

# **ANALYSIS REPORT**

Prepared for Northern Beaches Council
NORTHERN
BEACHES
COUNCIL

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MacroPlan DIMASI + ARUP

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А	30.09.2015	Draft for Discussion
В	30.05.2016	Draft for Discussion
С	02.08.2016	Final
D	20.12.2016	Final Report for Public Exhibition
E	17.01.2017	Final Report for Public Exhibition



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This document was prepared before 12 May 2016, being the date of creation of the Northern Beaches Council pursuant to the Local Government (Council Amalgamations) Proclamation 2016.

The Brookvale Structure Plan project was commissioned by the Warringah Council and this Analysis Report was prepared before 12 May 2016. Consequently, it makes reference to Warringah Council and Warringah Local Government Area.

It is acknowledged that the relevant local government authority since 12 May 2016, is the Northern Beaches Council.

All references to Warringah Council and Warringah LGA are to be read as references to "the former Warringah Council" and "the former Local Government Area of Warringah" respectively.





# INTRODUCTION INTRODUCTION

# 11 Repositioning Brookvale

Brookvale Structure Plan describes the repositioning of Brookvale as an employment focused Strategic Centre of the future for metropolitan Sydney. It guides future growth in the area for the next 20 years while protecting employment in Brookvale, managing housing diversity and affordability with consideration to traffic, transport, environmental, social and governance imperatives necessary for a Strategic Centre of the future.

Led by Hames Sharley, the process is supplemented by close collaboration with Arup for transport infrastructure and MacroPlan Dimasi for urban economics. More than simply describing a Structure Plan for Brookvale, the following report results from coordination with the Warringah Council and state government agencies to deliver a strategic methodology that underpins the integrated urban design, planning, transport and economic inputs that will lead to the sustainable and feasible development of Brookvale.

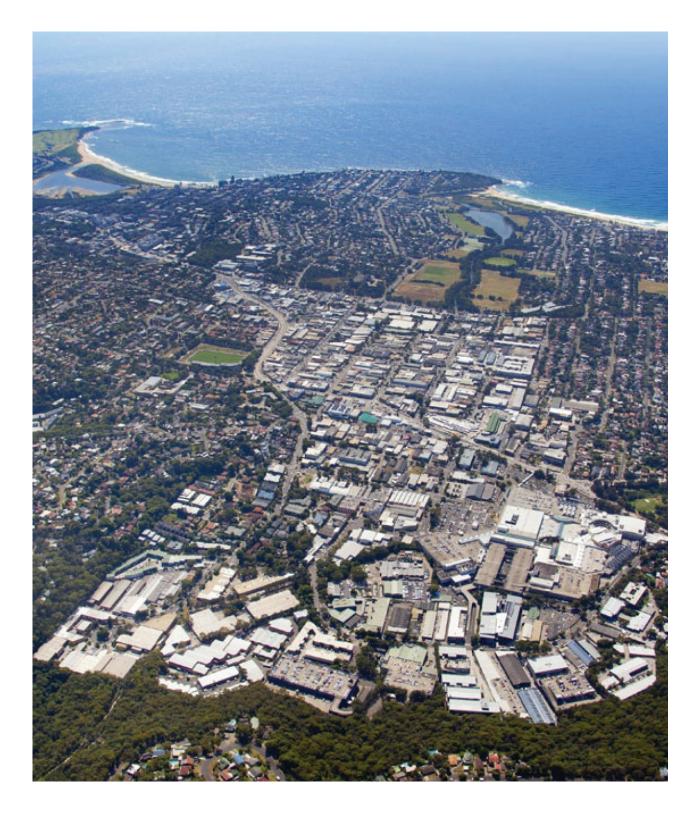
This report seeks to articulate a place that achieves the Warringah Council and the Department of Planning and Environment's goal for a Strategic Centre at Brookvale–Dee Why, that performs a vital economic and employment role for both the Northern Beaches region and metropolitan Sydney. It demonstrates a capacity to evolve over time to include a future mix of industrial, commercial, retail, educational, residential and community uses. Brookvale represents a unique opportunity due to its high performing function as the economic heart of Warringah and its strategic location at the intersection of Pittwater Road and Warringah Road, two significant corridors serving the Northern Beaches.

Brookvale Structure Plan intends to take advantage of the existing strengths of Brookvale to create a synergy between a variety of uses and users that will ultimately inhabit this place. This project has the opportunity to deliver more than just a mix of industrial, commercial and retail uses associated with a Strategic Centre. It can create localised employment opportunities to spur the economic evolution and redevelopment of Warringah as a region. In doing so, Warringah can become more dynamic, prosperous and liveable with the emerging injection of future industries, services, technologies and research associated with a Strategic Centre, and therefore more jobs in Warringah.

This transition can be achieved through understanding the site, its region and its people. Engagement with key stakeholders and community members who work, reside and visit Brookvale is essential. This report represents the compilation of data collection with respect to planning, environment, economics, transport and the community. It is supported by benchmarking and identifies priority considerations to deliver a Strategic Centre at Brookvale-Dee Why.

The subsequent stages of Brookvale Structure Plan will prepare future development scenarios to be reviewed and evaluated with the project team, key stakeholders and the community. This will guide sustainable and feasible development in Brookvale for the next 20 years.





# 12 Delivering a Strategic Centre

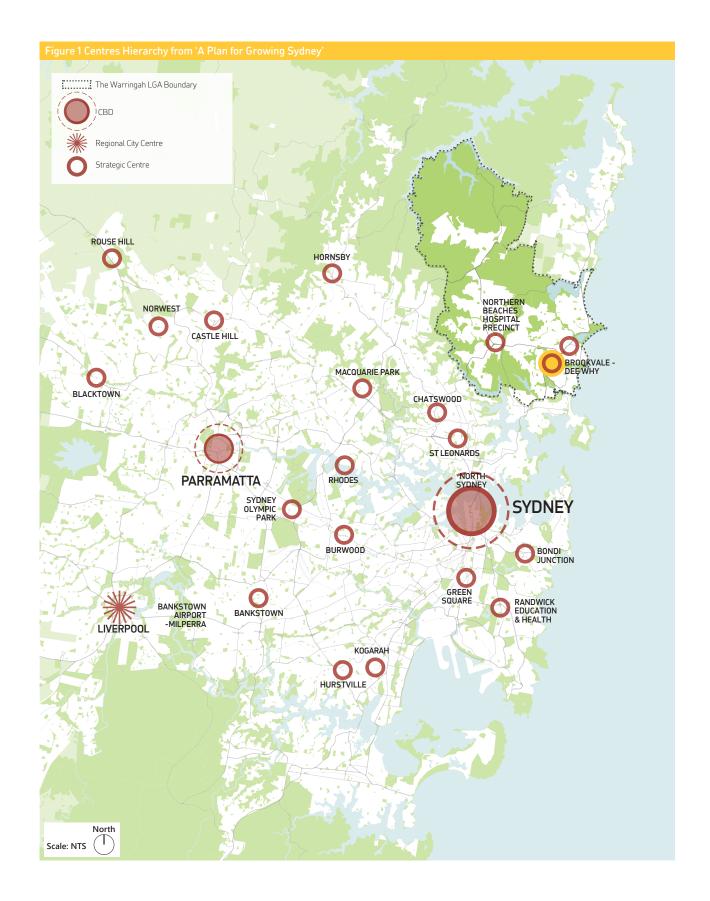
Brookvale-Dee Why is identified as a Strategic Centre by the Department of Planning and Environment in 'A Plan for Growing Sydney.' the metropolitan plan to guide growth in Sydney for the next 20 years. This plan identifies four goals for Sydney: a competitive economy with world class services and transport; a city of housing choice with homes that meet our needs and lifestyles; a great place to live with communities that are strong, healthy and well connected; and a sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.

The Warringah Council has previously undertaken the Dee Why Town Centre Master Plan to deliver a liveable town centre that transforms Dee Why into the civic and cultural focus for Warringah. Brookvale Structure Plan is a companion piece of strategic planning to ensure a successful Strategic Centre at Brookvale-Dee Why for Warringah. 'A Plan for Growing Sydney' identifies the priorities of the Brookvale-Dee Why Strategic Centre as follows: to retain a commercial core for long term employment growth; to provide capacity for additional mixed use development including offices, retail, services and housing; to improve walking and cycling connections between Warringah Mall, Brookvale and Dee Why; and to progress planning for a Northern Beaches bus rapid transit (BRT) corridor to service Brookvale-Dee Why.

Brookvale Structure Plan will focus on Brookvale itself with careful consideration of the outcomes of the Dee Why Town Centre Master Plan and the priorities described above to ensure an aligned strategic approach. In order to deliver a Strategic Centre at Brookvale-Dee Why, it is essential that the multiple policy and directional documents for land use planning are coordinated. These documents, prepared by state government agencies, the Shore Regional Organisation of Councils (SHOROC) and Warringah Council, can be coordinated into a single strategic plan that is clear, ordered and contextually appropriate to Warringah in order to guide future planning in the region. Brookvale Structure Plan can provide a catalyst for achieving mutual stakeholder and community aspirations at a local level which are supported at a regional level by "A Plan for Growing Sydney".

Identifying, investigating and refining the types of land uses which will best position Brookvale-Dee Why as a Strategic Centre for the future are exciting challenges presented by the project. Our integrated urban design, planning, transport and economic approach will assist in positioning Brookvale as an accessible destination and a desirable location to live, work, learn and play in on the Northern Beaches.





# 1.3 Role and Structure of the Report

This report is prepared as the key deliverable for Stage 2 of Brookvale Structure Plan. The chapters contained in this report form the basis for the Final Brookvale Structure Plan Report. At the conclusion of each stage, a report will be presented to the Warringah Council for approval prior to commencing the subsequent stage. The final deliverables for Brookvale Structure Plan will include an Analysis Report, a Scenarios Report, a Draft Structure Plan and a Final Structure Plan.

The first section of this report, **1.0 Introduction**, introduces the project, explains the role of a Strategic Centre for metropolitan Sydney, identifies key objectives for Brookvale and recommends an Investigation Area for Brookvale Structure Plan.

The second section of this report, **2.0 Context**, describes the planning, mapping, economic, transport and community context for Brookvale at a local and regional scale. This section includes the following research:

- + A literature review of relevant planning policies and documents:
- + A baseline data mapping for the Warringah Local Government Area and Brookvale Structure Plan Investigation Area:
- An economic analysis determining the current and forecast market conditions including a preliminary identification of capacity for development;
- A traffic and transport analysis for existing movement and access into and throughout the Investigation Area including a statement on the current status of the proposed Northern Beaches bus rapid transit (BRT) corridor; and
- + A summary of community demographics coupled with previous stakeholder and community engagement undertaken.

The third section of this report, **3.0 Benchmarking**, examines comparable Strategic Centres, industrial zones and business parks from a scale, function and evolution perspective to understand how Brookvale may transition in the future. This benchmarking study has been undertaken to evaluate what makes a Strategic Centre for metropolitan Sydney in the context of the Department of Planning and Environment's definition of a Strategic Centre and their goal to invest in and grow Strategic Centres to provide more jobs closer to home and to create more vibrant hubs of activity. A series of comparisons for Sydney based Strategic Centres demonstrates the qualitative and quantitative measures against which Brookvale can be compared.

The fourth section of this report, **4.0 Next Steps**, identifies priority issues for consideration in the subsequent stages of this project.

The next stage will result in a Scenarios Report which describes possible future development scenarios for Brookvale and identifies a preferred development scenario following a scenario testing process with Warringah Council. The preferred development scenario will inform the Draft Structure Plan and illustrate the way forward for Brookvale. The Draft Structure Plan will then be placed on public exhibition for comment before being refined as the Final Structure Plan.



As summarised in the graphic below, this Analysis Report encompasses the first four sections of the Structure Plan Report. Subsequent sections will be delivered over the course of the project timeline.

#### FINAL STRUCTURE PLAN COMPONENTS

1.0 INTRODUCTION

2.0 CONTEXT

3.0 BENCHMARKING

40 NEXT STEPS

IN THIS REPORT

**ANALYSIS** 

- → PRO IFCT ASPIRATIONS
- DEVELOPMENT PRINCIPLES
- + DEVELOPMENT SCENARIOS
- + ENGAGEMENT OUTCOMES
- → PREFERRED DEVELOPMENT SCENARIO
- NEXT RFPORT

SCENARIO

- + DRAFT STRUCTURE PLAN
- FINAL STRUCTURE PLAN

NEXT REPORT STRUCTURE PLAN

# 14 Key Objectives

# 6 KEY OBJECTIVES FOR WARRINGAH APPLIED TO THE BROOKVALE STRUCTURE PLAN

# KEY OBJECTIVES FOR WARRINGAH AND ITS STRATEGIC CENTRE AT BROOKVALE-DEE WHY

The project objectives outlined on the following pages are aspirations for the future of Warringah born from the Warringah Community Strategic Plan 2023. Although these objectives apply to Warringah as a whole, these objectives will provide a foundation to guide the delivery of the Brookvale Structure Plan. The six objectives are as follows:

- VIBRANT COMMUNITY
- LIFESTYLE AND RECREATION
- HEALTHY ENVIRONMENT
- CONNECTED TRANSPORT
- LIVEABLE NEIGHBOURHOODS
- WORKING TOGETHER

These objectives are extracts from the Warringah Community Strategic Plan 2023 and provide a touchstone for each stage and phase of the Brookvale Structure Plan. They are consistent across the Northern Beaches Hospital Precinct Structure Plan and the Brookvale Structure Plan.







#### 1. VIBRANT COMMUNITY

# Enhanced in cultural life, connections and well being - catering for all generations / needs

Community members actively support each other and residents have a strong sense of belonging and community spirit. Residents are involved in the community and a high percentage regularly volunteer to help others.

The community is made up of people of all ages and life stages. The public places, facilities and services need to reflect this and be accessible to all. Everyone should have the opportunity to access the things they need for a good quality of life.

#### SPECIFIC OBJECTIVES

- Have the services to promote and deliver health and well being;
- Feel safe and protected at home and in public, and have a respect for each other and the area;
- Support and care for all our community members and provide opportunities to connect and belong;
- Value heritage and cultural diversity, celebrating and fostering creativity.

#### 2. LIFESTYLE AND RECREATION

# Enriched through sport, recreation and outdoor enjoyment in an attractive setting

Participation in recreational and leisure activities is high, with rates well above state and national averages. This is important as physical health contributes to overall well being and enables people to participate fully in work, family and community life.

Warringah is fortunate to have a diverse range of recreational and leisure options; an abundance of parks, reserves, beaches, lagoons, walking and cycling paths. However, access to bushland and waterways needs to be balanced with the need to preserve them.

#### SPECIFIC OBJECTIVES

- Have access to a diverse range of recreational facilities that meet the needs of the community and sporting groups;
- Have access to attractive parks and natural areas that encourage and support a safe healthy lifestyle;
- Have inviting public spaces that are clean, green and well designed.





#### 3. HEALTHY ENVIRONMENT

# Healthy and well protected and continuously strives for a sustainable future

The natural environment is treasured by residents and visitors alike, for many it is the reason why they live in Warringah. Reducing the impact of certain activities on the natural environment is critical.

