vision for the supply of future housing to meet the needs of the growing community.	<ul style="list-style-type: none"> <li>It is noted that Brookvale and Dee Why are considered priority renewal areas in support of future housing development.</li> <li>Potential additional capacity of 840 – 1,240 dwellings if the Centres Renewal Framework is applied to Brookvale (it should be noted that this covers a broader area then the study area for the revised Brookvale Structure Plan)</li> <li>Concentrated medium and higher density urban renewal should occur within 1km around accessible centres along the B-line corridor</li> <li>Brookvale is to provide medium-high density housing supply that complements the employment centre.</li> <li>Brookvale may be able to accommodate some more high density residential and mixed-use development (with ground floor retail).</li> <li>Brookvale to be prioritised as initial focus for urban renewal. However, the strategy highlights that as the LGA's largest employment centre, it is important that employment land uses are retained in the Brookvale area.</li> <li>Brookvale to be prioritised as catalyst for renewable energy innovation</li> </ul>
 <p>The draft Northern Beaches Employment Study Northern Beaches Council</p>	The study provides an analysis on the LGA's opportunities and constraints for employment lands.	<ul style="list-style-type: none"> <li>Improve the functionality of Brookvale through integrating Warringah Mall and surrounding land uses.</li> <li>Develop a focal point for the centre with protecting and managing the right mix of industrial and urban service lands.</li> <li>Concentrate commercial floorspace in the commercial core.</li> <li>Identify the likely locations to support commercial growth and prevent the commercial conversion in industrial zones.</li> <li>Leverage the emerging creative manufacturing scene/</li> <li>Refocus the role of Brookvale prioritising high skilled employment.</li> <li>It is recommended to rezone the existing B5 Business Development zones to B6 to Enterprise Corridor for the consolidated LEP for the Northern Beaches LGA. This will correspond with the existing Manly and Pittwater LEP's.</li> </ul>
 <p>The draft Northern Beaches Social Infrastructure Strategy Northern Beaches Council</p>	The study details the opportunities for the delivery of social infrastructure to cater for the future demand of the local community.	<ul style="list-style-type: none"> <li>Deliver four new, integrated multipurpose facilities in Brookvale-Dee Why Catchment to meet community needs by 2036</li> <li>Deliver one additional library by 2036 and ensure existing libraries meet benchmark size and are upgraded/expanded by 2036</li> <li>Align delivery of facilities with the hierarchy of local centres and transport hubs</li> <li>Improve overall quality of facilities in the Brookvale-Dee Why Catchment as some are recently upgraded, well located and utilised, whilst others are generally smaller and require upgrades</li> <li>Enhance the effectiveness of existing facilities</li> <li>Proactively plan for integrated multipurpose facilities in growth areas to support growing communities.</li> <li>Flexibly accommodate new ways of working and living</li> <li>Improve supply of urban parks in Brookvale- Dee Why and Manly.</li> </ul>



Strategy & Policies	Purpose	Key actions relevant to Brookvale
 <p>Affordable Housing Contributions Scheme</p> <p>Northern Beaches Council</p>	<p>The scheme will allow Council to collect contributions from developers to provide affordable housing on the Northern Beach.</p>	<p>The scheme will initially apply to the Frenchs Forest Planned Precinct and site-specific planning proposal at Narrabeen however may be extended to areas of Brookvale that are rezoned or are subject to increases in residential density in the future. Under the current Affordable Housing Contributions Scheme, Council is committed to the aspiration to deliver a 10% affordable rental housing target for urban renewal areas.</p>
 <p>Draft Northern Beaches Environment Study</p> <p>Northern Beaches Council</p>	<p>The study discusses connections, challenge and opportunities within the natural and urban environment and recommends planning actions to be implemented.</p>	<p>Planning actions include the review current controls and where necessary developing and implementing new planning controls that considering</p> <ul style="list-style-type: none"> <li>• setbacks; water sensitive urban design and stormwater controls; the protection of high environmental value coast and waterway assets; identification of council's natural assets; green infrastructure; maximisation of built form controls; mitigating urban heat; net zero carbon targets; identifies current and future natural hazards.</li> <li>• Incorporate updated biodiversity mapping into new local planning framework and biodiversity planning controls ensuring infrastructure within these areas are low impact.</li> </ul>
 <p>Draft Northern Beaches Environment &amp; Climate Change Strategy 2040 (Protect.Create.Live)</p> <p>Northern Beaches Council</p>	<p>The strategy provides a long-term vision (20 years) for the environment on the Northern Beaches. The outlines how Council will plan for a healthy and diverse natural environment that is respected, supported, and celebrated.</p>	<ul style="list-style-type: none"> <li>• <b>Protect:</b> We will protect and enhance our natural environment</li> <li>• <b>Create:</b> The places, parks, structures, district urban landscapes, homes, neighbourhoods, and the connections between them will be built sustainably to protect our environment <ul style="list-style-type: none"> <li>• <b>Theme 5:</b> Sustainable Built Environment: commitment to reducing resource consumption and installing of solar panels on 50% of suitable premises</li> <li>• <b>Theme 6:</b> Green Neighbourhoods: commitment to increasing urban tree canopy and green grid and development that is integrates and supportive of the natural environment</li> </ul> </li> <li>• <b>Live:</b> We will live sustainably every day to reduce our waste generation and resource use, and prepare for climate change <ul style="list-style-type: none"> <li>• <b>Theme 7:</b> Sustainable Living: commitment to reducing emissions, waste generation and achieve net zero by 2050</li> <li>• <b>Theme 8:</b> Adaptation and Resilience: commitment to manage risks; design, construct and maintain Public infrastructure so that it addresses climate change and ensure community resilience</li> </ul> </li> </ul>

Strategy & Policies	Purpose	Key actions relevant to Brookvale
 <p>Draft Northern Beaches Draft Resilience Strategy (Withstand.Adapt. Thrive)</p> <p>Northern Beaches Council</p>	<p>The strategy outlines visions and actions for strengthening resiliency within the community when shocks or sudden challenges such as bushfires, economic challenge, diseases and pandemics occur.</p>	<p><b>Direction 1:</b> Planning for our future</p> <ul style="list-style-type: none"> <li>• Advocate for improved transport accessibility &amp; diversity within, and out of the Northern Beaches area</li> </ul> <p><b>Direction 3:</b> Connect for strength</p> <ul style="list-style-type: none"> <li>• Celebrate the diversity of our community and increase inclusivity through activities, events and programs that promote connection, engagement and participation</li> </ul> <p><b>Direction 4:</b> A strong and dynamic local economy</p> <ul style="list-style-type: none"> <li>• Continue to undertake natural hazard mitigation and adaptation actions in areas that support economic development</li> <li>• Support local businesses to transition to a green economy and adapt to climate change</li> <li>• Review planning controls to ensure critical employment lands are protected and encourage innovation</li> <li>• Explore opportunities to increase night-time and weekend economies, in appropriate locations</li> </ul> <p><b>Direction 6:</b> A resilient natural and built environment</p> <ul style="list-style-type: none"> <li>• Develop planning controls to improve energy, water and waste efficiencies in new developments, support the push for net zero buildings and require sustainability certification for certain developments (threshold to be developed)</li> <li>• Prepare decarbonisation plans for existing precincts to identify opportunities for retrofitting and precinct scale opportunities (e.g. community solar) - as per the GBCA Climate Positive Roadmap for precincts (new and existing)</li> </ul> <p><b>Direction 7:</b> Activated places and spaces</p> <ul style="list-style-type: none"> <li>• Continue to undertake the initiatives within Council's Creative Arts Strategy (2021f) to cultivate creativity, identify opportunities for arts and cultural expression and connect our diverse communities</li> <li>• Continue to hold a diverse range of public events that activate and increase vibrancy of public spaces, provide economic benefits to local business and bring the community together in line with Council's Events Strategy (2018c)</li> <li>• Investigate options to increase opportunities for our community to access places that encourage and inspire creativity and connection</li> <li>• Increase opportunities to recognise our diverse cultural identities in public spaces in alignment with Council's Public Space Vision &amp; Design Guidelines (2021h)</li> </ul>
 <p>Northern Beaches Move Transport Strategy 2038</p> <p>Northern Beaches Council</p>	<p>The Strategy provides a long-term vision (20 years) for transport on the Northern Beaches in response to the community's priorities. It outlines key Future Directions for transport infrastructure, reducing congestion and changing travel behaviour.</p>	<ul style="list-style-type: none"> <li>• <b>Theme 1</b> Accessible and Liveable Places: Create and enhance "Places for People"</li> <li>• <b>Theme 2</b> Active Travel: Prioritise smart, active travel network improvements</li> <li>• <b>Theme 3</b> Public Transport: Plan for a high-frequency mass transit service on the Northern Beaches</li> <li>• <b>Theme 4</b> Efficient Road Network: Support the delivery of the Beaches Link Tunnel</li> <li>• <b>Theme 5</b> Smart Parking Management: Develop local parking management plans for town and village centres</li> </ul>