The conservation value of much of the bush land is high. It is home to a wide variety of threatened species of animals and plants. Warringah strives to retain and improve the quality of habitats to protect this biodiversity. The community needs to retain communities of high conservation value bush land and manage recreational access to preserve natural heritage.

#### SPECIFIC OBJECTIVES

- Value the health of the beaches, foreshores and waterways as natural habitats and for enjoyment;
- Protect and sustain the diverse bush land as valuable habitats, and provide for a variety of wildlife to thrive and migrate;
- Strive to live and work sustainably and reduce environmental footprints;
- Effectively plan for and respond to natural hazards and climate change in a sustainable way.

#### 4. CONNECTED TRANSPORT

# Allow residents to get around for living, working and learning within and outside Warringah

Area residents need to shift away from dependency on car based travel to effectively connect with places of work, learning and play.

Public transport needs to be an attractive alternative that is accessible. Services need to conveniently operate and provide links to all suburbs as well as centres outside Warringah. The efficiency of the road network needs to be improved through better management and upgrading of key intersections. There is a need for improved park and ride facilities near transport hubs and centres.

#### SPECIFIC OBJECTIVES

- Have an effective interconnected public transport system that is safe, efficient and affordable;
- Use a well-designed and functioning road network;
- Conveniently access parking near transport hubs and close to urban centres;
- Safely and conveniently walk or ride around Warringah.







#### 5. LIVEABLE NEIGHBOURHOODS

# The community's diverse needs are met for living, working and learning in an attractive urban environment

Neighbourhoods will face new challenges as the population increases and needs change. There should be affordable housing for the young and key workers such as police, teachers and nurses. We need a different mix of housing that is both sympathetic to the sense of identity of neighbourhoods yet provides choice.

Living near to transport hubs and retail and employment centres encourages people to live, work and play near home. Increasing density can help maintain vibrant, people friendly neighbourhoods by supporting local shops, cafés, libraries and community centres. Density that is well planned and well designed serves an important function in preserving and enhancing unique neighbourhoods, facilitating better transportation and housing choice.

#### SPECIFIC OBJECTIVES

- Have attractive and functional urban and commercial centres that adapt to the needs of residents and business;
- Encourage and support a diversity of businesses that provide a range of services and employment opportunities;
- Offer a variety of housing choices that meet the needs of our community and complements local neighbourhoods and the Warringah lifestyle;
- Have access to a range of local educational and training opportunities that complements the local economy.

#### 6. WORKING TOGETHER

# The community participates in decision making; leadership is responsive, building effective partnerships and planning for the future

The changes the community wants to bring about cannot be achieved by one organisation but require all stakeholders in Warringah's future to work together.

Residents want to contribute to decisions that affect them. They want to play a more active role in civic life, providing opinion and taking advantage of opportunities to influence decision making. The desire for greater personal responsibility includes being tolerant of the views of others and appreciating that, sometimes, the common good has to take precedent over individual or minority interests.

#### SPECIFIC OBJECTIVES

- Residents are effectively represented, can provide opinions and contribute to decisions that impact Warringah;
- Trust politicians and public officers and they demonstrate leadership, transparency, accountability and deliver value for money services;
- Residents participate in effective partnerships and collaborate for now and the future.

# 15 Investigation Area

Brookvale Structure Plan adopts a 249ha Investigation Area on the eastern edge of the Warringah Local Government Area. The Investigation Area is defined by the Brookvale suburb boundary and has been expanded to include both sides of Beacon Hill Road, the IN1 General Industrial and B5 Business Development zoning to the east of Harbord Road where Fitness First and Office Works are located (which are not included in the Dee Why Town Centre Master Plan boundary), as well as R2 Low Density Residential zoned block to the south of Wattle Road (which acts as a buffer between the industrial and low density residential areas).

The purpose of the Investigation Area is to provide an area within which to test the long term objectives of a Strategic Centre for Brookvale-Dee Why. This Investigation Area is supported by an area of influence, a 1.5 kilometre radial area from the centre of the Investigation Area. The Investigation Area is bound by:

- + Brookvale suburb boundary to the north;
- + IN1 General Industrial zoning and Harbord Road to the east;
- Amourin Street, Short Street, William Street, Warringah Mall, Smith Avenue and TAFE NSW Northern Beaches Campus to the south; and
- + IN1 General Industrial zoning and the south western side of Beacon Hill Road to the west.

The Investigation Area encourages continued engagement and coordination between adjacent stakeholders, business owners, civic and community groups to ensure the creation of Brookvale Structure Plan as a contextually responsive document to guide growth in Brookvale.



Brookvale is named after the brook which ran through the area. Brookvale was formerly known as Greendale, a name that is preserved today by Greendale Creek.









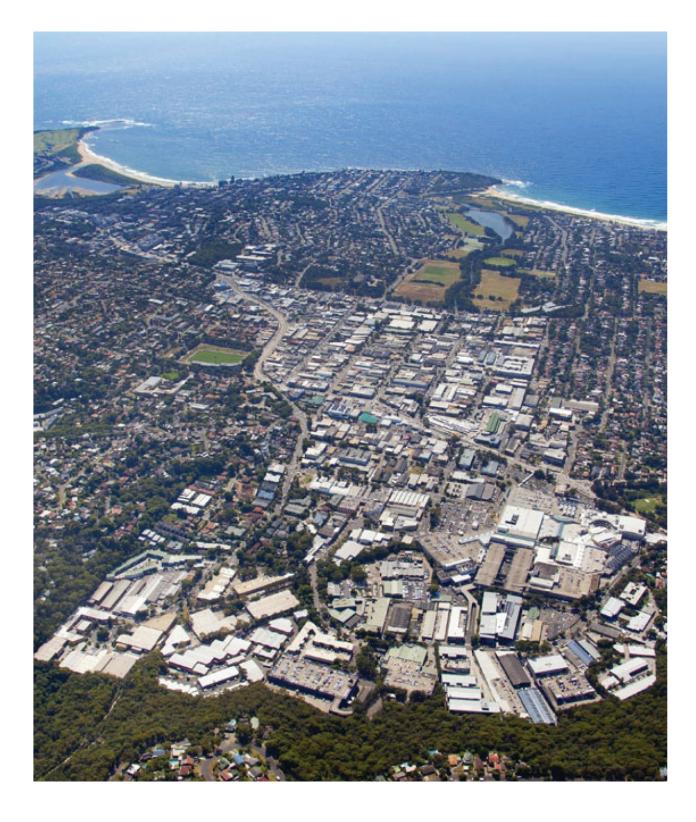
# CONTEXT

# 2.0 Context

Brookvale-Dee Why's future as a Strategic Centre has implications beyond the immediate Investigation Area; public and private investment in all of Warringah and the Northern Beaches will respond to and build from the Brookvale Structure Plan for years to come. Therefore, a thorough understanding of the Investigation Area's context, both current and proposed, is necessary to evaluate appropriate development for the area.

The following section outlines the planning, mapping, economic, transport, and community context of Brookvale. This enables the project recommendations to respond at a regional and local scale.





# 21 Planning Context

The Warringah Local Government Area (LGA) has numerous planning documents to enable a strategic plan for future growth. Outlined on the following pages are prominent documents affecting state, regional and local planning policy and decision making. Like other LGAs, development is guided by a Local Environmental Plan (LEP) and Development Control Plan (DCP).

In addition to LGA planning, strategies at a regional scale have been developed with neighbouring Pittwater Council, Manly Council and Mosman Council through SHOROC.

Most recently, the NSW Government has released long term regional and action plans complete with funding strategies. Central to these plans is A Plan for Growing Sydney. The document includes four goals so that Sydney will be:

- A competitive economy with world class services and transport;
- A city of housing choice with homes that meet our needs and lifestyles;
- A great place to live with communities that are strong, healthy and well connected; and
- A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.

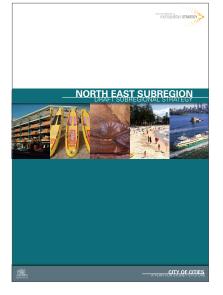
The plan also identifies Brookvale-Dee Why as a Strategic Centre for metropolitan Sydney. The NSW Government has also prepared the NSW Long Term Transport Master Plan, Northern Beaches Regional Action Plan and Northern Beaches Transport Action Plan in support of confirming Sydney as a strong global city and a great place to live.

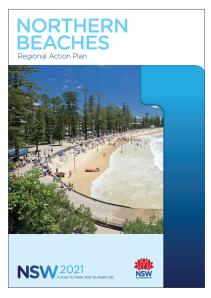
This section of the report summarises the NSW Government, SHOROC and the Warringah Council planning and policy documents that will inform the Brookvale Structure Plan. These documents detail the planning, transport, infrastructure, employment, housing, community and sustainability requirements for the Investigation Area.



#### NSW STATE GOVERNMENT







# A PLAN FOR GROWING SYDNEY (2014)

This document sets a framework for sustainable growth for the Sydney metropolitan region. Underpinned by community engagement, the strategy outlines key goals, targets and actions for infrastructure and land use development with a focus on boosting housing and jobs growth across all of Sydney.

The Plan identifies Brookvale-Dee Why as a 'Strategic Centre'. The priority for Brookvale-Dee Why is to retain a commercial core for long term employment growth, increase capacity for mixed use development including offices, retail services and housing, improve active transport connections between Warringah Mall, Brookvale and Dee Why and progress planning for a Northern Beaches bus rapid transit (BRT) corridor.

# DRAFT NORTH EAST SUBREGIONAL STRATEGY (2007)

This document provides implementation information at a local level for the North East Subregion of the metropolitan strategy. The region includes Warringah, Pittwater and Manly Councils. It provides a basis for coordinating planning and economic development, environmental management, open space systems and agreements about targets for dwellings and employment growth.

One of the key directions for the North East Subregion is to promote Brookvale-Dee Why as the subregion's Major Centre. The strategy outlines that Brookvale will be investigated for the creation of a commercial office core with public domain improvements to better integrate the shopping mall with a pedestrian-based street network connecting the TAFE, community services, medical and other commercial and industrial activities. The strategy identifies that the decline in industrial related jobs will present an opportunity to make more intensive use of industrial lands. It also suggests that Pittwater Rd, between Brookvale and Dee Why be consolidated as an Enterprise Corridor.

# NORTHERN BEACHES REGIONAL ACTION PLAN (2012)

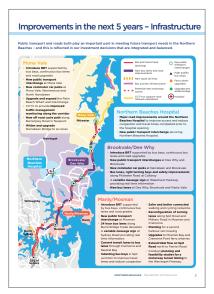
With the goal of integrating planning activities for the Northern Beaches, the Regional Action Plan identifies the immediate actions the NSW Government will prioritise over the next few years. These are meant to complement both the long term strategies developed in the metropolitan strategy and the North East Subregional Strategy through the inclusion of the Warringah Council, Pittwater Council, Manly Council and Mosman Council.

The Regional Action Plan's second priority is for better transport access to the Northern Beaches. Actions include Council undertaking a transport study for Brookvale-Dee Why Major Centre to identify infrastructure improvements needed to accommodate job growth and road congestion and investigating BRT on the Northern Beaches. This has been completed, see TMAS (2012). Another priority action is to improve water storage and wastewater services by finishing the construction of Sydney Water's Northern Beaches Storage Project in Brookvale to reduce the frequency of wastewater overflows and improve water quality in local lagoons, creeks and beaches. This has also now been completed.

#### NSW STATE GOVERNMENT







# LONG TERM TRANSPORT MASTER PLAN (2012)

The Long Term Transport Master Plan presents the NSW Government's 20 year vision for the delivery of world class public transport, roads and freight network to NSW. It is an overarching framework intended to guide subsequent and more detailed transport plans, policy decisions, reforms and funding decisions.

The Mona Vale to CBD travel route is identified as one of the most constrained in Sydney. Consequently, the provision of a Northern Beaches BRT network extension along this corridor is identified as a potential strategic action with a 5-10 year timeframe. Additionally, eastwest kerbside BRT facilities along Warringah Road are identified as one of six shortlisted options to address the future demands of the Northern Beaches transport system.

#### **SYDNEY'S BUS FUTURE (2013)**

Sydney's Bus Future is the NSW Government's long term plan to redesign Sydney's bus network to meet customer needs now and into the future. It sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

A 20 year roll out plan has been set to develop BRT along the Mona Vale to CBD corridor. The staged delivery will involve infrastructure improvements, upgrading interchange facilities at Dee Why / Warringah Mall as well as more services operating at and connecting to the major centres. 50 new suburban services will operate every weekday to connect Manly to Chatswood via Brookvale and the Northern Beaches Hospital at Frenchs Forest. Investigations into full BRT for the Northern Beaches is proposed in this document, however Warringah Road is only classified as a major suburban route and not nominated for BRT. It is planned to have a mix of frequent 'turn up and go' and timetabled services with stops every 400m and on road bus priority.

# NORTHERN BEACHES TRANSPORT ACTION PLAN (2014)

The Northern Beaches Transport Action Plan is a plan to transform transport in the Northern Beaches so that it can grow with the increasing number of people and jobs in the area.

The plan includes \$400 million invested in major road improvements to reduce congestion and improve travel times around the Northern Beaches Hospital; \$125 million invested to provide kerbside BRT on the Northern Beaches: \$11 million invested to provide better bus services that will start earlier and finish later during the week and on weekends; \$30 million to provide five public transport interchanges at key locations, including the Northern Beaches Hospital, Dee Why and Brookvale; and \$5 million from Restart NSW for strategic and feasibility studies establishing a Northern Beaches Motorway Tunnel.



#### NSW STATE GOVERNMENT



#### SHOROC





# STATE INFRASTRUCTURE STRATEGY UPDATE (2014)

This report contains Infrastructure NSW's revised assessment of the State's long term economic and social infrastructure needs and priorities.

\$300 million has been reserved for BRT, including along the Northern Beaches north-south corridor and Transport for NSW is preparing a business case for full BRT on the Northern Beaches. There is investigation into a Beaches Link to provide a direct connection from Seaforth to the Warringah Freeway as a long term strategy if the western harbour tunnel is built. Sydney Roads Renewal is a strategic priority to address congestion, with key arterial routes on the Northern Beaches being addressed. \$2 billion is allocated to provide education and health infrastructure that supports growth. This involves the Northern Beaches Hospital as the lead project and the government exploring new innovative models for school facilities. A sporting infrastructure investment of at least \$500 million is reserved, while Brookvale Oval is categorised as Tier 2 in the strategy, this stadium is not prioritised for improvements.

#### **SHAPING OUR FUTURE (2010)**

This plan provides a whole of region strategy for SHOROC. The document outlines how the councils will work together, with other levels of government and local businesses to combat regional issues like road congestion, public transport, population growth, enhancing the natural environment, minimising infrastructure costs and the lack of access to high quality health services.

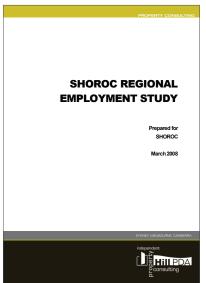
The document concentrates SHOROC's growth around four key areas. Brookvale-Dee Why is identified as a major centre for housing and jobs with additional dwelling and job capacity, retaining the employment mix and focusing on a potential logistics centre in Brookvale. The major centre is to be serviced by BRT and road upgrades along the north-south corridor. The plan also reinforces the need for BRT services and road upgrades along the east-west corridor between the major centres of Brookvale-Dee Why and Frenchs Forest to Chatswood, Macquarie and beyond to take the pressure off the north-south corridor.