Appendix B – Assessment of Draft Brookvale Structure Plan 2017 and recommendations for the revised Brookvale Structure Plan

Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
NSW Premier Priorities		
Priority 11: Greener public places. Increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10 per cent by 2023.	The 2017 Structure Plan proposed Development Principle 2 "create green links and green destinations" to encourage active living and improve connectivity and access to local destinations. The Structure Plan identifies the need to create green streets that provide workable and attractive access for the east and west precincts of the Strategic Centre and also link the green grid assets across Brookvale.	The revised Structure Plan should look to improve the permeability of the town centre and provide options to link green areas within walking distances of areas identified for future housing supply.
Priority 12: Greening our city - increase the tree canopy and green cover across Greater Sydney by planting one million trees by 2022.	The 2017 Structure Plan does not detail specific action or directions to increasing the tree canopy in the investigation area.	The revised Structure Plan must include commitments to increasing the tree coverage across the investigation area. This is such as increased setbacks along Pittwater Road for public domain works and initiatives to support street tree planting focused around the town centre.
A Metropolis of Three Cities – Greater Sydney Regional Plan & North District Plan		
Maintain the mix of uses so that Brookvale-Dee Why continues to perform strongly as well-balanced, self-sustaining combined centre	The 2017 Structure Plan identifies the investigation area as the most mixed-use strategic centre within Metropolitan Sydney. The 2017 Structure Plan seeks to fulfill Brookvale's function as a major employment centre that includes industrial, commercial, retail, education, residential and community uses.	The revised Structure Plan must retain the existing mix of uses within the investigation area whilst encouraging opportunities for creative industries that align with the growth of the centre as an innovation precinct.
Encourage and support improvements to Warringah Mall and better integrate it with the fabric and life of Brookvale-Dee Why	The 2017 Structure Plan supports the revitalisation of Warringah Mall through encouraging the integration of the mall with the town centre through the proposed activation of Pittwater Road and Condamine street frontages. The Structure Plan recognises the role of Warringah Mall as a major retail centre and highlights the opportunities with the B-Line bus stop proximity.	The revised Structure Plan should further explore ways to capitalise the co-location of Warringah Mall and the B-line stop. This must include strategies to support increased demand.
Recognise and enhance the economic and employment opportunities along Pittwater Road and encourage revitalisation along the commercial strip	The 2017 Structure Plan supports the enhancement of existing commercial functions and employment opportunities within the commercial core, specifically around the B-line stop.	The revised Structure Plan must identify actions to support the enhancement of employment opportunities to ensure Pittwater Road is activated during the day and night.
Promote walking, cycling and public transport to Warringah Mall, the Brookvale industrial area and Dee Why	The 2017 Structure Plan details Aspiration 4 – shift from car dependency". The new B-line stop was identified as a 'development enabler' to encourage a shift towards active transport travel. New cycling links are also proposed.	The revised Structure Plan should provide clear direction on the creation of urban grid opportunities to increase walkability throughout the town centre. This should include identifying viable options to cross Pittwater Road and cycle routes through the investigation area.
Encourage the establishment of new, innovative and creative industries in the Brookvale industrial area	The 2017 Structure Plan acknowledges the emerging creative industries scene with boutique cafes and breweries rising. The Structure Plan identified the importance of fostering the growth of creative industries with the correlation between talent and education to allow for the diversification of the area.	The revised Structure Plan should outline opportunities to support the growth of creative industries and establish a point of difference to other emerging innovation precincts.

Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
Encourage new lifestyle and entertainment uses to activate local streets in Brookvale-Dee Why	Development Principle 4 "Activate the Brookvale Town Centre" underpins the 2017 SP. This outlines a number of initiatives including increasing street activation and a night economy with after-hour uses such as restaurants, cafes and bars. The Structure Plan also identifies the opportunity for site amalgamations to facilitate improved design outcomes that create active public interfaces.	The revised Structure Plan must further identify the priority areas for increased activation such as the commercial core and Pittwater Road. This should include activation initiatives for any significant infrastructure improvements where high patronage is expected.
Improve connections between Brookvale-Dee Why and the Northern Beaches Hospital at Frenchs Forest.	No mention is made within the 2017 Structure Plan.	The revised Structure Plan must outline feasible and viable transport connections from the Brookvale Town Centre to the Northern Beaches Hospital.
Grow investment business opportunities and jobs in strategic centres	The 2017 Structure Plan proposes the rezoning of the Town Centre from B5 Business Development to B4 Mixed use. This is strategically intended to define the Town Centre more clearly and encourage local businesses to thrive with more residential uplift in the area.	The revised Structure Plan should define actions to support local business growth and attract other businesses into the Brookvale Town Centre.
Create and renew great places and local centres, respecting the District's heritage	The 2017 Structure Plan aspires to revitalise the investigation area as a great place to live and work without adverse impact on existing heritage items.	The revised Structure Plan must ensure that future development will conserve and protect the existing heritage items in the area as they represent significant cultural importance.
Towards 2040: Northern Beaches Local Strategic Planning Statement		
Key actions		
Jobs in the strategic centre are forecast to grow from 20,000 jobs in 2016 to 23,000-26,000 by 2036 for Brookvale -Dee Why. This will largely comprise a mix of industrial, urban services and retail industries.	The 2017 Structure Plan identifies the key outcome of delivering 1,700 additional jobs by 2031 through a balance of increased employment opportunities and growth in residential development. The Structure Plan identifies the retention of employment lands paramount to ensure Brookvale continually provides its valuable contribution to jobs in the local economy.	The revised Structure Plan must ensure job growth and retainment of Brookvale as a high performing employment hub. This includes identifying significant economic opportunities to contribute to the job target for the Brookvale-Dee Why strategic centre, retention of employment lands and increasing the existing high level of job containment for the resilience of the local economy.
Grow high skilled employment opportunities and innovation-led change across existing base of urban services, manufacturing, distribution, automotive and construction industries	The 2017 Structure Plan identifies Aspiration 8 – Upskill Brookvale". However, the Structure Plan does not provide direction to achieving this.	The revised Structure Plan must provide direction on how the investigation area will increase employment opportunities for high-skilled workers in innovation-led, across existing base of urban services, manufacturing, distribution, automotive and construction industries. This will be critical in achieving increased employment opportunities for the emerging creative industries within the industrial lands of the investigation area.
Increase activity and supporting the night-time economy, creative and innovative industries and public art.	The 2017 Structure Plan promotes a night-time economy through improving activation at street level of the Brookvale Town Centre and Warringah Mall.	The revised Structure Plan must detail actions to delivering a successful night-time economy within the Brookvale Town Centre and Warringah Mall for all members and ages of the community.



Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
Preserve the industrial integrity of industrially zoned land and support Brookvale as an employment -based centre.	The 2017 Structure Plan identifies the need to support industrial land to support the sustainable long-term growth of the centre. This includes ensuring industrial land can respond to the changing future employment trends and patterns.	The revised Structure Plan must ensure the retention of existing industrially zoned land for the development of employment opportunities. This will require maintaining industrial lands to remain viable and well utilised to support local jobs and through the consideration application of planning controls to be adapted for future growth.
Provide renewal opportunities that will support Brookvale as a place for jobs, new housing will be provided subject to infrastructure such as B-Line improvements, public transport to Chatswood and an express bus to Manly.	The 2017 Structure Plan seeks to leverage the B-line service and the opportunities it generates to grow Brookvale as a high performing centre. The Structure Plan identifies the need to build upon the B-line stop through transit-oriented development and exploring opportunities for affordable housing and greater housing choice to bring life into Brookvale in addition to supporting local businesses.	The revised Structure Plan must support the key outcomes of leveraging the B-line to best support the Brookvale centre for increased job and housing growth.
Promote development that maintains or restores the community's uses and value of waterways, ecological conditions, watercourses and beaches.	The 2017 Structure Plan recognises how the existing environment is a key component to reinforcing the natural amenity of the area and has identified Aspiration 7 – link beach to bush".	The revised Structure Plan should include actions to enhance the environmental assets of the investigation area to make it a more attractive place to work and live.
Principles for Brookvale		
Support Brookvale as an employment-based centre.	The 2017 Structure Plan identifies the need to retain Brookvale as an employment-based centre as a key priority.	The revised Structure Plan should maintain the focus of Brookvale as an employment hub which will be supported by residential growth.
Establish a town centre-activity point and open space outside of Warringah Mall	The 2017 Structure Plan acknowledges the site-specific controls for the future development of the Warringah Mall site contained in the Warringah DCP. The Structure Plan relies on these controls to guide the development of Warringah Mall.	The revised Structure Plan must demonstrate how the open space outside of Warringah Mall will be utilised to expand the centre and contribute to establishing its role as a major retail centre servicing the LGA. This should be consistent with the DCP built form controls and objectives established for the site.
Support the expansion of Warringah Mall and integrate it with surrounding built form	The 2017 Structure Plan recognises the importance of Warringah Mall as a major retail core for the strategic centre and supports its ongoing role and need to expand over time.	The revised Structure Plan must provide further clarification to how the expansion of Warringah Mall will be supported.
Bring life back to the streets, including revitalisation of the main commercial strip	The 2017 Structure Plan identifies the strategic intent to revitalise and activate the Brookvale Town Centre. The Structure Plan identifies the need to maximise activation along the Pittwater frontage to capitalise on the co-location of Warringah Mall and the B-Line.	The revised Structure Plan must provide further direction in how the centre will be activated at key location identified in the 2017 SP. This should identify key actions that will drive activation both during the day and night.
Ensure appropriate interfaces between different land uses.	The 2017 Structure Plan recognises the importance of creating appropriate interfaces at land use boundaries. This includes proposing the extension of the B4 Mixed use zone into IN1 Industrial zone to front the eastern side of Dale street to provide a natural boundary and prevent potential interface issues.	The revised Structure Plan must prevent potential land use conflicts.
Enhance tree canopy and provide green links to Brookvale Park, Warringah Mall and the B-Line.	The 2017 Structure Plan identifies the need to "create green links and green destinations" as a key development principle for Brookvale.	The revised Structure Plan must investigate opportunities to expand the 'green' the urban environment of Brookvale. This should include incentives or contributions to the public domain.
Enhance Brookvale's identity and define gateways to create a sense of arrival	The 2017 Structure Plan proposed two gateway areas, one at each end of the northern and southern entrances to the Town Centre that must evoke a sense of arrival and assist in wayfinding.	The revised Structure Plan must be committed to delivering the proposed gateways and align with the DCP controls specifying built form, façade treatments and other requirements to strongly define and reinforce the prominence of the gateways.

Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
Improve public transport and regional cycle networks to Sydney CBD, Frenchs Forest, Mona Vale and Manly.	The 2017 Structure Plan seeks to encourage commuter cycling and shifting the centre away from car dependency. The Structure Plan outlines the action of integrating key pedestrian and cycle opportunities to encourage active living with proposed green links and streets for increased accessibility. Bike initiatives align with Council's bike plan.	The revised Structure Plan must detail specific cycle routes in accordance with regional networks, in addition to the established links identified in Council's bike plan. The revised Structure Plan must encourage greater cycling opportunities to support active living.
Support the night-time economy, creative and innovative industries and public art.	The 2017 Structure Plan recognises the importance of the emerging creative industries within the industrial lands, and identifies it as a catalyst for future employment growth and development.	The revised Structure Plan must demonstrate how the emerging creative industries will be fostered in the investigation area. This must include recognising the diversity of these uses. This includes ensuring opportunities that support a night-time economy.
Preserve the industrial integrity of the industrial zoned land.	The 2017 Structure Plan acknowledges the importance of protecting and retaining industrial zoned lands whilst providing flexibility to accommodate changing business needs.	The revised Structure Plan must retain existing industrial lands.
Key priorities		
Priority 12: An inclusive, healthy, safe and socially connected community	The 2017 Structure Plan seeks to enliven the Brookvale Town Centre to meets community aspirations.	The revised Structure Plan must plan to create places that foster interaction and healthy lifestyles, creativity and enterprise and innovation.
Priority 17: Centres and neighbourhoods designed to reflect local character, lifestyle and demographic changes	The 2017 Structure Plan identifies Brookvale as the most mixed -use strategic centre in metropolitan Sydney with a diverse character and business make-up.	The revised Structure Plan should seek to enhance the existing character of the centre to best respond to the needs of the growing community.
Priority 24: Brookvale as an employment and innovation centre	The 2017 Structure Plan includes the consideration of four scenarios to assess the potential and attainable growth approaches. The Structure Plan determined scenario three as the best outcome to ensure the growth of the strategic centre with an employment focus. This model anticipated 1,700 additional jobs and 1,200 residents in 2031.	The revised Structure Plan should build upon the same key focus of developing Brookvale as an employment hub supporting job growth in various industries, capitalising on the large mix-use opportunities.
Priority 28: Safeguard employment lands	The 2017 Structure Plan recognises the importance of Brookvale's employment lands to the economic viability of the town centre. The Structure Plan sought to consolidate Brookvale as an employment focused strategic centre that continually supports the local and regional businesses in the area.	The revised Structure Plan must build upon the key employment outcomes of the 2017 Structure Plan and continue to prioritise the retainment of employment land.
Priority 30: a diverse night-time economy	The 2017 Structure Plan supports the diversification of uses to promote a night-time economy within the Industrial Area East and Warringah Mall. The Structure Plan recommends LEP amendments to permit "food and drink premises". The Structure Plan encourages the development of the night time economy through improving activation at street level of Brookvale Town Centre and Warringah Mall.	The revised Structure Plan should provide clear direction in delivering a night-time economy that also align with the emerging culture of Brookvale's creative industries.
Northern Beaches Housing Strategy		



Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
It is noted that Brookvale and Dee Why are considered priority renewal areas in support of future housing development.	The 2017 Structure Plan supports the growth in housing diversity and affordability with the retention of employment lands. The Structure Plan supports the development mixed use developments to provide greater housing choice within the Brookvale Investigation Area.	The revised Structure Plan should consider mixed use development opportunities in existing B5 business development zones (where residential is currently permitted) to increase housing supply with ensuring the retainment of the employment lands.
Capacity for 1200 dwellings (covers a broader area then the study area for the revised Brookvale Structure Plan)	The 2017 Structure Plan identified capacity for 670 additional dwellings.	The revised Structure Plan must identify the feasible capacity of additional dwellings in high, medium and low density built-form. This should identify approximate locations to support this growth at different densities.
Concentrated medium and higher density urban renewal should occur within 1km around accessible centres along the B-line corridor	The 2017 Structure Plan proposes shop top housing typologies within the Brookvale town centre. The newly created residential development will be located within 800 metre radius from the B-line stop. Further, the Structure Plan recognises the Town Centre's ability to accommodate increased height and density which enhances the vitality of the area.	The revised Structure Plan should identify locations for medium and high density development around the B-line. This should build upon directions outlined in the 2017 Structure Plan and look to maximise the co-location of Warringah mall and the B-line stop as an opportunity.
Brookvale is to provide medium-high density housing supply that complements the employment centre.	The 2017 Structure Plan encourages mixed use medium and high-density development to assist viable commercial development and support local businesses.	The revised Structure Plan should identify locations for medium-density housing supply opportunities that will contribute to the existing local job retainment and existing employment centre.
Brookvale to be prioritised as initial focus for urban renewal. However, the strategy highlights that as the LGA's largest employment centre, it is important that employment land uses are retained in the Brookvale area.	The 2017 Structure Plan primarily focuses Brookvale as an employment centre, committing 60% of the additional floor space to employment and 40% to residential.	The revised Structure Plan should seek to increase employment opportunities through planning controls. This includes identifying how existing employment land uses will be sustainable for the long-term.
Northern Beaches Employment study		
Improve the functionality of Brookvale through integrating Warringah mall and surround land uses.	The 2017 Structure Plan recognises Warringah Mall as the retail core of the Brookvale Town Centre. Warringah Mall's close proximity with the B-Line will increase accessibility and encourage activation to surrounding land uses.	The Revised Structure Plan should encourage Warringah Mall to respond to the B-Line stop through improving Pittwater Road frontage to be more pedestrian friendly. This should build upon directions identified in the 2017 Structure Plan.
Develop a focal point for the centre with protecting and managing the right mix of industrial and urban service lands.	The 2017 Structure Plan identifies Warringah Mall as the centre of the Town Centre as it maintains a "one stop shop" destination for the region. The Structure Plan supports the Mall with maintaining the existing industrial urban service lands.	The revised Structure Plan must identify the core of the investigation area and ensure that it will complement renewal activity and ensure the management of industrial lands.
Concentrate commercial floorspace in the commercial core.	The 2017 Structure Plan proposed a mixed-use zoning with the town centre with ground levels primarily for commercial floor space in the form of retail or offices.	The revised Structure Plan should detail locations that will best support commercial floorspace to support the commercial core.
Identify the likely locations to support commercial growth and prevent the commercial conversion in industrial zones.	The 2017 Structure Plan identifies growth in the Town Centre with retainment and enhancement of Brookvale's industrial land to support growth as a sustainable employment focus centre a key priority.	The revised Structure Plan must demonstrate how identified locations for commercial growth will support the future demand of commercial floorspace. This should include detailing how industrial lands will be safeguarded through planning controls.