# SHAPING OUR SUSTAINABLE FUTURE (2011)

This document forms Part Two of Shaping Our Future. It is an action plan outlining the key areas in which SHOROC will work together to target the region's sustainability causes. It contains priority projects for transport, energy, climate change, ecologically sustainable development, waste, water, biodiversity and skills and capacity building.

The Shaping Our Sustainable Future plan outlines five domains for sustainable action: health and well being, natural environment, built environment, jobs and economic development and leadership. Each council in the SHOROC region is addressing these domains in their local areas, however the councils consider them to be better worked on collaboratively as a region. The Brookvale Structure Plan should consider the role it will play in the sustainable future of the SHOROC region by considering the five domains for sustainable action.

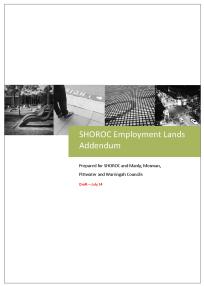
#### **SHOROC**





Completed on behalf of the Shore Regional Organisation of Councils (SHOROC), which includes the Warringah Council, Pittwater Council, Manly Council and Mosman Council, this study estimates that Warringah will experience substantial commercial growth (+108,000sqm) particularly relating to Property and Business Services (+91,000sqm or 57%).

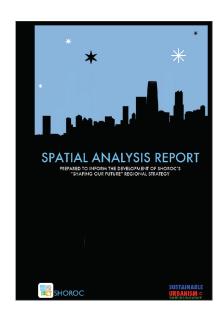
The study suggests key land use principles and strategies for the Warringah LGA. Specific to Brookvale these include: promoting the centres employment role with appropriate zones for retail, commercial and industrial uses; supporting the role of Warringah Mall as a Major Regional Shopping Centre; investigating zoning options to promote land to the west of Pittwater Road at Brookvale as land suitable for higher specification commercial offices; safeguarding Brookvale Industrial Area to the east of Pittwater Road for a range of industrially zoned land and urban support services; and addressing the industrial focus of areas such as Brookvale west of Pittwater Road and seek higher order commercial uses such as office and distribution services.



# **LANDS ADDENDUM (2014)**

This study has been prepared as an update to the SHOROC Employment Lands Study (2008), following notable changes in the region. These include the revised population forecasts for Sydney as well as the NSW government's commitment to new development and infrastructure, in particular the Northern Beaches Hospital and substantial funding towards the Northern Beaches Transport Action Plan.

Owing to the significant increase in population growth forecast for the Warringah LGA, yet a relatively constant level of job projection, the ratio of new jobs to new residents has changed drastically from 5.5 in 2007 to 0.38 in 2014. The forecast top five growth industries are Professional, Scientific and Technical services; Retail Trade; Health Care and Social Assistance; Education and Training; and Wholesale Trade. Projections between 2011-2031 are for an additional 116,280 sgm of commercial space, an additional 110,547 sqm of retail floorspace, an additional 204,140 sqm of special use floorspace including health care and education. Industrial employment is forecast to modestly decline with -15,390sqm less demand for industrial floorspace.



#### **SPATIAL ANALYSIS REPORT (2011)**

With its evidence basis of geography, networks, land use and transport, the purpose of this document is to enable SHOROC to take an informed lead in the advocacy of regional matters and to have a strong evidence basis from which to propose a way forward.

The document promotes Brookvale-Dee Why and Frenchs Forest as urban intensified infill development sites for employment and dwellings. It also recommends retaining some of the single detached dwellings within walking distance of Brookvale-Dee Why to provide for housing diversity within these centres. The report recommends a key spine concept for connectivity with an east-west spine being the main priority to take pressure off the northsouth traffic. The second priority link is the north-south corridor to service Mona Vale to the CBD and includes the development of BRT. It also outlines the provision of actual spatial locations for projects, policies and strategies aimed to carry out this development.







# Draft Warringah's Housing Strategy Volume 1 Warringah Council

# WARRINGAH LOCAL ENVIRONMENTAL PLAN (2011)

The Warringah LEP 2011 is the principal environmental planning instrument that applies to all development in Warringah. It is a tool to guide development and planning decisions. It establishes land use zones and describes permitted and prohibited activities as well as principal development standards such as building heights and subdivision of land.

The Warringah LEP provides a planning framework for Brookvale. Currently, there are several projects within the study area where information has been submitted to Council either as a Planning Proposal or a Development Application. These projects may suggest an alteration to existing planning controls and will be reviewed by the project team for consideration.

# WARRINGAH DEVELOPMENT CONTROL PLAN (2011)

The Warringah DCP 2011 contains detailed planning controls that are not included in Warringah LEP 2011. It expands upon the controls of the LEP and addresses development matters that are not covered by the LEP. Warringah LEP 2011 and Warringah DCP 2011 both affect planning decisions in Warringah and apply concurrently.

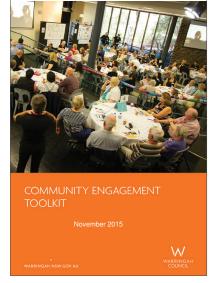
The Warringah DCP 2011 supplements the LEP to strengthen the regional position of Warringah as a multifunctional and innovative centre that encourages employment and economic growth. The DCP includes special development controls for specific parts of Warringah, including Warringah Mall. The controls will guide future development within the Warringah Mall Shopping Centre site to 2021, to ensure development responds to the characteristics of the site and surrounds, and the amenity of the surrounding neighbourhood and encourages and facilitates high quality urban design, landscaping, external finishes and signage.

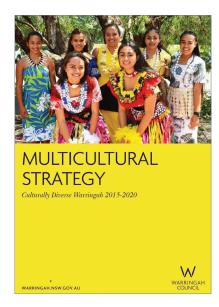
# WARRINGAH DRAFT HOUSING STRATEGY (2011)

This document outlines how Warringah will meet the NSW Government's housing target of 10.300 new dwellings between 2005 and 2031. The Draft Housing Strategy also ensures Council's planning policies respond to the area's changing demographics such as its ageing population, the growing number of single parent households and families with fewer children. A second volume of this report considers Narraweena and its potential to be up zoned for higher density development. While neither report has been adopted by Council, both are publicly available.

The strategy suggests that Dee Why will develop as a highly liveable town centre and Brookvale will be investigated for protecting and intensifying its employment lands. Additional dwellings are not considered within Brookvale or Dee Why in the Draft Housing Strategy as Council must first respond to future employment targets.







#### WARRINGAH COMMUNITY STRATEGIC PLAN 2023 (2013)

This vision based plan sets out the long term aspirations of the Warringah community. It reflects where the community wants to be in 10 years and is the key reference point for decision making. The plan was prepared by Council on behalf of Warringah's stakeholders with regard to state and regional policy.

# Six community outcomes emerged from this process:

- Vibrant Community
- Lifestyle and Recreation
- Healthy Environment
- Connect Transport
- Liveable Neighbourhoods
- Working Together

A further 22 key objectives sit beneath. These themes can be applied as broad community principles to assist future planning to help shape the Brookvale Structure Plan.

# WARRINGAH COMMUNITY ENGAGEMENT TOOLKIT (2015)

This framework was developed by Warringah Council to encourage effective engagement with the community and internally. The Community Engagement Framework includes three components: an engagement policy to provide a broad framework and policy direction; a matrix to provide staff with direction on engagement planning, and a toolkit to provide advice on 'how to' undertake engagement.

The Brookvale Structure Plan has been identified as a 'high impact' project. As such, high impact projects are required to include a full range of appropriate community participation on the engagement spectrum from information to collaboration.

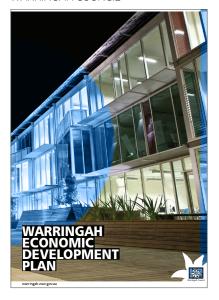
# WARRINGAH DRAFT MULTICULTURAL STRATEGY (2015)

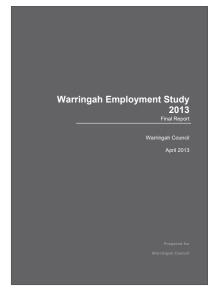
This strategy outlines how Council will work towards ensuring its programs, services and facilities are accessible to residents from culturally and linguistically diverse (CALD) backgrounds, and is a result of extensive community consultation with the CALD group.

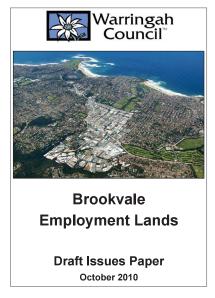
The Warringah Council delivers a range of services and facilities for the CALD communities. Particularly in the Brookvale area, Warringah's Community Development team gives regular presentations to new migrants as part of the settlement program and Adult Migrant Education Program at the Northern Beaches Institute of TAFE.

Six strategic directions emerged from the findings of the community consultation, these include housing, employment education and training, access to information and services, identity and belonging, celebrations and events and health and safety. These directions should be considered in the Brookvale Structure Plan process.









# WARRINGAH ECONOMIC DEVELOPMENT PLAN (2011)

This plan acknowledges that Warringah has the largest economy of the SHOROC Councils, with a stable, highly skilled and educated workforce and increasingly diverse economic base. The plan seeks to confirms Council's commitment to reducing obstacles and progressing actions that maximise opportunities for economic development.

The Plan outlines that Brookvale contains two of the four largest employment lands in Warringah, these being Brookvale Industrial Area (59.2ha) and Warringah Mall (7.1ha). The Plan's priority actions for Brookvale are to support the establishment of a Business Enterprise Corridor linking Brookvale and Dee Why, and a business development strategy and master plan for the Dee Why Town Centre to help activate and reinvigorate Brookvale-Dee Why as a distinctive attractive and sustainable location for businesses.

# WARRINGAH EMPLOYMENT STUDY (2013)

Prepared by SGS, this report considers the potential for the Warringah LGA to accommodate the additional employment capacity target of 12,500 jobs from 2001 to 2031 as set by the Draft North East Subregional Strategy (equivalent to an additional employment target of 7,500 jobs for the period from 2013 to 2031).

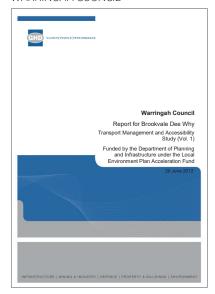
The study finds that Warringah's employment precincts have capacity to cater for the forecast future growth. Brookvale-Dee Why has the greatest theoretical floorspace capacity under the current control, although the additional job capacity has been capped at 3,500 jobs by 2036 due to the traffic constraints (in line with findings from the TMAS). Retail is forecast to grow strongly with a planned expansion of Warringah Mall. The study suggests strategic industrial lands should be preserved, but that there is an underlying need to review zoning, permissibility and controls for industrial activities to allow more flexibility to accommodate changing needs.

# BROOKVALE EMPLOYMENT LANDS DRAFT ISSUES PAPER (2010)

This paper is a response to the Draft North East Subregional Strategy and points out a number of issues to be considered to ensure Brookvale remains a desirable place to live while focusing on how best to use the existing land to generate employment.

The paper highlights the narrow nature of the road network being unable to cope with large trucks and the lack of on site parking, with roof top parking underutilised and streets overcrowded. While the paper recommends safeguarding Brookvale East industrial area for a range of industrial and urban support services and allowing Brookvale West to develop with higher order commercial office and distribution services, the paper highlights that redevelopment is constrained in the Brookvale East industrial area due to multiple and fragmented ownership patterns. On a community level, the Council looks towards recognising and enhancing the nightlife and entertainment in Brookvale and promoting the growth of Warringah Mall for not only retail but alongside community and education.

**STUDY (TMAS) (2012)** 



#### **BROOKVALE-DEE WHY TRANSPORT** MANAGEMENT & ACCESSIBILITY TRANSPORT STRATEGY (2013)

The purpose of the TMAS is to provide a framework for the provision of transportation management measures to support the proposed development associated with the 5,000 jobs target in Brookvale and Dee Why by 2036.

The key findings confirm that there is currently a high level of self containment within the Warringah LGA. The primary constraint in the study area is the intersection of Pittwater Rd and Warringah Rd. Key recommendations are that land use planning should be undertaken in a manner that monitors the growth in jobs up to the 3,000 to 3,500 jobs threshold, at which point Council and other agencies should consider large-scale transport network upgrades as growth proceeds to the 5,000 jobs target in the longer term. The proposed Bus Rapid Transit scheme on Warringah Rd is a worthwhile transport infrastructure investment which would contribute to achieving the transport objectives and targets identified in the TMAS. The possible introduction of a Metro Bus service linking Brookvale and Dee Why with Chatswood via Warringah Rd should be considered to cater for expected growth in travel demand to the west of Brookvale and Dee Why.

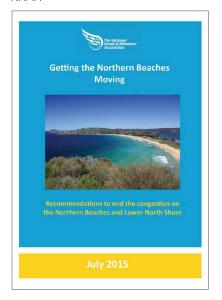


# WARRINGAH SUSTAINABLE

The purpose of this strategy to provide a framework to guide and support sustainable transport in Warringah. It identifies medium to long term directions for the continued development of travel modes, infrastructure and behaviours to transition to more sustainable transport within and beyond Warringah. It is also guides program implementation and actions in relation to sustainable transport that can be resourced through Warringah's Community Strategic Plan. There are five supporting strategies that form the basis of the framework: Council's role as a leader in sustainable transport incentives; regional advocacy and partnerships; active travel; place planning and connectivity; information, accessibility and reporting.

Specific to Brookvale, the strategy suggests a review of existing gaps in public transport linkages between existing and proposed employment precincts and residential areas, by considering local links to feed into the north-south and proposed eastwest BRT as well as identifying sites where park and ride facilities could be developed along Warringah Rd and Pittwater Rd. Improving cycling infrastructure between Dee Why and Manly Wharf is also suggested.

#### NRMA

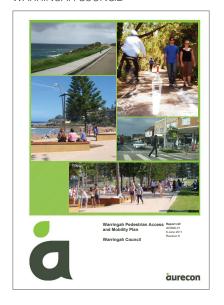


#### NRMA PRESS RELEASE (2015)

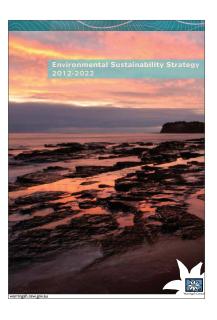
This press release produced by the National Roads & Motorists' Association (NRMA) addresses road and transport issues impacting the Lower North Shore and the Northern Beaches and provides recommendations to alleviate congestion. It focuses on the need for the NSW Government to investment in public and active transport and road infrastructure, focusing on the Spit Rd and Military Rd Corridor and the Northern Beaches Rd Corridors, including Pittwater Rd, Mona Vale Rd and Warringah Rd.

Recommendations in relation to Brookvale include for the NSW Government to: plan and build a bypass of Spit Bridge, preferably by tunnel, connecting Seaforth with the Warringah Freeway to reduce congestion along Spit Rd and Military Rd Corridors; fast track the proposed widening and upgrade of the Narrabeen Bridge to six lanes, NSW government to examine feasibility of a future extension of the metro rail network to the Lower North Shore and northern beaches, NSW government to review plans to replace transit lanes with bus lanes as part of BRT.