Priority / action	Does the 2017 Structure Plan address this?	Recommendation for the revised Structure Plan
Leverage the emerging creative manufacturing scene	The 2017 Structure Plan plan identifies the inclusion of creative industries in industrial precincts as a development enabler that is essential for the growth of the area.	The revised Structure Plan should continue to support the growing niche manufacturing scene emerging in the area. This includes the consideration of ideal locations for these creative industries to grow within the investigation area.
Refocus the role of Brookvale prioritising high skilled employment	The 2017 Structure Plan identifies Aspiration 8 – Upskill Brookvale"".	The revised Structure Plan must provide greater business opportunities for professional industries and attract high skilled employees.
Draft Northern Beaches Social Infrastructure Strategy		
Deliver three new, integrated multipurpose facilities in Brookvale-Dee Why Catchment to meet community needs	The 2017 Structure Plan is silent on these matters. This is a result of the social infrastructure strategy only being recently prepared, and the 2017 Structure Plan at the time focused on the employment growth within the Brookvale Investigation Area.	The revised Structure Plan must present opportunities to deliver a multipurpose facility within the Brookvale Centre as a result of the existing gap in the investigation area.
Align delivery of facilities with the hierarchy of local centres and transport hubs		The revised Structure Plan should facilitate opportunities to deliver community facilities to support the growth and uplift of the investigation area. This should utilise the co-location of facilities such as the Warringah Library within the Warringah Mall.
Flexibly accommodate new ways of working and living		The revised Structure Plan must provide cultivating spaces for people to connect, create and learn. This may include exploring affordable co-working and economic development spaces.
Enhance the effectiveness of existing facilities		The revised Structure Plan should look to enhance and renew existing community facilities such as the Warringah Mall Library.
Proactively plan for integrated multipurpose facilities in growth areas to support growing communities.		The revised Structure Plan must encourages the provision of community spaces and facilities that meet the changing needs of community . This must accommodate all age groups and abilities.



Since the previous Structure Plan, a range of new economic and projections data has been made available. These include 2016 Census updated State Government population projections, Northern Beaches SGS (2020) draft Housing Strategy, Northern Beaches SGS (2019) Employment Lands Study, Northern Beaches LSPS and associated planning guidelines as outlined in section 4.

Ethos Urban has been engaged to undertake a peer review of the previous Structure Plan and incorporate latest data and analysis from the SGS (2020) Housing Strategy and SGS (2019) Employment Lands Study as provided by Northern Beaches Council. This section outlines the updated economic inputs and projections taking into account the results of these recent studies and current trends as they apply to Brookvale. This analysis was completed in 2020, figures for 2022 have been provided where appropriate.

The methodology adopted in this section and the projections include:

- SGS outputs from the Housing Strategy and Employment Lands Study;
- Transport for NSW projections for residential and employment growth;
- Northern Beaches Council inputs into the vision for Brookvale;
- Latest relevant economic trends and impacts for Brookvale.

**Study Area Definition**

The demographic and economic analysis ha defined a number of study areas using Statistical Area Level 1s (SA1s).The following study areas form the basis of the analysis:

Northern Study Area, Eastern Study Area and a Western Study Area has been defined to capture.The boundaries for these study areas have been determined by land use patterns and the road network.

A Total Study Area has been defined that is the aggregation of the above study areas.

1km Investigation Area has been defined to reflect the broader region surrounding the Brookvale Study Area. This has been defined using similar criteria to that outlined in the Northern Beaches Housing Strategy and agreed with Northern Beaches Council – namely, a 1km radius from the B-line bus stop in Brookvale

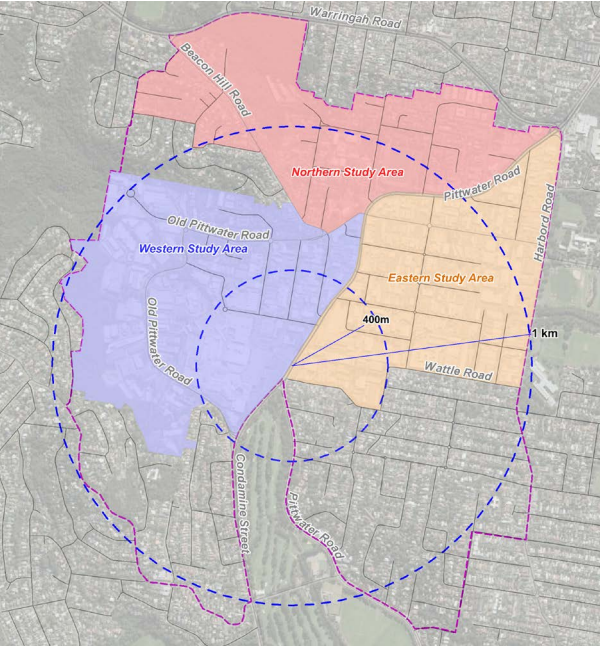


Figure 20: Aerial of the structure plan study areas

Economic trends

Since the previous Structure Plan, a number of key economic trends have continued to emerge with a range of implications for uses including residential, retail, commercial, industrial, education and health industries. In this section, the most relevant current regional and local economic trends are considered.

The trends of most relevance to the future growth and development of Brookvale are summarised and outlined below.

- **Transport infrastructure.** Will improve accessibility and alignment between households and workplaces, retail, health and education. In Brookvale, this projects such as continued investment in the B-line and the Beaches Link Tunnel will be of particular relevance.

- **Technology and automation.** Technology and automation will play a large role in the operation and build form requirements for all sectors but particularly for the commercial and industrial sectors. Increased automation may reduce the number of workers but also increase space requirements for equipment and machinery.
- **Ecommerce.** Online retail is transforming the way the retail sector operates, with implications for traditional brick and mortar stores as well as the industrial sector through supply-chain operations.

- **COVID-19.** While the magnitude of impacts and long term consequences are uncertain, the impacts of the pandemic are likely to have effects on a range of land uses. This includes short term impacts on population growth, student and international visitation but also medium to longer term impacts including a structural shift in community lifestyle, and work from home arrangements.

A summary of the demand effects of these trends on a broad range of land uses is illustrated in Table 24 below.

Table 24: Trends and Land Uses - demand implications

Trend	Residential	Retail	Commercial	Industrial	Health, Education and other
Transport Infrastructure	▲	▲	▲	▲	▲
Technology and Automation			▼	▲	▼
Ecommerce		▼		▲	
COVID-19	▲	▼	▼	▲	▲

Note: analysis completed in 2022



Resident population projections

Population projections have been developed using an iterative approach that has considered historic demographic trends, official population projections from DPIE and TfNSW as well as inputs from the Northern Beaches SGS (2020) Housing Strategy and the broader Structure Plan project team, including capacity analysis from Urban Design and feasibility testing from Atlas Urban Economics. Underlying these projections is the view that there is strong demand to live in the Study Area and any additional dwelling capacity will be readily absorbed by strong take-up rates.

In the Total Study Area, the population is projected to increase from 4,300 residents in 2020 to 5,710 by 2041, an increase of +1,410 residents. Most of this population growth will be concentrated in the Northern Study Area and Western Study Area, and in future town centre.

Table 25: Population Projections, 2020 to 2041

Population	2020	2022	2031	2036	2041	2020 to 2041
Total Study Area	4,300	4,390	4,890	5,160	5,710	+1,410
Northern Study Area	2,830	2,880	3,180	3,360	3,500	+670
Eastern Study Area	60	60	60	60	60	+0
Western Study Area	1,410	1,450	1,630	1,730	2,060	+650
1km Investigation Area	9,960	10,030	10,370	10,560	11,050	+1,090
Growth						
Total Study Area		+50	+60	+50	+110	+70
Northern Study Area		+30	+30	+40	+30	+30
Eastern Study Area		+0	+0	+0	+0	+0
Western Study Area		+20	+20	+20	+70	+30
1km Investigation Area		+40	+40	+40	+100	+50
Growth Rate						
Total Study Area		1.0%	1.2%	1.1%	2.0%	1.4%
Northern Study Area		0.9%	1.1%	1.1%	0.8%	1.0%
Eastern Study Area		0.0%	0.0%	0.0%	0.0%	0.0%
Western Study Area		1.4%	1.3%	1.2%	3.6%	1.8%
1km Investigation Area		0.4%	0.4%	0.4%	0.9%	0.5%

Source: ABS, 2020; TfNSW (2019); Ethos Urban  
Note: analysis completed in 2020, 2022 figures provided for illustrative purposes

Within the 1km investigation area, population growth is projected to be relatively low for those areas not in the Total Study Area. This is based on the assumption that little residential activity will occur within these areas under current controls, with the number of dwellings approaching capacity for the area. Should this area be considered for development in the future, such as through a medium density development option, it is expected that population growth will grow in line with any future residential projects. Most of this activity would be expected to locate in the area to the south east of the B-line stop due to its low existing density and proximity to amenities and the major transport hub.

Table 26: Headline Employment Projections, 2020 to 2041

Employment	2020	2022	2031	2036	2041	2020 to 2041
Total Study Area	14,170	14,520	16,610	17,880	19,990	+5,820
Northern Study Area	1,080	1,110	1,250	1,340	1,490	+410
Eastern Study Area	5,470	5,590	6,330	6,760	7,530	+2,060
Western Study Area	7,620	7,830	9,040	9,780	10,980	+3,360
1km Investigation Area	14,630	15,000	17,160	18,480	20,670	+6,040
Growth						
Total Study Area		+180	+230	+250	+420	+280
Northern Study Area		+20	+20	+20	+30	+20
Eastern Study Area		+60	+80	+90	+150	+100
Western Study Area		+110	+130	+150	+240	+160
1km Investigation Area		+190	+240	+260	+440	+290
Growth Rate						
Total Study Area		1.2%	1.5%	1.5%	2.3%	1.7%
Northern Study Area		1.4%	1.3%	1.4%	2.1%	1.5%
Eastern Study Area		1.1%	1.4%	1.3%	2.2%	1.5%
Western Study Area		1.4%	1.6%	1.6%	2.3%	1.8%
1km Investigation Area		1.3%	1.5%	1.5%	2.3%	1.7%

Note: analysis completed in 2020, 2022 figures provided for illustrative purpose; Projections are based on the TfNSW employment projections.

These population projections are lower than the previous Structure Plan which projected an additional +1,200 residents by 2031, compared to +500 under the above projections. This difference is primarily driven by higher dwelling yield capacity under the previous Structure Plan. As noted elsewhere in the report, there is strong demand for housing within the Total Study Area, additional housing through changes in planning controls will likely be readily absorbed resulting in higher population growth than projected.

**Employment projections**

The employment projections adopted have gone through an iterative approach that has considered official employment projections from Transport for NSW, as well as the viability of commercial, industrial, and retail development. The historic and future trends that are influencing jobs growth in Australia and in the Total Study Area have also been considered. In addition, these projections have been based on a view of Brookvale as a true mixed use employment and residential centre that is able to consolidate its role

as the Northern Beaches major strategic centre, with high levels of employment across of a range of industries including industrial, knowledge intensive, and retail.

The table below presents the headline employment projections for each of the study areas. In the Total Study Area, employment is projected to increase from 14,170 in 2020, to 19,990 by 2041, an increase of +5,820 jobs. Most of this employment growth is expected to occur in the Western Study Area.

Employment growth will need to align with the local workforce to ensure there is a match between high skilled local workers and the types of local jobs being provided. In order for this to be achieved, the types of business that require high skilled workers will need to be attracted to locate within the area and incentivised to remain in the area.

**Worker floorspace demand**

In order to analyse employment projections, this assessment runs through the following methodology and is illustrated below:

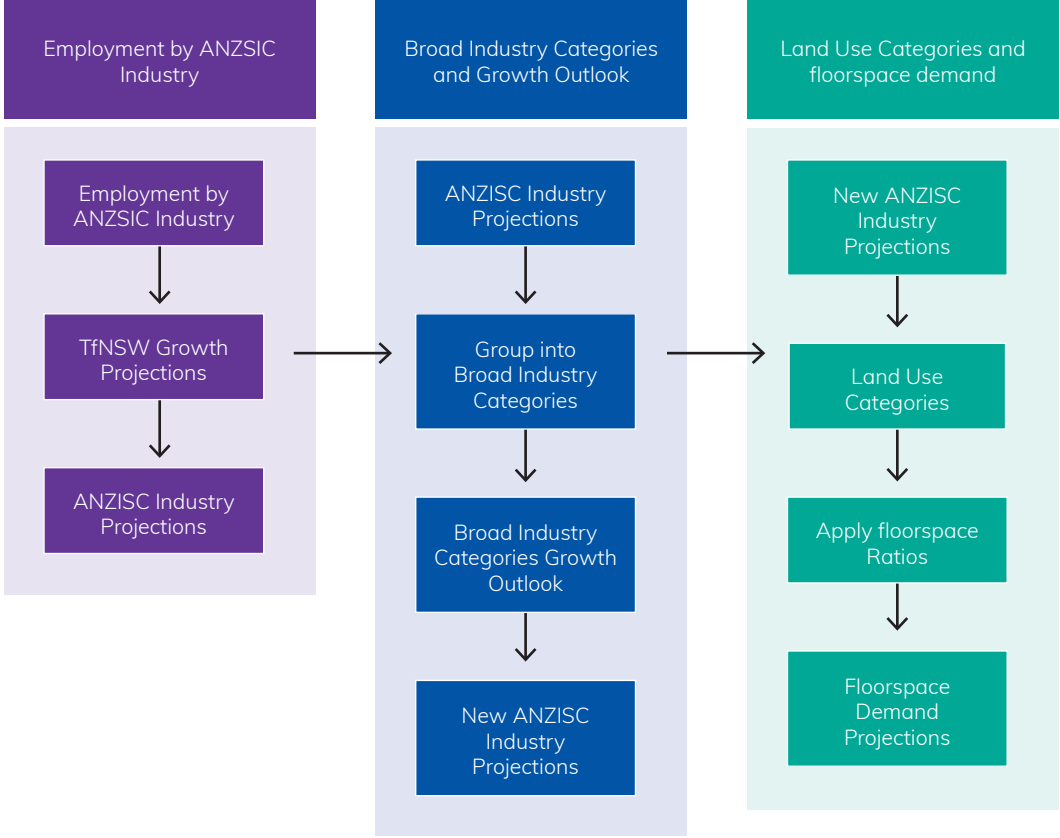
- 1. ANZSIC level TfNSW projections
- 2. Group into Broad Industry Categories
- 3. Apply projected growth rate assumptions to Broad Industry Categories
- 4. Reapply ANZSIC industry projections using these Broad Industry Category projected growth rate assumptions
- 5. Group into land use categories

**Broad industry classification**

The ABS groups employment into industries using the Australian and New Zealand Standards Industrial Classification (ANZSIC) framework. This framework classifies industries according to their productive activities.

For the purposes of estimating employment projections, these ANZSIC industries are grouped into Broad Industry Categories, as these Broad Industry Categories have similar

economic drivers (see Table 8 below for classification). For instance, many industries provide population services, such as household services, and construction services. The number of jobs in these industries increases, as population growth increases the demand for these services – all else being equal. For other industry groupings, such as, 'industrial', technological trends are changing the way these businesses operate by utilising more equipment and machinery and less labour, these businesses are reducing their overall demand for labour, and as such jobs growth is expected to be proportionately weaker going forward (see Table 26 below).