# WARRINGAH PEDESTRIAN ACCESS AND MOBILITY PLAN (2011)

The Warringah Pedestrian Access and Mobility Plan was produced in June 2011 with the objective of improving access and mobility in the Warringah LGA. It focuses on 14 town and local centres that have high levels of pedestrian activity.

The plan suggests significant pedestrian upgrades be made to the Brookvale-Dee Why Strategic Centre, particularly along Pittwater Road: between Dee Why Town Centre and Dee Why Beach; and between Brookvale and Curl Curl Beach via Abbott Road. There is also an opportunity to improve pedestrian links between Brookvale-Dee Why Strategic Centre and nearby village centres. Brookvale industrial areas are addressed in the PAMP as key employment generators which should be serviced by public transport and have good pedestrian and cycle networks. The issues raised in consultations include: the need for a footpath along Wyadra Avenue, improved pedestrian access to Warringah Mall from Cross St, kerb ramp near bus stop at Warringah Mall is too steep for wheelchairs, and better access to Warringah Mall from Allambie.

#### **WARRINGAH BIKE PLAN (2010)**

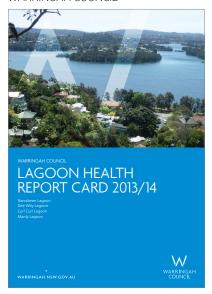
The Warringah Bike Plan provides the basis for cycling infrastructure and education to deliver a better environment for cycling in Warringah. The Bike Plan also outlines various promotion strategies and events to encourage more people to ride their bikes for local trips to the beach, the shops, school or the bus, for transport, recreation, fitness and fun.

The plan recommends traffic signals for bikes at intersection of Pittwater Rd and William St to access Warringah Mall, shared path along Curl Curl Lagoon / Greendale Creek and John Fisher Park to Harbord Rd, shared path between Harbord Rd and Miles St, on-road bicycle facility from Mile St - Ada St - Wattle St - Short St - William St to Pittwater Rd, and shared path from Condamine St to Old Pittwater Rd (to link to Warringah Mall and TAFE).

# WARRINGAH ENVIRONMENTAL SUSTAINABILITY STRATEGY (2012)

This strategy sets a long term direction for how best to balance growth with the environmental, economic and social values of the Warringah community. This strategy supersedes Council's 2001 Environmental Strategy. The inclusion of the word 'sustainability' in the title of this current strategy emphasises that the issues of today are complex and are linked to broader societal issues.

The strategy calls for smaller ecological footprints, sustainable design for the built environment, and expansion of transport options in setting a sustainable future for Warringah. These principles will guide future precinct designs and the Warringah LGA wide planning policies and decisions and thus must be considering the Brookvale Structure Plan process.



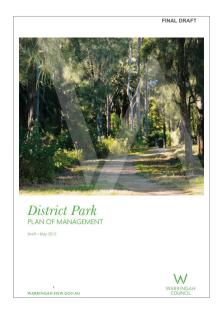
# WARRINGAH LAGOON HEALTH REPORT CARD 2013/2014

The Warringah Council undertakes ecological monitoring on its four main lagoons which assesses 'chlorophyll a' and turbidity as a measure of its ecological condition. An annual report card is produced which allocates a condition ranking for the lagoons based on the results of the monitoring year (November/April) and is comparable to other NSW lagoons.

The results for 2014 show that Curl Curl (mostly closed to the sea) Lagoon's water quality has improved to a ranking of D (poor) which the report states is great news for a lagoon with a long history of environmental degradation.

Manly (open to the sea) Lagoon ranked at C (fair) is seen as a good result for such a highly modified lagoon.

Greendale Creek and Brookvale Creek both run through the Investigation Area to the lagoons, as such the health of these creeks and the lagoons should be taken into consideration in development of the Brookvale Structure Plan.

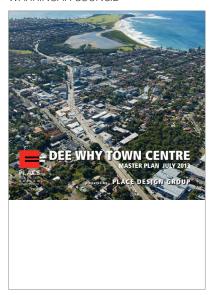


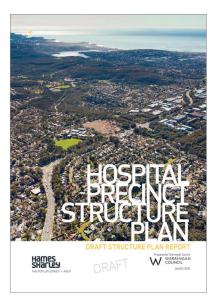
# WARRINGAH DISTRICT PARK PLAN OF MANAGEMENT (2015)

Warringah District Park Plan of Management provides the framework for managing the park, setting out how the public land is intended to be used, managed, maintained and improved and includes a Landscape Concept Plan showing the spatial works and actions to be implemented.

The key proposed actions and changes to District Park include to: construct a new sports community club building in Nolan Reserve; investigate provision of upgraded tennis, squash and futsal courts at Warringah Recreation Centre: investigate feasibility of additional squash courts; investigate provision of indoor/outdoor action sports facility, including a dirt jump bike track; upgrade children's playground at Passmore Reserve; provide new fitness equipment; continue to maintain and enhance riparian vegetation and bushland; provide new walking and cycling tracks around District Park, and links to existing pathways; and provide improved signage and way finding around the park.









# DEE WHY TOWN CENTRE MASTER PLAN (2012)

This Master Plan has been prepared by Place Design Group, following several previous studies, to provide development options to revitalise Dee Why Town Centre and better achieve accessibility, amenity and functionality. The project also involved preparing draft planning instruments to rezone and reclassify land in the Master Plan and to engage the community throughout the process. The resulting Master Plan includes a community hub and civic centre. The design seeks to reclaim the streets for pedestrian priority and accessibility and incorporates Water Sensitive Urban Design. The plan also reduces the commercial space to allow increased potential for residential development.

The redevelopment of the Dee Why Town Centre will have a strong impact on positioning Brookvale-Dee Why as a Strategic Centre for Warringah and metropolitan Sydney, with the potential to act as a catalyst for growth and development along the north-south corridor of the Warringah LGA. The Dee Why Town Centre Master Plan should be taken into consideration in the preparation of the Brookvale Structure Plan.

#### DRAFT NORTHERN BEACHES HOSPITAL PRECINCT STRUCTURE PLAN (2015)

The Draft Northern Beaches Hospital Precinct Structure Plan (NBHPSP) is currently being prepared by Hames Sharley, in conjunction with Arup and Macro Plan Dimasi. It will provide development scenarios to guide development of the Hospital Precinct over the next 20 years. The Plan will look at the wider land use implications of the proposed new hospital, involving a detailed analysis of opportunities and constraints, to properly plan for future development around the new hospital.

The NBHPSP is currently a work in progress. As the Northern Beaches Hospital Precinct is also a strategic centre of similar typology to Brookvale, it is provided as a benchmark for Brookvale (see Section 3.1 Benchmarking Strategic Centres of this report, for more information).

# DRAFT WARRINGAH LOCAL PLANNING STRATEGY (2015)

The Draft Warringah Local Planning Strategy (WLPS) is currently being prepared by Hames Sharley, in conjunction with Arup and Macro Plan Dimasi. It will describe the repositioning of Warringah to accommodate growth in the housing and jobs sector for a 20 year time horizon. It will deliver a strategic methodology that underpins the integrated urban design, planning, transport and economic inputs that will lead to the sustainable and feasible development of the Warringah Local Government Area (LGA).

The WLPS is currently a work in progress and will be a partnering document with the Brookvale Structure Plan and the Northern Beaches Hospital Precinct Structure Plan, towards a holistic outcome for Warringah.



# MAJOR INFRASTRUCTURE PROJECT BROOKVALE COMMUNITY HEALTH CENTRE

The Brookvale Community Health Centre is a \$50 million initiative by Health Infrastructure to invest in community health services. The centre will be a major hub for community health services on the Northern Beaches and will be located on Pittwater Road opposite Warringah Mall.

The project is under construction and is scheduled to open in 2017. The purpose built centre will provide services including:

- + Community Adult Mental Health Services
- + Child and Youth Mental Health Services
- + Community Drug and Alcohol Services
- + Community Nursing
- + Acute Post-Acute Care (APAC)
- + Breast Screen
- + Community Rehabilitation and Aged Care Services
- + Child and Family Health Services, and
- + Community Adult and Paediatric Oral Health Services

The facility will be integrated with the Northern Beaches Bus Rapid Transit interchange and will include a multi - storey car park for clients, patients and staff with parking available for commuters travelling by bus into Sydney CBD.

The introduction of the new health facility at Brookvale broadens the mix of land uses in the Strategic Centre and provides a new regional asset for the Northern Beaches. Brookvale Community Health Centre must be considered in the locational criteria for other ancillary and supporting activities during the structure planning process and as Brookvale evolves over the next 20 years.



### **Key Findings**

The key findings from this analysis of the planning context can be summarised as below:

- Strategic Centres are priority locations for employment, retail, housing, services and mixed uses. Future investment in Strategic Centres such as Brookvale must focus on jobs growth, housing diversity and the creation of vibrant hubs of activity.
- Brookvale is the only coastally located Strategic Centre across metropolitan Sydney. This provides a unique contextual opportunity to contribute to its identity and differentiation.
- + Brookvale embodies the characteristics of a Strategic Centre with the opportunity to reinforce health, education and diverse residential outcomes.
- Brookvale's proximity to a number of other centres, especially Dee Why, provides the unique advantage to network regionally to secure Warringah's long term future.
- + State Government, SHOROC and the Warringah Council are aligned in their policy to reinforce Brookvale-Dee Why as a high performing employment hub for the Northern Beaches supported by transport investment to facilitate growth.
- + The future planning of Brookvale must consider sustainability indicators and actions for health and well being, the natural environment, the built environment, jobs and economic development as well as leadership.

# 2.2 Mapping Context

With two planned Strategic Centres identified in A Plan for Growing Sydney. The Warringah LGA sits at an economically strategic location north of the global Sydney CBD, while offering unrivalled natural amenities and world class beach sites. This section studies Warringah's overall context within Sydney and the north east, showing the Warringah LGA's existing and proposed infrastructure, natural systems and other elements. Key systems identified at both a regional level and Investigation Area level include existing road hierarchies, open space networks, regulatory framework and natural assets.

On the following pages a summary of key existing and planned urban centres is mapped to give an understanding of how Warringah is set to develop under the state and local policy direction. Key to this is the identification of Brookvale-Dee Why as a Strategic Centre within Warringah and how it relates to other centre types throughout the Warringah LGA.

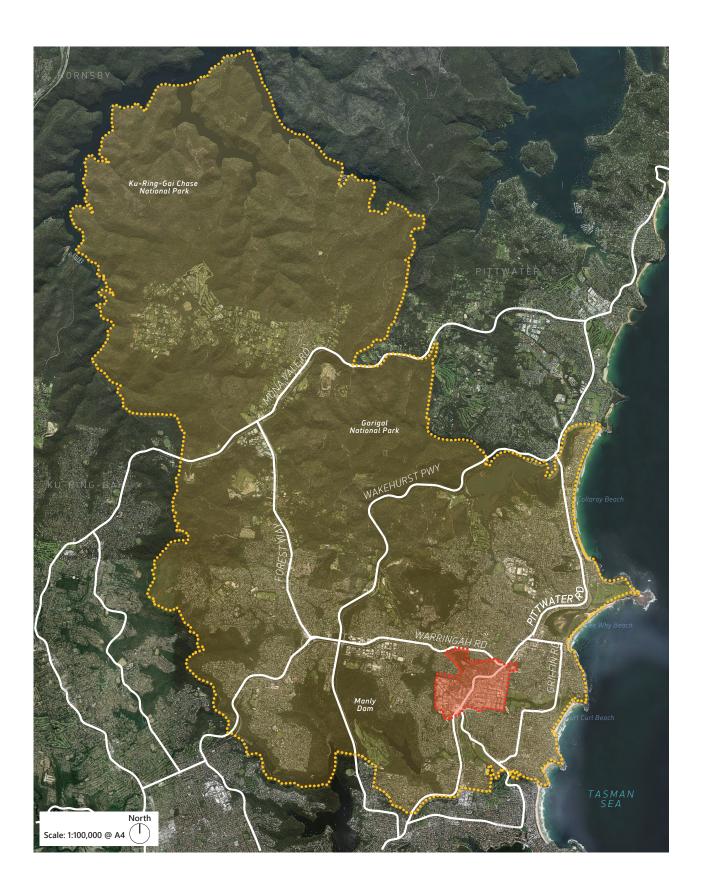
This research illustrates how Warringah can respond to future policy expectations, and when combined into a single data set, gives insight into future improvements around land use, transport, conservation and urban design.

The following information was collated through available GIS data provided by the Warringah Council. The regional and local scale are intentionally paired for clarity of information.



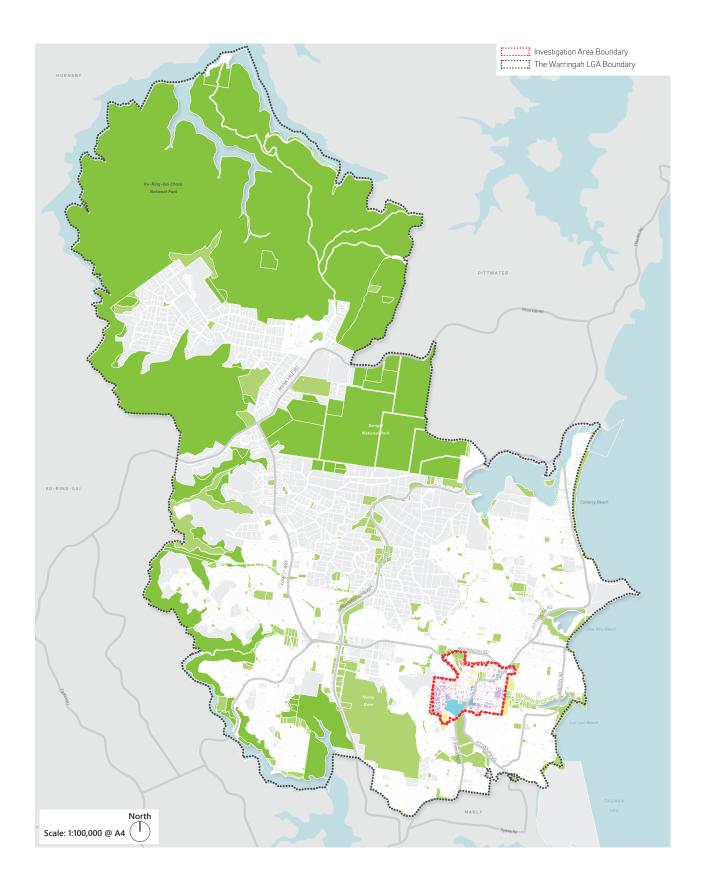
## Regional Map

A Plan for Growing Sydney identifies Brookvale-Dee Why as a Strategic Centre in the North East Subregion of Sydney. Strategic Centres are to be invested in to grow jobs and housing and create vibrant hubs of activity.