**Figure 21** Employment projections to land use methodology  
Source: Ethos Urban



The key drivers and an overview of each category is defined below:

- **Population serving.** Industries within this category tend to provide services to households and individuals. As population grows, so does employment to respond to increased demand for population services.
- **Knowledge workers.** Industries within this category a key factor is the ability to attract and retain high skilled workers. As such, locational and regional factors play a key role as well as the areas access to high skilled labour market. For the purposes of this analysis, a new role has been identified for Brookvale in creating knowledge intensive commercial precinct that leverages off industrial precincts and strategic position in the

Northern Beaches. Historic trends in knowledge worker growth in South Sydney have been used as a guide to estimate how Knowledge workers industry will evolve within Brookvale.

- **Traditional officer workers.** Industries within this location tend to be driven by availability of commercial space and demand from both residents and local businesses.
- **Industrial.** Broad industrial trends, such as technology, and automation, land use capacity, land values and rents are the main economic drivers for this category. However, there is a role for Brookvale in providing higher order industrial uses, such as advanced manufacturing and medical equipment manufacturing. As such, while employment may

fall in traditional industries, this will be partly offset by increases in employment in these new industries. This will also lead to a change in the composition of the workforce, away from blue collar to white collar work.

- **Health and Education.** Tied to population growth; however, employment in these industries can also be 'lumpy' and is influenced by major projects (e.g. universities and hospitals). For the purposes of this analysis, the growth outlook is tied to population growth.

A growth outlook and growth projection is applied to each of the Broad Industry Categories and is summarised in Table 27 below.

Table 27 Employment Projections by Broad Industrial Categories, Total Study Area, 2020 to 2041

ANZSIC industry	Broad Industry Categories*	Current Share of Employment	Growth Outlook	Growth Projection
<ul style="list-style-type: none"><li>• Construction</li><li>• Retail Trade</li><li>• Accommodation and Food Services</li><li>• Arts and Recreation Services</li><li>• Other Services</li></ul>	Population serving	26.5%	Tied to population growth	Moderate growth at +1.4%.
<ul style="list-style-type: none"><li>• Information Media and Telecommu- nications</li><li>• Financial and Insurance Services</li><li>• Professional, Scientific and Technical Services</li></ul>	Knowledge workers	43.1%	Benchmarked against Alexandria and South Sydney knowledge worker hubs	High growth at +3.3%
<ul style="list-style-type: none"><li>• Rental, Hiring and Real Estate Services</li><li>• Administrative and Support Services</li><li>• Public Administration and Safety</li></ul>	Traditional office workers	13.5%	Traditional office workers aligned to historical transport projections and population growth.	Moderate growth at +1.2%
<ul style="list-style-type: none"><li>• Agriculture, Forestry and Fishing</li><li>• Mining</li><li>• Manufacturing</li><li>• Electricity, Gas, Water and Waste Services</li><li>• Wholesale Trade</li><li>• Transport, Postal and Warehousing</li></ul>	Industrial	7.2%	Tied to population growth	Positive growth at 1.3%
<ul style="list-style-type: none"><li>• Education and Training</li><li>• Health Care and Social Assistance</li></ul>	Health and education	9.9%	Tied to population growth	Moderate growth at +1.4%.

Source: TfNSW; Ethos Urban  
Note: Note: analysis completed in 2020; Broad Industry Categories are adopted from the TfNSW.

**Draft structure plan – worker  
floorspace demand**

The previous Structure Plan presented an assessment for future floorspace demand by land use. The floorspace ratios used in the previous Structure Plan are analysed and referenced below (see Table 28). Worker floorspace ratios been reviewed and updated through an iterative process with the economic, planning and design teams and a reference to industry benchmarks and how these industries are likely to grow and evolve in the future.

**Competitive environment**

In this section, Brookvale is compared against competing centres within Northern Beaches and the surrounding region. Estimates of composition by use which has been drawn by the SGS (2019) draft Employment Lands Study and SGS (2020) draft Housing Strategy, and previous Structure Plan where appropriate.

The table compares Brookvale against key competing centres within the Northern Beaches and in the surrounding area. The centres within Northern Beaches are ranked

in terms of distance to Brookvale, as this is one of the primarily criteria in determining degree of competition between centres.

The table then compares these centres along the broad land use categories adopted in this report. For each centre, the landscape for each land use is identified in terms of current provision and offer, types of facilities, locations, quantum and any other relevant features. In addition, key centres outside northern beaches have also been considered and identified using a major or minor scale. This scale captures the depth in terms of quantum and scale of each land use within these centres.

Table 28 Employment Projections by Land Use and Floorspace Demand, 2020 to 2041

Land use	Floorspace Ratios from previous Structure Plan	Assumed floorspace ratio	Implied Floorspace demand (2020 to 2041)
Industrial	15	75.0	+155,210 m <sup>2</sup>
Retail	28	30.1	+21,670 m <sup>2</sup>
Commercial	25	25.0	+54,110 m <sup>2</sup>
Education	25	25.0	+3,250 m <sup>2</sup>
Health Care	25.1	25.1	+3,770 m <sup>2</sup>
Other services	30.1	30.1	+6,320 m <sup>2</sup>