## Warringah LGA

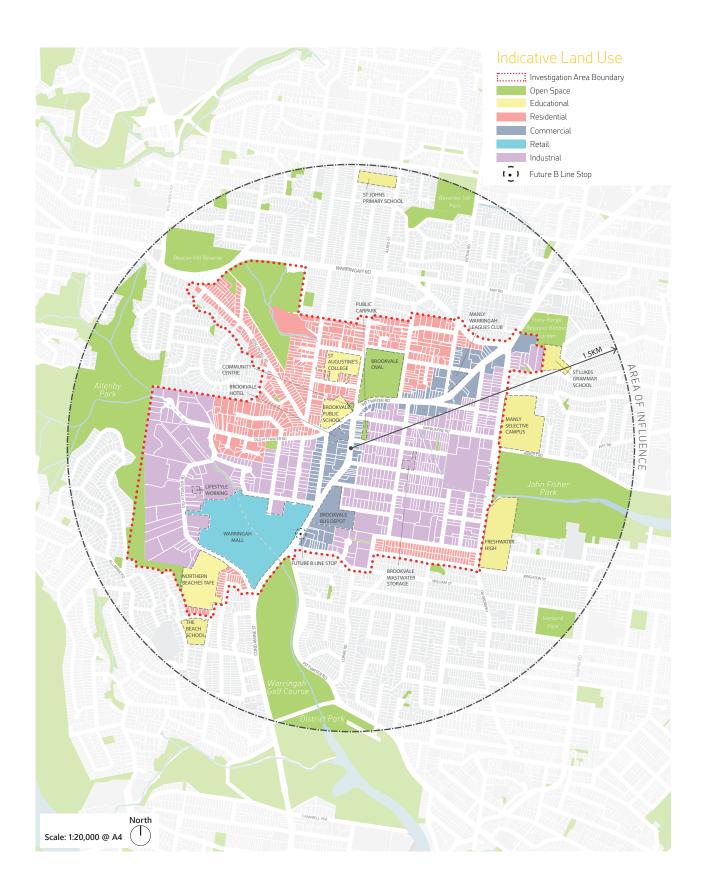
The Investigation Area for the Brookvale Structure Plan is located in the south east area of the Warringah LGA at Brookvale. The north-south corridor of Pittwater Rd runs through the site. The investigation area is bound by Warringah Rd and Federal Parade, Harbord Rd to the east, William St and Amourin St to the south, and Old Pittwater Road and industrial lands to the west.



#### Investigation Area

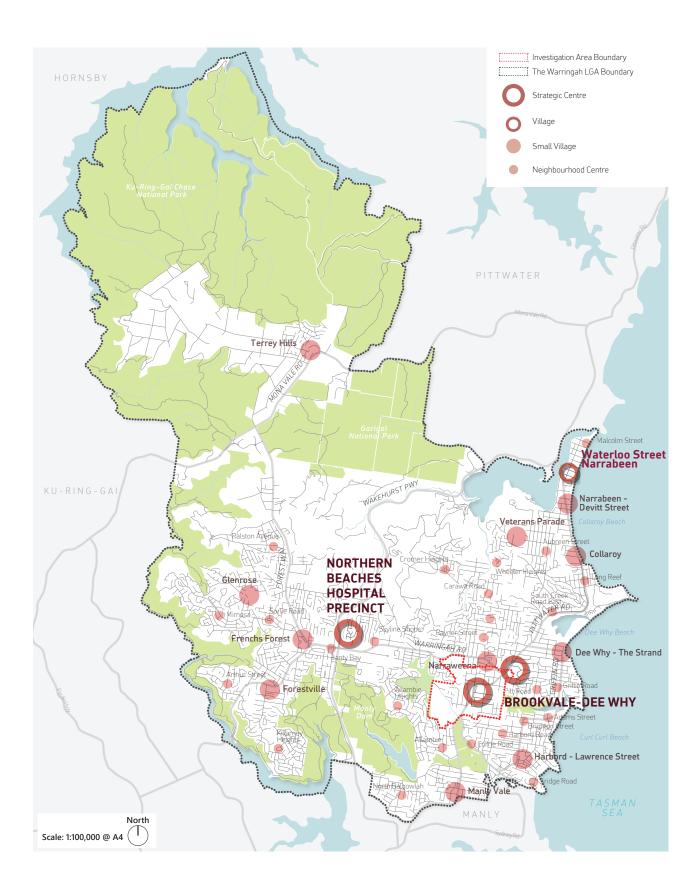


The Investigation Area is based on the suburb boundary of Brookvale, amended to utilise the street network and include neighbouring land uses. Major uses include Warringah Mall Shopping Centre, Northern Beaches TAFE, Brookvale Oval, Brookvale Hotel, Brookvale Bus Depot and a future B-Line stop, numerous industrial and commercial businesses, primary and high schools, residential neighbourhoods and regional open space networks.



#### Centres Hierarchy - Warringah LGA

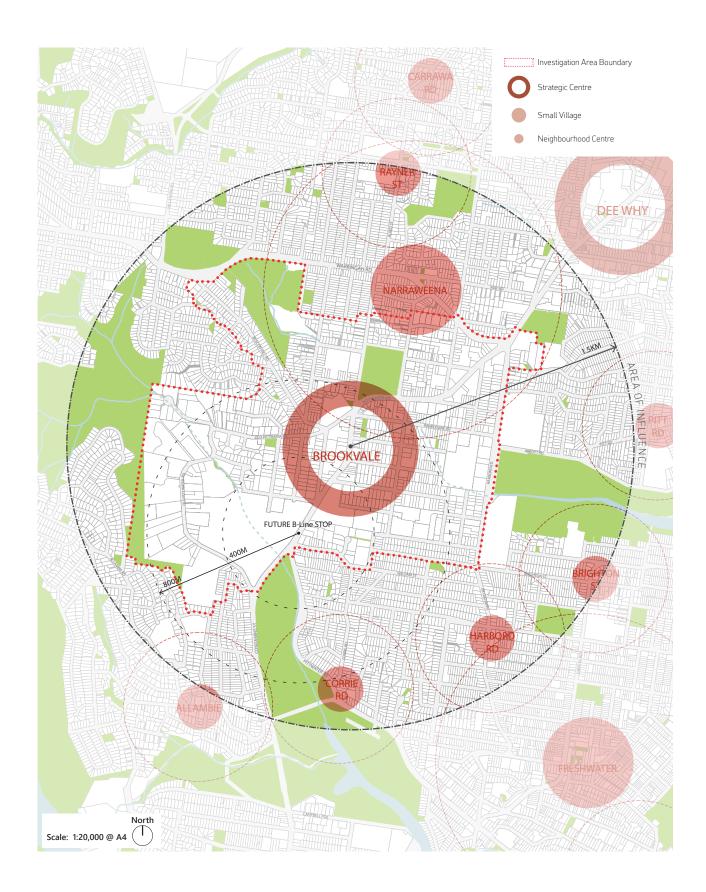
A hierarchy of activity centres exists within Warringah. Planning policy encourages the reinforcement of this structure. Brookvale-Dee Why and the Northern Beaches Hospital Precinct are Strategic Centre's in the Warringah region, as identified in A Plan for Growing Sydney (2014) and thus the majority of the growth is projected in these centres. The Draft North East Subregional strategy (2007) also identifies villages, small villages and neighbourhood centres within the Warringah LGA.



## Centres Hierarchy - Investigation Area

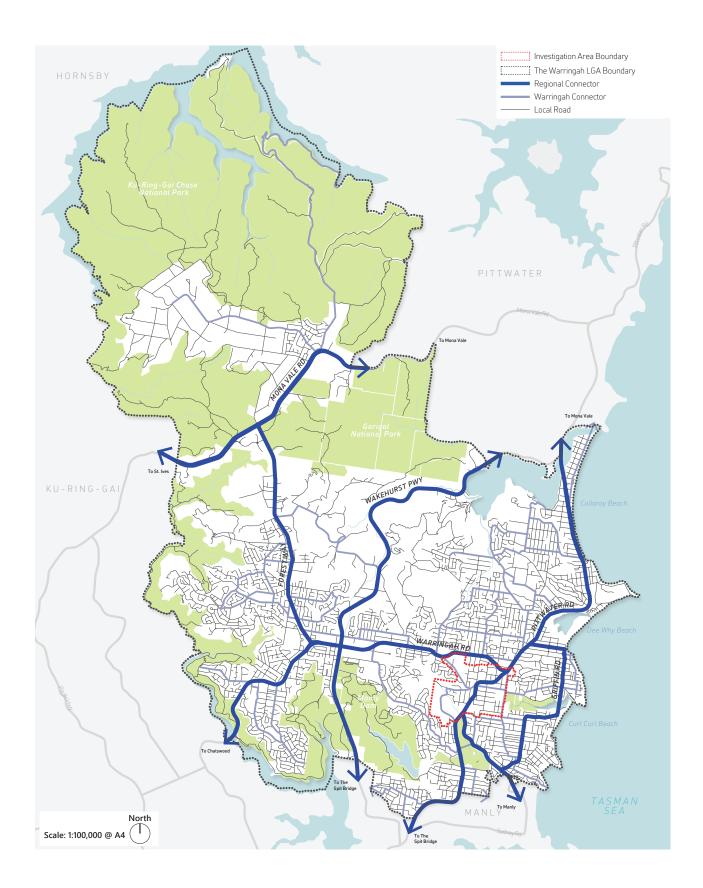


The purpose of the Strategic Centre at Brookvale-Dee Why is to provide an employment focus for the region, by retaining the centre's commercial and industrial core and increasing the capacity for mixed use development including offices, retail services and housing, The Strategic Centre is suggested to improve active transport connections between Warringah Mall, Brookvale and Dee Why and progress planning for a Northern Beaches B-Line corridor.



## Road Hierarchy - Warringah LGA

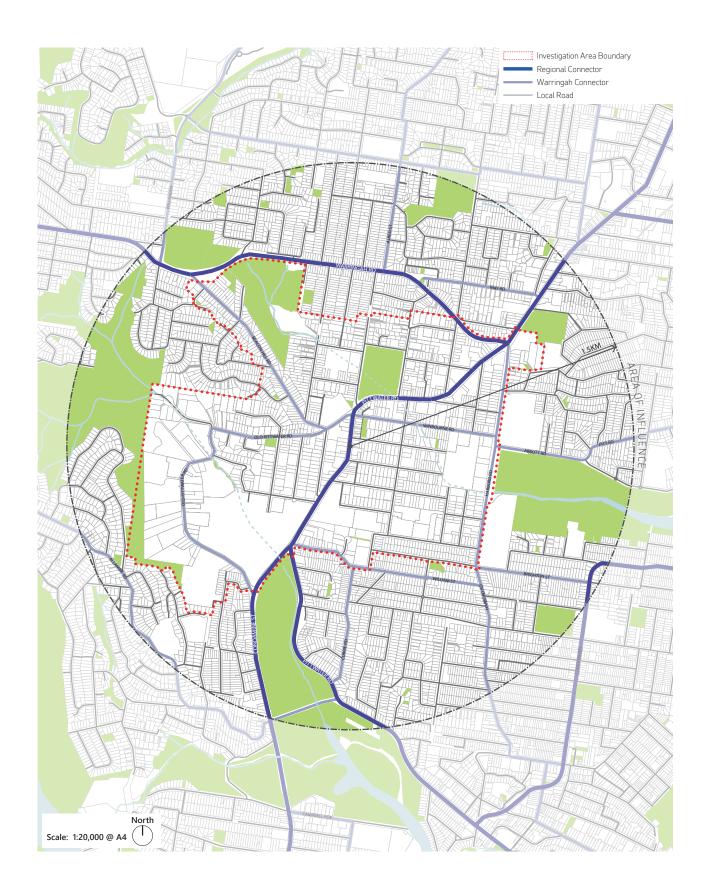
Warringah is well served by an established regional road network. Warringah Road provides the primary east-west spine from Chatswood to Brookvale-Dee Why. North-south connections include Mona Vale Road linking to Ku-ring-gai Chase National Park and Wakehurst Parkway linking to the Northern Beaches. Pittwater Road provides a north-south coastal connector between Manly and Palm Beach.



## Road Hierarchy - Investigation Area

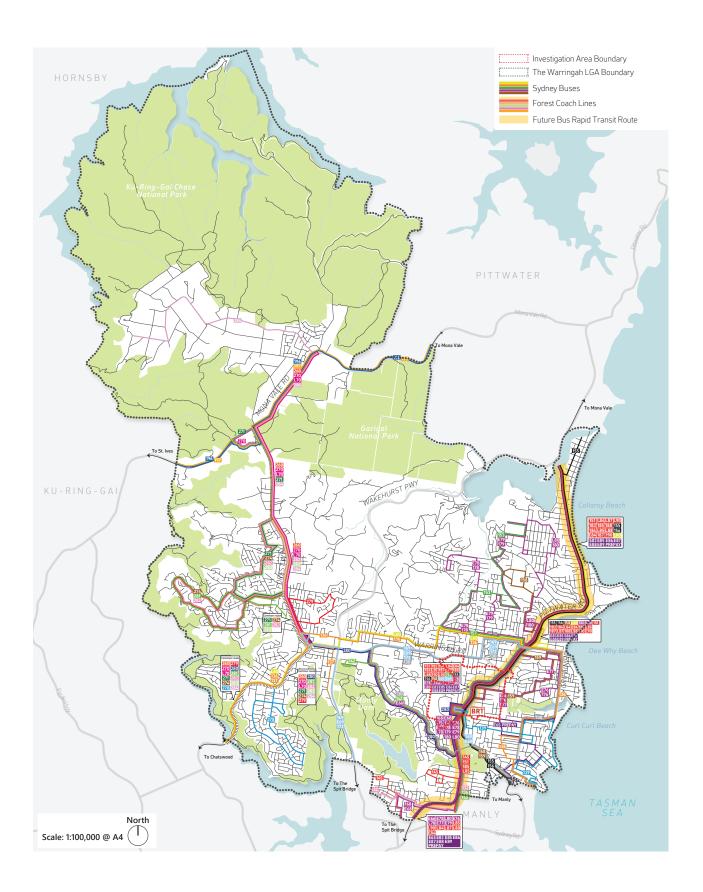


The Investigation Area meets at the junction of Condamine St and Pittwater Rd, with Pittwater Rd providing the north-south connector through the site to Pittwater LGA in the north and Manly LGA and the CBD to the south. Warringah Rd borders part of the Investigation Area to the north and provides the east-west connector through to Chatswood. These major roads are supported by a network of local connectors and roads.



## Public Transport - Warringah LGA

Warringah is well serviced by a regional bus network. Sydney Buses provide the north-south and east-west network. This is augmented by the private Forest Coach Lines service that connects locally to Chatswood in the west. Bus Rapid Transit will to be reinforced along Pittwater Road. For more information refer to Section 2.4: Transport Context.