Source: Previous Structure Plan; Ethos Urban  
Note: analysis completed in 2020





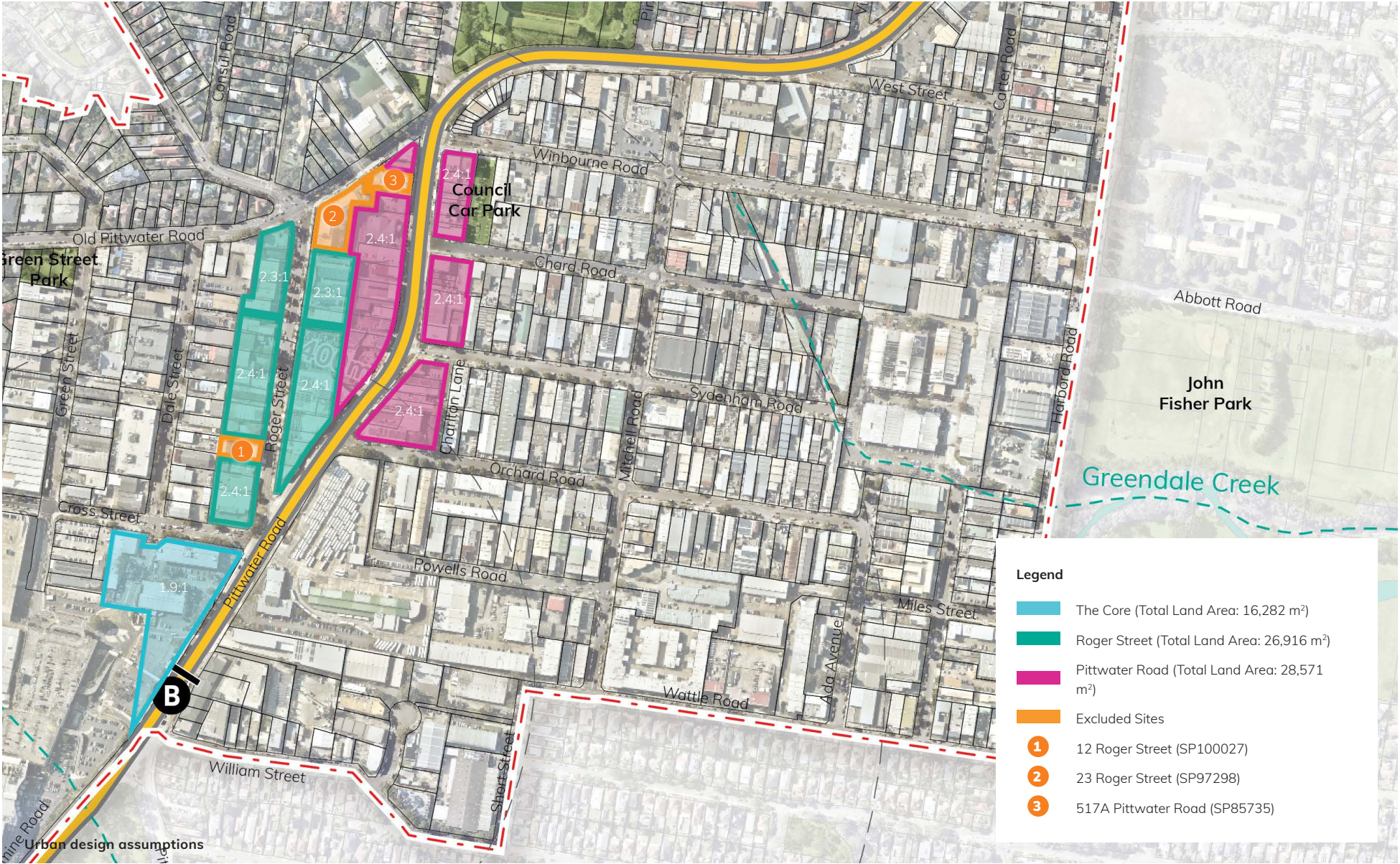
	Distance from Brookvale (km)	Residential	Retail	Commercial office	Industrial	Health, Education and Other
Study Area	n.a.	Predominantly low density housing and focused in the Northern Study Area. Some medium to high density along Old Pittwater Road and Roger Street. Brookvale identified as a centre with existing capacity under SGS (2020) Housing Strategy. Current housing gap identified: 6,430 dwellings; 1,180 additional dwelling capacity under current controls (as per SGS (2020) Housing Strategy). Identified as a priority for renewal given access created by B-line. Strategic Centre under LSPS.	Extensive retail offering focused around <a href="#">Warringah Mall</a> . A regional shopping centre serving a much broader catchment than Brookvale only and providing almost 400 speciality stores with anchor tenants including Coles, Woolworths, Aldi, Target, Big W, David Jones, Myer, Bunnings. Approximately 135,211 m <sup>2</sup> of retail floorspace. A range of retail facilities (predominately non-food) are provided along Pittwater Road including showrooms and bulky goods facilities. Retail facilities along Pittwater Road impacted by reduced amenity due to busy road, several vacancies provided. A handful of smaller retail uses such as take-away stores and cafés are located throughout the broader industrial precincts, primarily servicing local workers.	Moderate commercial office offering dispersed throughout precinct. This includes several older office facilities. Two recently fairly modern buildings in the Western Study Area including Lifestyle Working - a popular commercial building offering co-working and short term lease arrangements, located immediately west of Warringah Mall with limited vacancy. Diverse range of commercial suites typically ranging between 6m <sup>2</sup> to 180m <sup>2</sup> . Commercial vacant floorspace accounts for 31% of all vacant stock in Brookvale, with two thirds being older quality stock. Estimated 182,060m <sup>2</sup> of commercial floorspace.	Significant industrial area with extensive industrial offering. Industrial lands divided east and west by Pittwater Road. <a href="#">Eastern precinct</a> is primarily more intensive industry including concrete batching and manufacturing, while the <a href="#">western precinct</a> is more light industry, storage, showroom and an evolving mix of commercial and industrial. Extensive range of industrial services and clusters are provided including urban services and automotive. Newer facilities include Woolworths 'dark store' that has opened focussed on serving Northern Beaches ecommerce requirements. Other operators include several breweries. Significant amount of older stock (60%). Estimated 342,990 m <sup>2</sup> of industrial floorspace.	Small provision of health and education facilities, generally focussed on serving the immediate population. One exception is TAFE NSW Northern Beaches located to the south of the Study Area. A number of schools are located within the Study Area that serve the local community, with several schools within the broader 1km investigation area. Several childcare centres are provided along with other sporting and recreational facilities including Brookvale Park, to the north of the Study Area. Estimated 75,750 m <sup>2</sup> of health and education floorspace; estimated 41,800 m <sup>2</sup> of community floorspace.
Balgowlah – Manly Vale	2 – 3 km	Major residential offering including low density and medium density, supported by pockets of high amenity and lifestyle factors. Manly Vale: 10,290 dwellings; 430 additional dwelling capacity under current controls. Identified as a priority for renewal given existing B-line. Identified as a Local Centre under LSPS.	Stockland Balgowlah shopping centre anchored by Coles and contains around 50 speciality stores. Forming part of a mixed use development with residential uses. Other majors in the area include Woolworths, Aldi, and another Coles. Balgowlah: estimated 15,650 m <sup>2</sup> of retail floorspace. Manly Vale: estimated retail floorspace of 24,220 m <sup>2</sup> .	Minor commercial offering and primarily shopfront offices providing services to the local population. 49,390 m <sup>2</sup> of estimated floorspace Balgowlah: estimated 49,390 m <sup>2</sup> of commercial floorspace. Manly Vale: estimated 70,460m <sup>2</sup> of commercial floorspace.	Small industrial area, with large format industrial buildings. Industrial stock is limited and tightly held, with generally low levels of vacancy. Manly Vale: estimated 7,880 m <sup>2</sup> of industrial floorspace	Several health and educational facilities and childcare centres are provided serving the local community. Balgowlah: estimated 27,310 m <sup>2</sup> of health and education; estimated 8,760 m <sup>2</sup> of community space. Manly Vale: estimated 81,130 m <sup>2</sup> of health and education, estimated 12,011 m <sup>2</sup> of community space.

	Distance from Brookvale (km)	Residential	Retail	Commercial office	Industrial	Health, Education and Other
Dee Why	2 - 3 km	Extensive residential offering, with Dee Why an established mixed use centre. Several high density mixed use developments have occurred in recent years. Strong lifestyle factors and access to the beach a key attractor. Identified as a centre with existing capacity under SGS (2020) draft Housing Strategy. 17,030 dwellings; 1,530 additional dwelling capacity under current controls. Identified as a priority for renewal given existing B-line. Strategic Centre under LSPS.	Significant retail offering with a mix of several local centres and a strong food and beverage offer. Dee Why Village plaza contains a Coles and 20 specialist stores. Woolworths located in Lighthouse by Meriton with ground floor retail. Dee Why Grand contains an Aldi and Coles around 30 speciality stores. Pittwater Road contains a strong mix of retail facilities ranging from convenience retail, food and dining through to retail services serving the local community. A small retail strip is provided opposite Dee Why Beach and includes a strong food catering focus. Estimated 35,800 m <sup>2</sup> of retail floorspace.	Major commercial offering, with commercial facilities typically running along Pittwater Road. Facilities benefit from the strong amenities and access. Estimated 258,894 m <sup>2</sup> of commercial floorspace	Limited industrial uses, being predominately urban services and generally focussed around Pittwater Road. Estimated 6,110 m <sup>2</sup> of industrial floorspace.	A range of health and educational and childcare centres are located in the area, serving the local population. Estimated 65,270 m <sup>2</sup> of health and education; estimated 62,180 m <sup>2</sup> of community space
Frenchs Forest	2 – 4 km	Major local suburban area with predominately low density, detached housing. Future Frenchs Forest Planned Precinct. Strategic Centre under LSPS.	Moderate retail offering with Forestway Shopping Centre the main destination, a local centre with around 40 stores. Anchor tenants include Woolworths and Aldi. Approximately 9,600 m <sup>2</sup> of retail floorspace Limited retail provision outside centre, primarily food catering facilities servicing the local workforce. Estimated 12,120 m <sup>2</sup> also provided in neighbouring Forestville.	Solid level of commercial office facilities provided, with several business and office parks. Offer typically focused around larger floorplates in 2-3 storey developments focused either side of Warringah Road. New office stock on Rodborough Road. High level of vacant floorspace at around 29,190 m <sup>2</sup> . More than half (63%) is refurbished or modern, while 30% is older stock. Future commercial uses likely to align with health care and new Northern Beaches Hospital. Estimated 516,365 m <sup>2</sup> of commercial floorspace	Several industrial facilities provided, generally focussed around Warringah Road. A proportion of industrial floorspace is co-located with commercial office uses within business and office parks situated within the area.	Major health and education centre and the dominant location for these type of facilities within the Northern Beaches. Established hospital and healthcare precinct focussed around the new Northern Beaches Hospital. A range of educational facilities and community destinations are also provided including sport and recreational facilities.



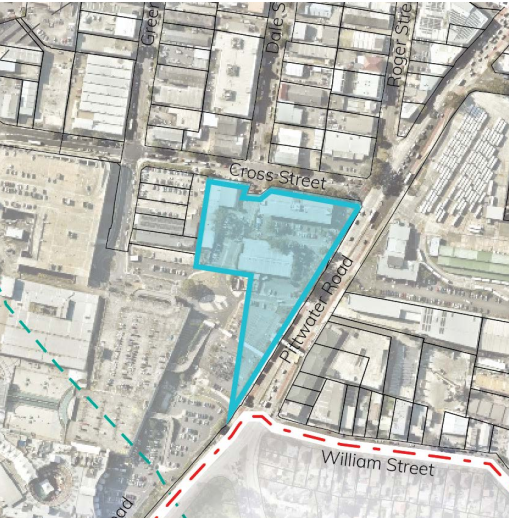
	Distance from Brookvale (km)	Residential	Retail	Commercial office	Industrial	Health, Education and Other
Manly	3 – 4km	Significant residential offering with a mix of low density housing in the suburb, increasing to medium to higher density around the town centre. Number of older residential facilities. Strong lifestyle factors with the beach, ferry links to Sydney CBD and Sydney Harbour; high amenity and outdoor areas.	Significant retail offer, focused along Manly Corso, including a strong provision of cafes and restaurants. The area forms a key destination for the Northern Beaches population as well as serves the tourist market. Major tenants include Aldi, Woolworths Metro, and Coles. Harris Farm is also provided in the north. Estimated 24,220 m² of retail	Significant level of commercial office provided, generally focused around the town centre and The Corso. The area acts as one of the major commercial centres within the Northern Beaches, benefiting from strong access and high amenity and offer. Estimated 255,780 m² of commercial floorspace.	Minimal industrial uses and focused around urban services.	A significant destination for health, education and community facilities generated by a substantial catchment. A number of colleges and childcare centres are provided, as well as a range of primary and secondary schools. Estimated health and education floorspace at 250,750 m². Estimated community space of 185,880 m²+.
Cromer Industrial Park	3 – 4km	Limited residential provided.	Limited. Retail offering is restricted to a few cafés, primarily servicing the local workforce.	Limited commercial office uses.	Encompasses Cromer Industrial Park. A small, concentrated precinct, primarily focused on manufacturing. Estimated 130,390 m² of industrial floorspace	A number of childcare centres and schools are provided. 22,730 m² of health and education, 5,800 m² of community.
Key Centres outside Northern Beaches						
Chatswood	8 – 9km	Major	Major	Minor	Minor	Minor
Chatswood East	6 – 7km	Minor	Minor	Minor	Major	Minor
Northern Sydney	9 – 10km	Major	Minor	Major	Nil	Major
St Leonards Crows Nest	8 – 9km	Major	Major	Minor	Minor	Minor

Source: previous Structure Plan; SGS (2019) Employment Lands Study; SGS (2020) draft Housing Study; Ethos Urban  
Notes: floorspace estimates from SGS (2019) Employment Lands Study; SGS (2020) draft Housing Strategy, and the previous Structure Plan where appropriate. Analysis completed in 2020





The Core	
Floor Space Ratio	1.9:1
Height / Storeys	42m (12 Storeys)
Total Residential GFA	19,538m²
Total Non-Residential GFA	11,397m²
Total GFA	30,935m²



Assumptions

Provision of a 5000m² town square

- Built-form adopts a 6m setback at ground level along Cross Street and 4m along Pittwater Road to increase footpath width / achieve street tree planting and to improve the pedestrian amenity.
- Built-form adopts a 0m setback at ground level along Dale Street to encourage high street activation.
- Two storey street wall height and upper level setback of 3m along Dale Street to reinforce the human scale and improve residential amenity.
- Provides a 6 storey standalone commercial office building at the intersection of Pittwater Road & Cross Street becoming a key landmark with high exposure to vehicles and foot traffic.
- Three residential towers between 10-12 storeys in height, two of which are located east of Dale street and 1 west of Dale Street over an employment / parking / community facility podium.
- Includes above ground carparking on level 1 responding to potential flood impacts and subsequent cost associated with basement parking.
- Built-form adopts 5-6m floor to floor heights on ground level to allow for flexibility to attract showroom uses and creative enterprise and accommodate tall ceilings and mezzanine levels
- 2,000-2,500 m² community facility integrated into the podium and counted within the sites Employment GFA
- ADG compliant building separations.
- Residential buildings envelopes ranging from 18-22m in width (with an average floorplate of GBA 800-1000m²)
- Standard industry efficiencies have been assumed at 60% GBA to GFA for ground level non-residential uses and 75% GBA to GFA for residential levels thereafter or 85% GBA to GFA for commercial levels thereafter.
- Plant is assumed to be above last level served or in the basement of buildings.
- All analysis has been prepared without topographical survey data. Data has been sourced from a range of sources including Land and Property Information as well as existing documentation from Northern Beaches Council.

Roger Street	
Floor Space Ratio	2.3:1 to 2.4:1
Height / Storeys	27m (7 Storeys) to 30m (8 Storeys)
Total Residential GFA	30,237m²
Total Non-Residential GFA	16,748m²
Total GFA	46,985m²

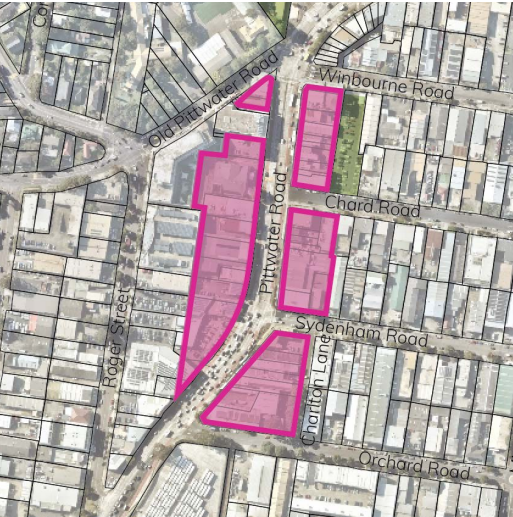


Assumptions

- Built-form adopts a 0m setback at ground level engaging with Roger Street.
- three-storey street wall height and upper level setback of 3m are to be provided to reinforce the human scale and improve residential amenity.
- Built-form adopts 5-6m floor to floor heights on ground level to allow for flexibility attract light industry and creative enterprise and accommodate tall ceilings and mezzanine levels
- Buildings ranging between 7-8 storeys in height
- The creation of mid-block pedestrian links west of Pittwater Road (Min 6m in width)
- ADG compliant building separations.
- Residential buildings envelopes ranging from 18-22m in width (with an average floorplate of GBA 800-1000m²)
- Standard industry efficiencies have been assumed at 60% GBA to GFA for ground level non-residential uses and 75% GBA to GFA for residential levels thereafter.
- Plant is assumed to be above last level served or in the basement of buildings.
- The GFA for residential and non-residential uses has excluded recent development sites including SP97298 (25 Roger Street) and SP100027 (12 Roger Street)
- All analysis has been prepared without topographical survey data. Data has been sourced from a range of sources including Land and Property Information as well as existing documentation from Northern Beaches Council.



Pittwater Road	
Floor Space Ratio	2.4:1
Height / Storeys	30m (8 Storeys)
Total Residential GFA	51,428m²
Total Non-Residential GFA	17,142m²
Total GFA	68,570m²



Assumptions

- Built-form adopts a 3m setback at ground level along Pittwater Road to increase footpath width / achieve street tree planting and to improve the pedestrian amenity.
- Single storey street wall height and upper level setback of 6m are to be provided to improve residential amenity along Pittwater Road
- Built-form adopts 5-6m floor to floor heights on ground level to allow for flexibility to attract showroom uses and creative enterprise and accommodate tall ceilings and mezzanine levels
- Buildings 8 storeys in height
- Laneway to the rear east of Pittwater Road and the creation of mid-block pedestrian links (Min 6m in width)
- ADG compliant building separations.
- Residential buildings envelopes ranging from 18-22m in width (with an average floorplate of GBA 800-1000m²)
- Standard industry efficiencies have been assumed at 60% GBA to GFA for ground level non-residential uses and 75% GBA to GFA for residential levels thereafter.
- Plant is assumed to be above last level served or in the basement of buildings.
- The GFA for residential and non-residential uses has excluded recent development sites including SP85735 (517A Pittwater Road)
- All analysis has been prepared without topographical survey data. Data has been sourced from a range of sources including Land and Property Information as well as existing documentation and data from Northern Beaches Council.