## Public Transport - Investigation Area

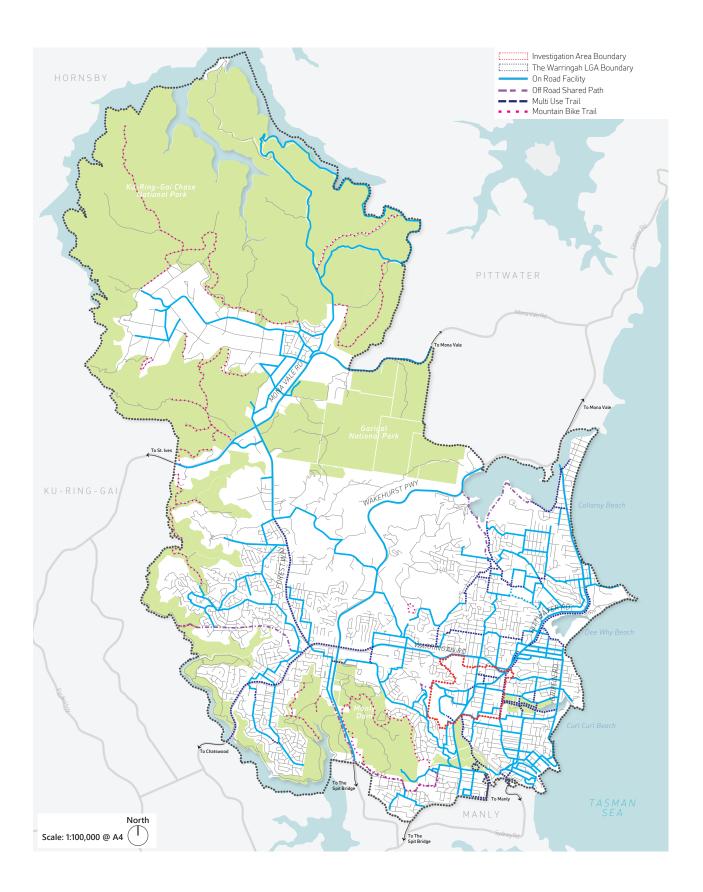


The area is well serviced by bus routes with a bus interchange located at Warringah Mall and the bus depot to the east of Pittwater Rd. Bus Rapid Transit is planned for Pittwater Rd with a stop to be located at the Brookvale Community Health Centre, opposite Warringah Mall. For more information refer to Section 2.4: Transport Context.



## Bicycle Network - Warringah LGA

The Warringah LGA is characterised by a focus on lifestyle and proximity to recreation. Once the Warringah Bike Plan is fully implemented, the area will be even more served by a bicycle network that includes recreational, commuter and local pathways. The network shown in the map below represents Council's plan for the entire Warringah LGA.



## Bicycle Network - Investigation Area

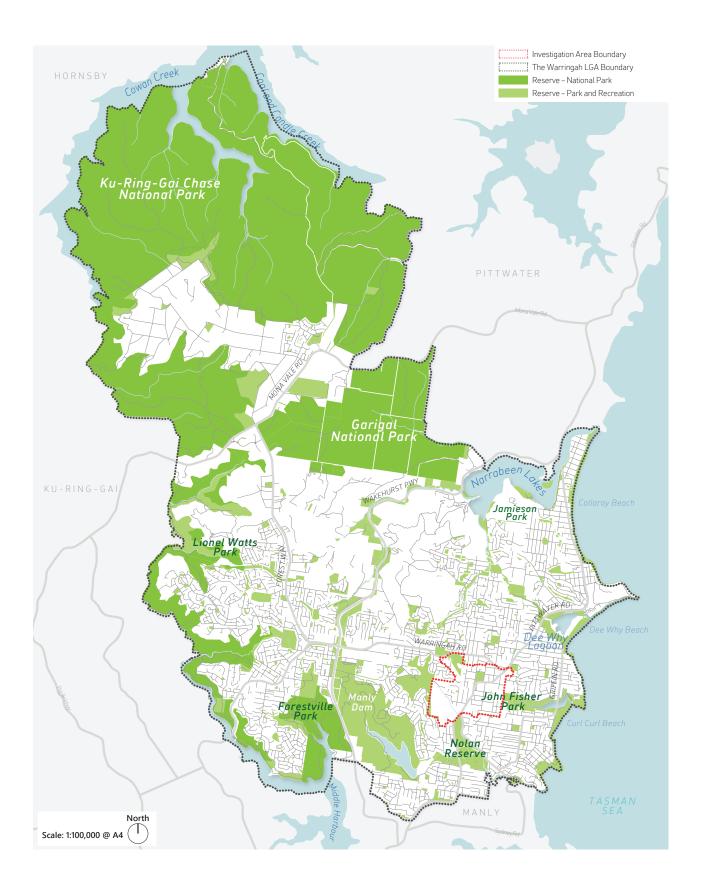


Once the Warringah Bike Plan is fully implemented, the Strategic Centre will be serviced by a bicycle network, however mainly via on road facilities on major roads. The proposed network of off road paths is quite disconnected, with most of these paths only running through the regional parks in the periphery of the Investigation Area. With some sections of bike trails open for public use and others still in the planning stages, the opportunity exists to further connect these trails to ensure a safe network is created to encourage active transport usage. The network shown in the map below represents Council's plan for Brookvale.



#### Open Space - Warringah LGA

The Ku-ring-gai Chase and Garrigal National Park account for nearly 1/3 of the Warringah's Local Government Area. This is an impressive resource asset for the region. It is supported by a network of regional park connectors, coastal precincts and local open spaces across the Warringah LGA.



#### Open Space - Investigation Area

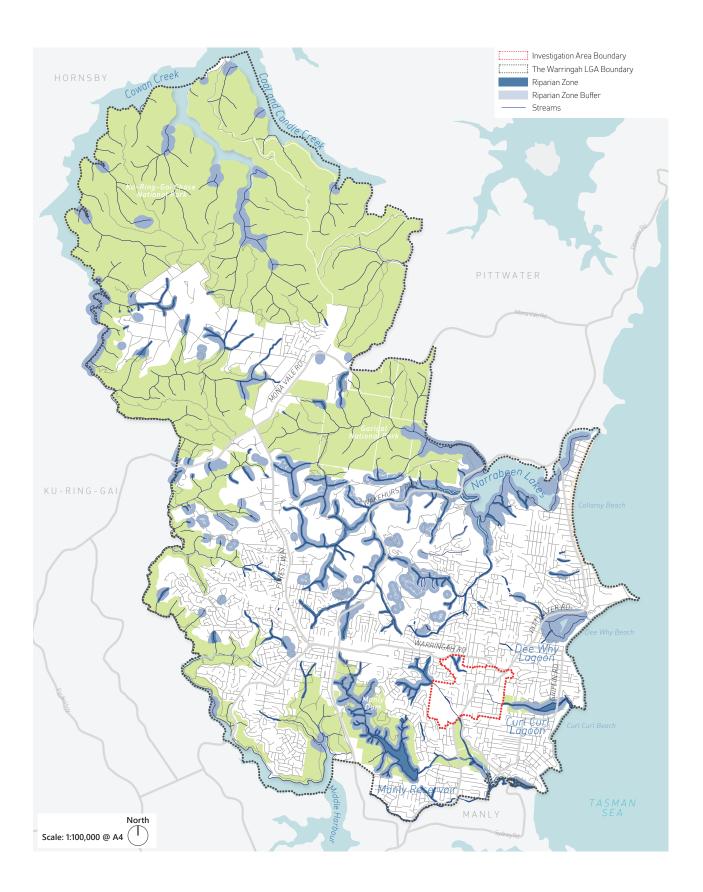


Allenby Park to the west, John Fisher Park to the east, Warringah Golf Course/District Park to the south, Beacon Hill Reserve to the north west, Stony Range Regional Botanic Gardens to the north west as well Brookvale Oval provide a distinctive green identity to the Investigation Area. These provide regionally scaled recreational assets for the Northern Beaches which can be further integrated with recreational facilities and bicycle networks.



## Hydrology - Warringah LGA

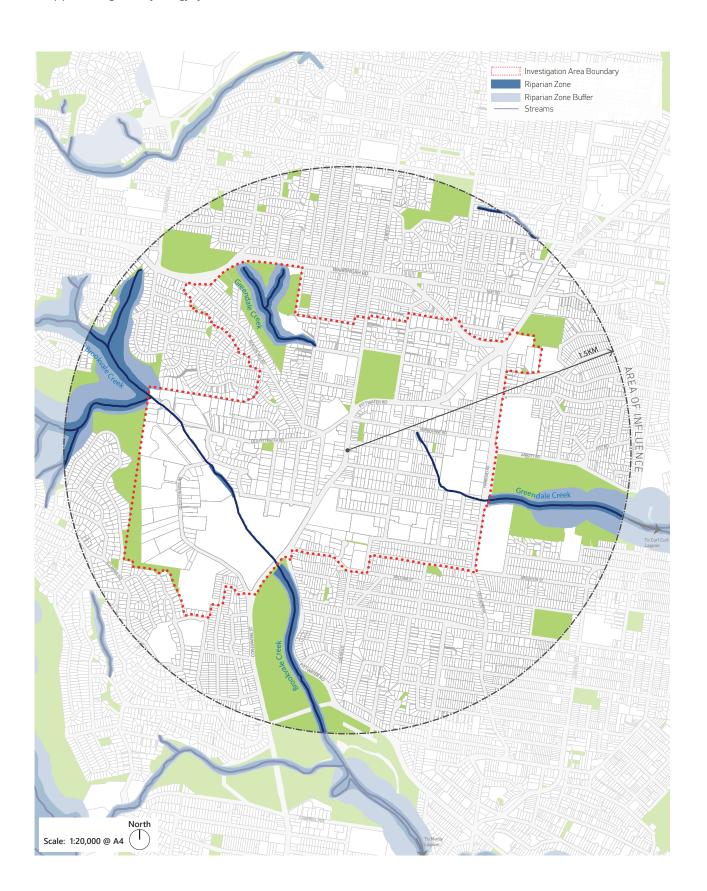
Narrabeen Lakes, Dee Why Lagoon, the Manly Reservoir, Crown Creek, Coal and Candle Creeks and the Tasman Sea are the defining hydrology features of the Warringah LGA. In general, the hydrology networks are connected to the open space network providing landscape across the Warringah LGA which contributes to its identity as a lifestyle area of Sydney.



## Hydrology - Investigation Area

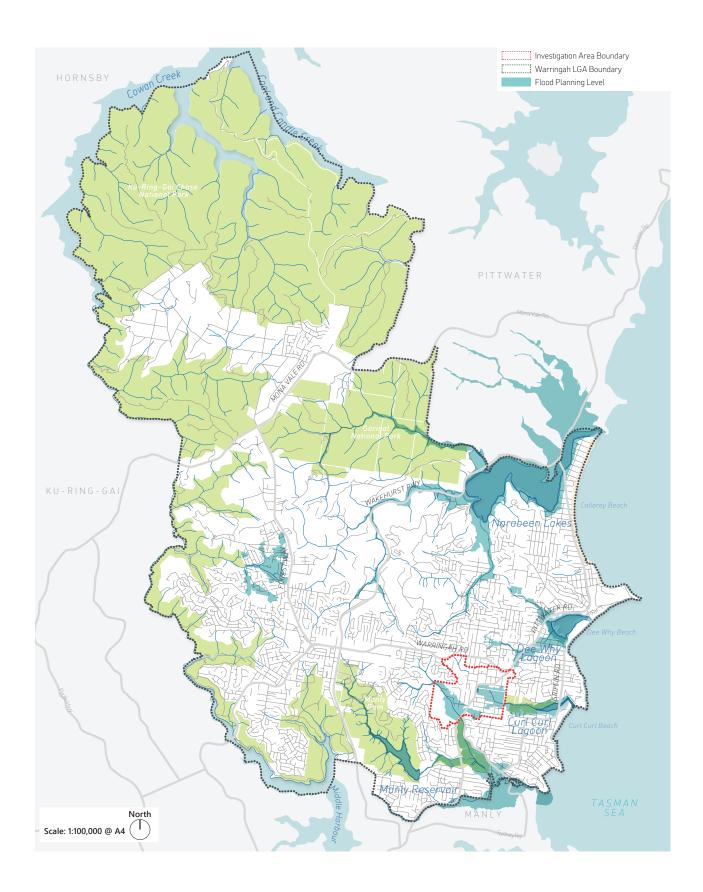


The Investigation Area is affected by riparian zones along Greendale Creek in the north west which also continues from the middle of the site to the east out to Dee Why Lagoon, and Brookvale Creek from the west running through the site to the south to Manly Lagoon. Water management and run off is a significant consideration for the area. Currently, water management is achieved through a combination of open and piped underground hydrology systems.



## Flood Planning Level - LGA

Warringah LGA is prone to flash floods and lagoon flooding. Flood risk is found predominately in the low lying land along the coast, including around Narrabeen Lakes, Dee Why Lagoon, Curl Curl Lagoon and the Manly Reservoir. The flood planning level mapped in this diagram uses data provided by the Warringah Council and illustrates the flood planning level, defined as the 1-in-100 year flood level plus a freeboard.



## Flood Planning Level - Investigation Area

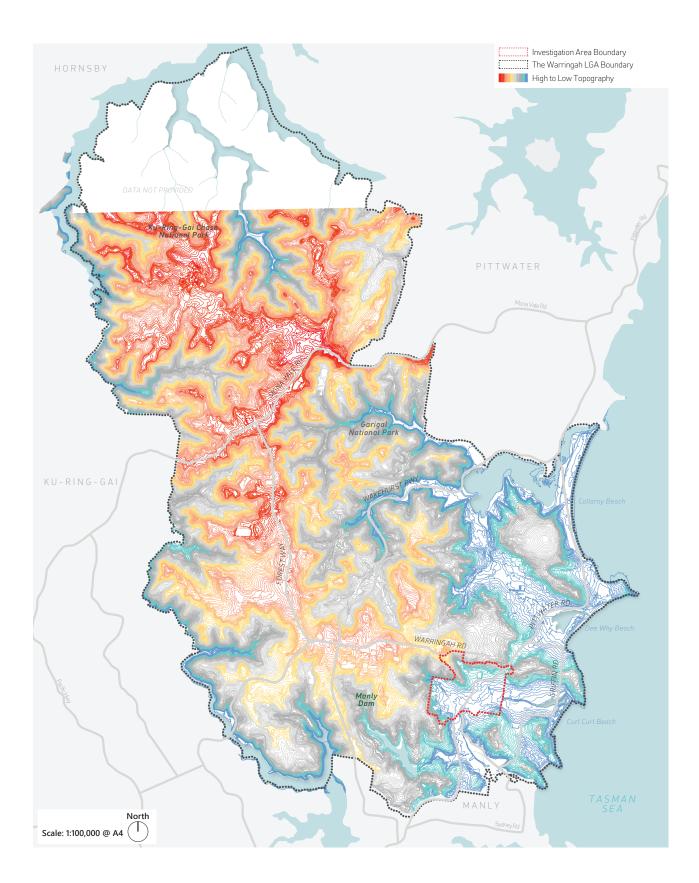


The Investigation Area is subject to flood risk in two main areas as illustrated in this flood planning level map. The flood planning level is equivalent to the 1-in-100 year flood level plus a freeboard. A large area of the east industrial park falls within the flood planning level as well as an area adjacent to Greendale Creek. In the west industrial park there is a small area within the flood planning level which extends across Pittwater Rd just to the south of the bus depot. Consideration must be taken to ensure appropriate land uses and built form outcomes are located where this flood planning level applies.



## Topography - Warringah LGA

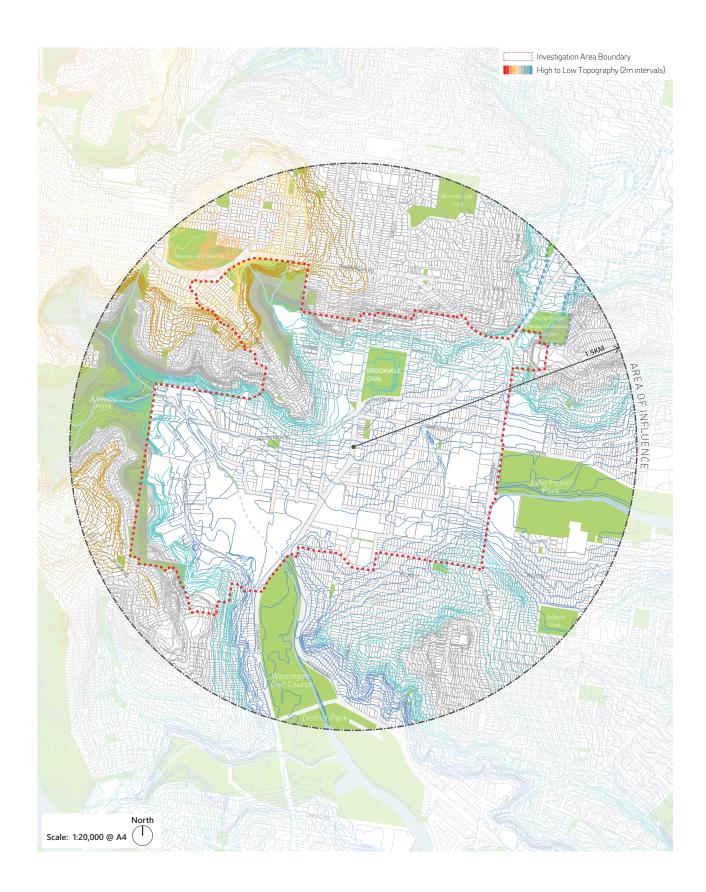
Topography is a distinctive feature of the Warringah LGA. Warringah Road, Wakehurst Parkway and Mona Vale Road are ridge roads that connect east-west and north-south. Significant topography changes can be found in the Warringah LGA's northern and western national parks. The coastal area is the least topographic of the region.



## Topography - Investigation Area

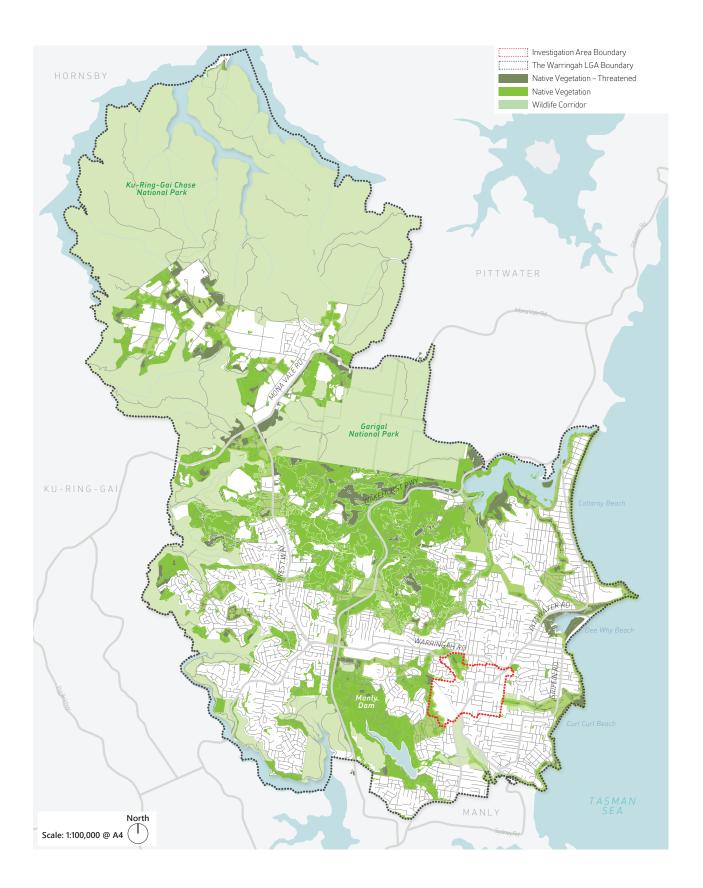


The majority of the Investigation Area is located in the base of a valley which continues south west and east of the site. All other directions have an incline in topography providing views down to the site. There is a steep incline in the topography to the west and north borders and in the north west of the site up Beacon Hill Rd, which also provides panoramic views out to the coast and in the distance to Sydney CBD.



## Vegetation - Warringah LGA

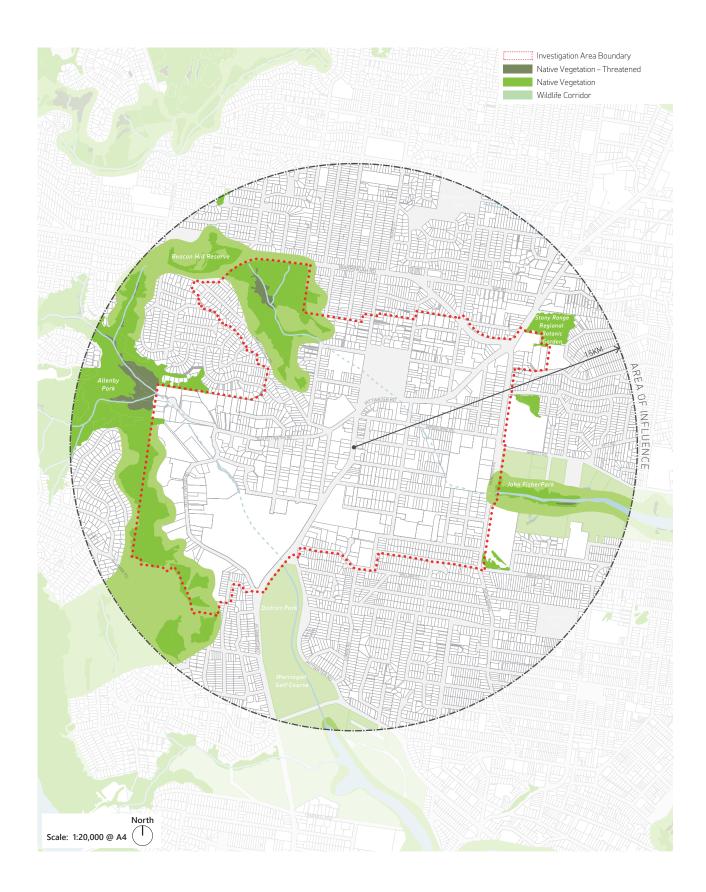
Warringah LGA is densely vegetated and contributes to its identity as a coastal and lifestyle destination and environment. Vegetation primarily responds to riparian corridors. Threatened vegetation is found primarily in the Warringah LGA around Dee Why Lagoon and Narrabeen Lakes.



## Vegetation - Investigation Area

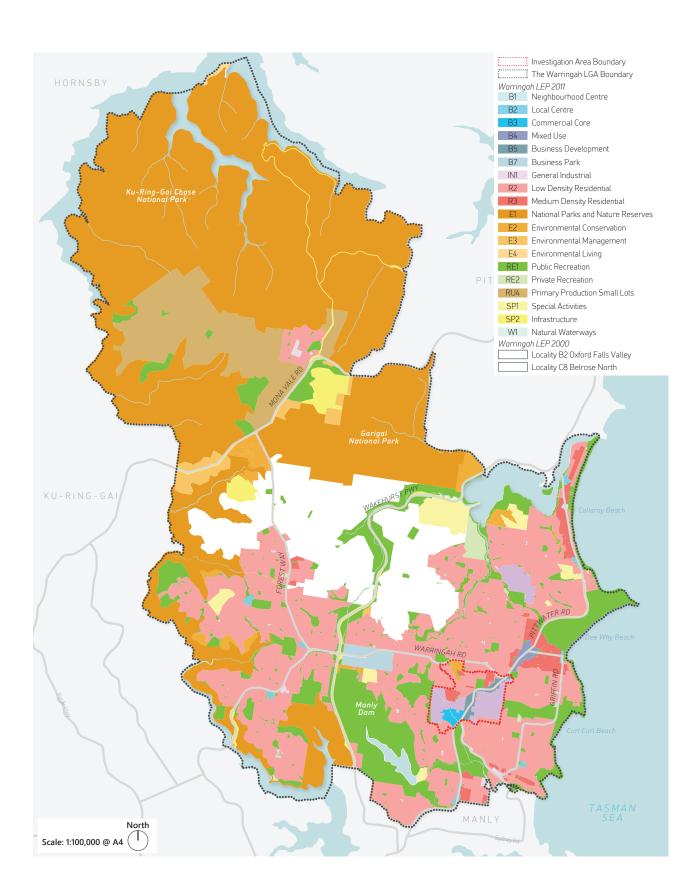


Allenby Park, Beacon Hill Reserve and John Fisher Park are surrounded by native vegetation and are considered wildlife corridors. These reserves have pockets of threatened native vegetation, Allenby Park however has the most significant threatened native vegetation which borders on industrial land and thus should be considered in the Brookvale structure plan process.



## Zoning - Warringah LGA

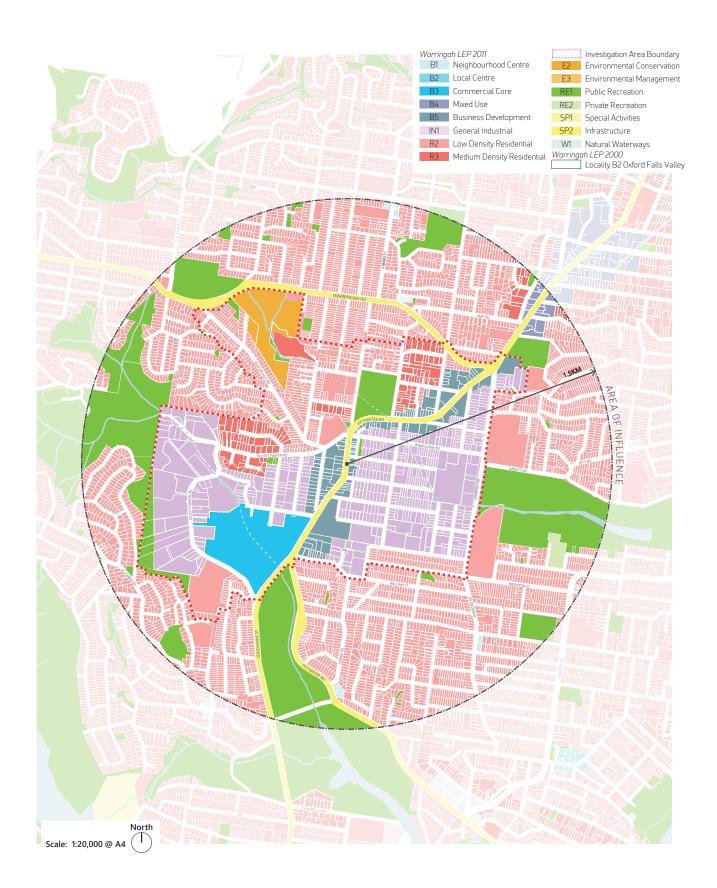
Low Density Residential, National Parks and Reserves are Warringah LGA's defining zoning classifications. Medium Density Residential is generally located to the east and within existing centres. The Industrial zoning in Brookvale is of a significant scale with regional importance.



#### Zoning - Investigation Area

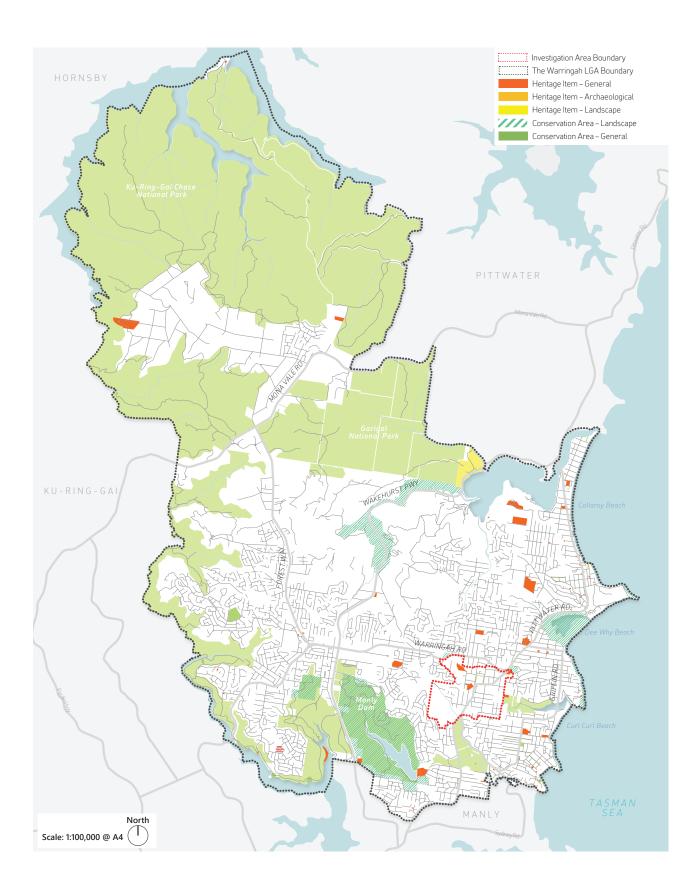


The primary zoning feature of the precinct is IN1 General Industrial. This is coupled with the large retail centre of Warringah Mall zoned as B3 Commercial Core, and the Pittwater Rd corridor zoned as B5 Business Development. The dominant residential typology is low density with parcels of medium density in the north. Public recreation space is primarily found on the borders of the Investigation Area.



## Heritage - Warringah LGA

Large scale heritage items within the Warringah LGA are generally associated with the National Parks. These include both archaeological and general classifications. Landscape conservation areas are also a dominant heritage feature of the Warringah LGA.



#### Heritage - Investigation Area

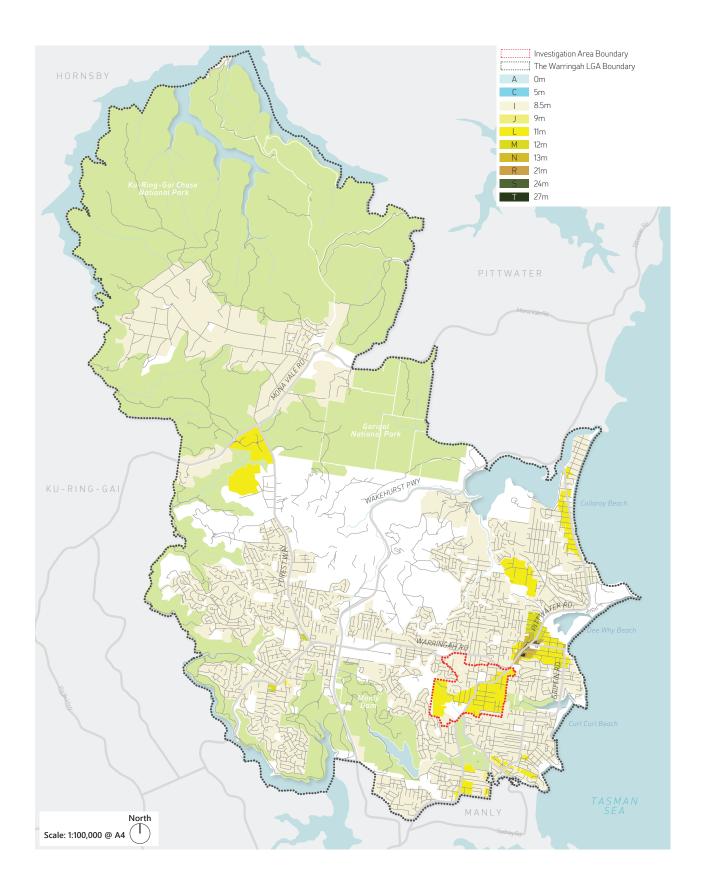


Three general conservation areas are found on the perimeter of the investigation area, including Governor Phillip Outlook, Stony Range Flora Reserve and Quarry Reserve. Two streets and parts of Brookvale Oval are dedicated as landscape heritage due to their street trees. General heritage items include a mix of land uses, including memorials and two residences which identified as inter-war Spanish mission style. There are also two buildings that have been adaptively reused. These are the premises relating to Austral Brickworks which is now a medium density residential development called the Kiln and the Wormald building which now operates as Office Works and Fitness First.



## Building Height - Warringah LGA

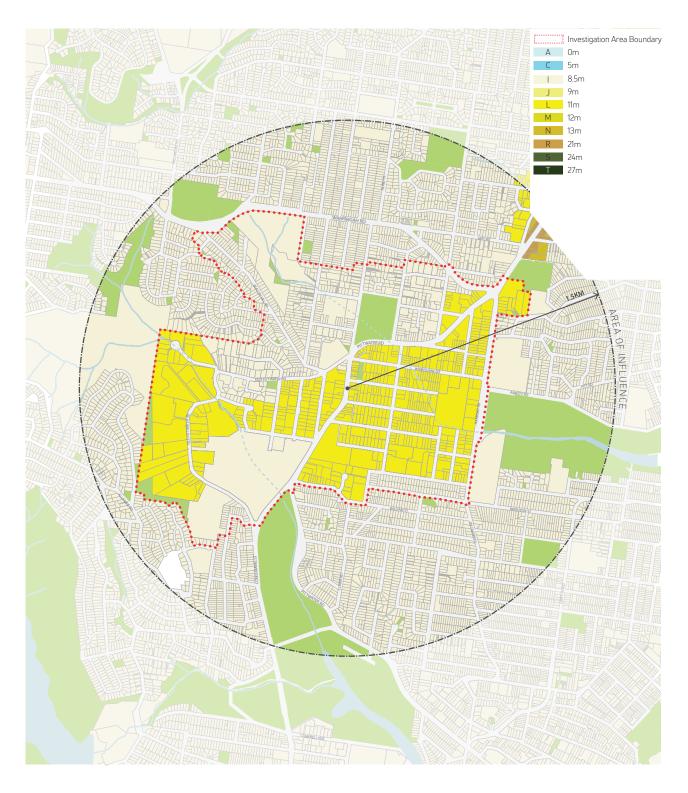
Much of the Warringah LGA has low building height allowances. Taller building height is encouraged along Pittwater Road, including at Brookvale and Dee Why. There are site specific building height controls at Dee Why which have arisen from the Dee Why Town Centre Master Plan. Other clusters of height are also permitted in and around existing economic centres and employment areas.



## Building Height - Investigation Area



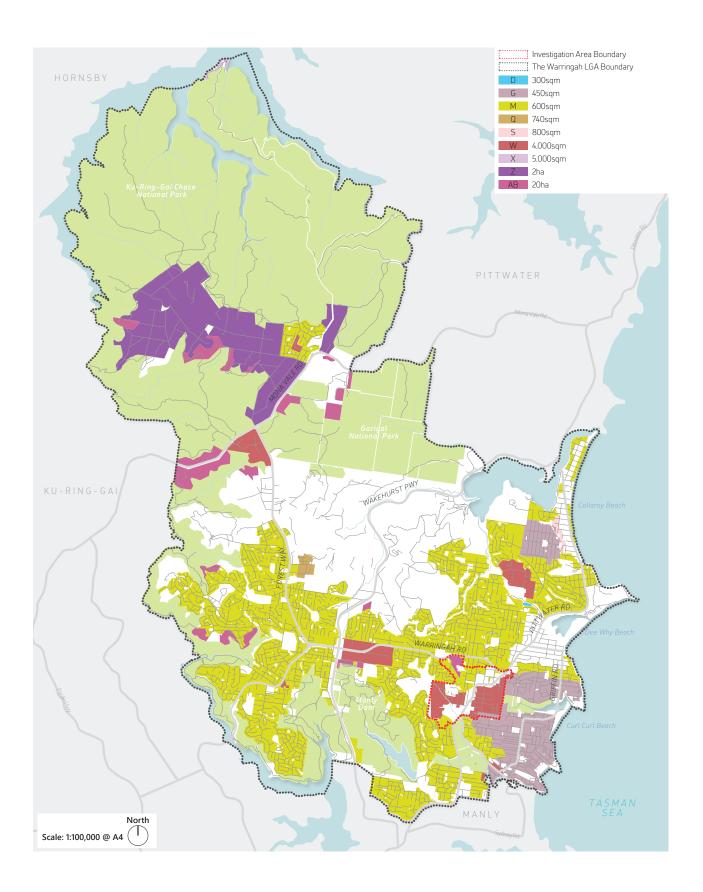
The general industrial and business development zoned land have a building height limit of 11m which is the tallest within the Investigation Area. All remaining land has a height limit of 8.5m, To the North East of the Investigation Area, the Dee Why Town Centre has significantly higher building heights, following on from the Master Plan process.





## Lot Size - Warringah LGA

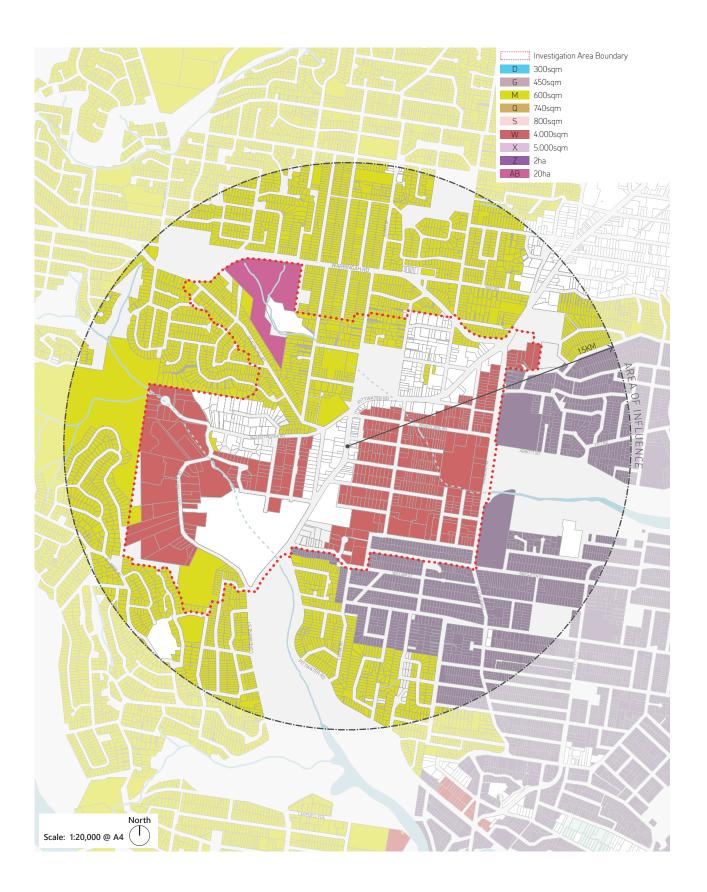
Larger lot classifications are concentrated in the north west amongst the national park system, while smaller lots are permitted along Pittwater Road to the east. The majority of lot size is 600sqm which provides a highly flexible structure for Warringah LGA.



## Lot Size - Investigation Area

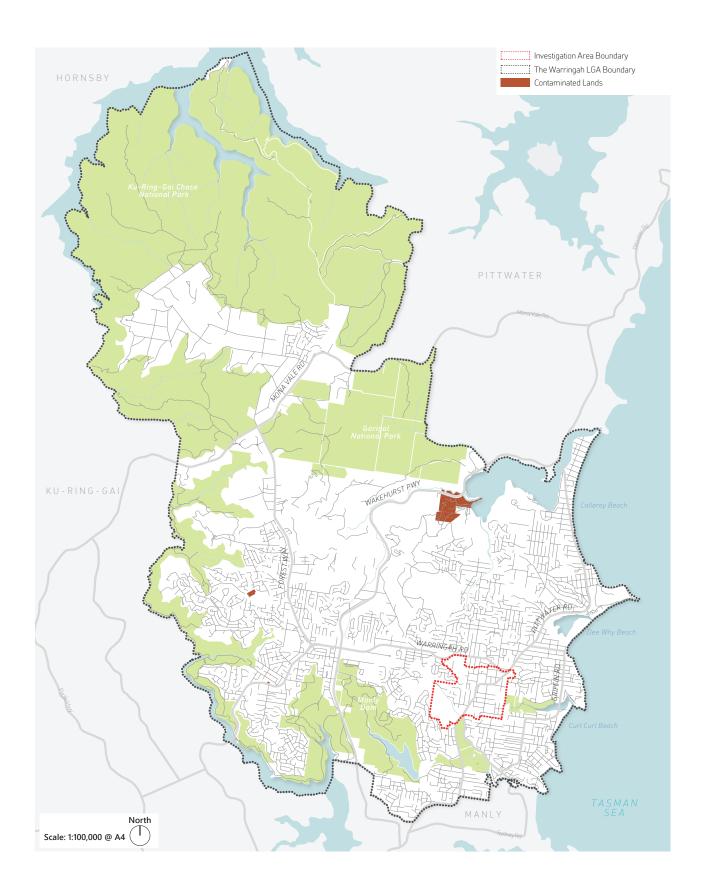


Within the Investigation Area, land zoned as IN1 General Industrial is identified with a lot size of 4,000sqm. There is no minimum lot size within the B5 Business Development and B3 Commercial Core zones. The R1 Low Density Residential housing in the south of the site has a lot size of 2ha, whereas the residential land in the north of the site both R1 Low Density Residential and R2 Medium Density Residential has a lot size of 600sqm.



## Contaminated Lands - Warringah LGA

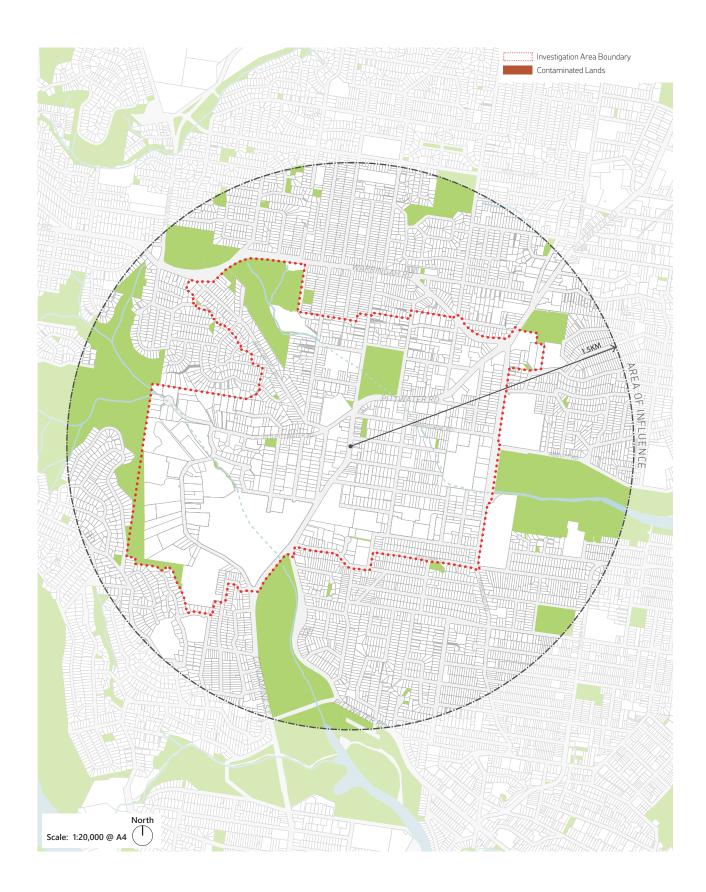
A lack of contaminated lands in the Warringah LGA means the area's natural assets likely don't have historical legacies of being threatened by contamination. However, notable large parcels by Narrabeen Lakes are classified as contaminated, something particularly troublesome considering this area's designation as a Wildlife Corridor and Landscape Conservation Area.



## Contaminated Lands - Investigation Area

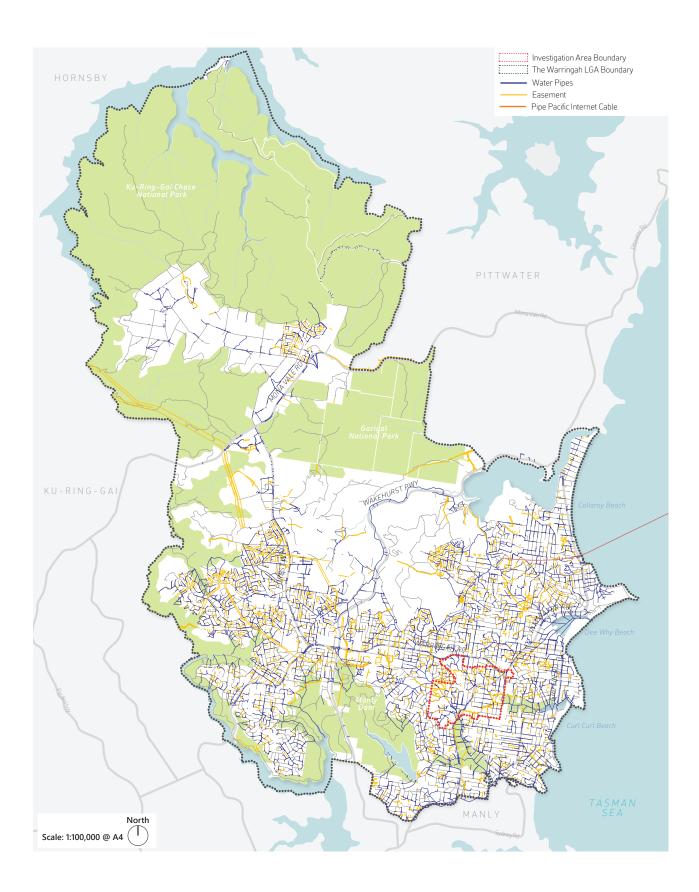


The contaminated lands data supplied to Hames Sharley identifies only those sites that have been notified to Warringah Council as being reportable under the Contaminated Land Management Act, 1997. Despite much industrial activity in Brookvale, there are no such reported sites in the investigation area.



## Major Utilities - Warringah LGA

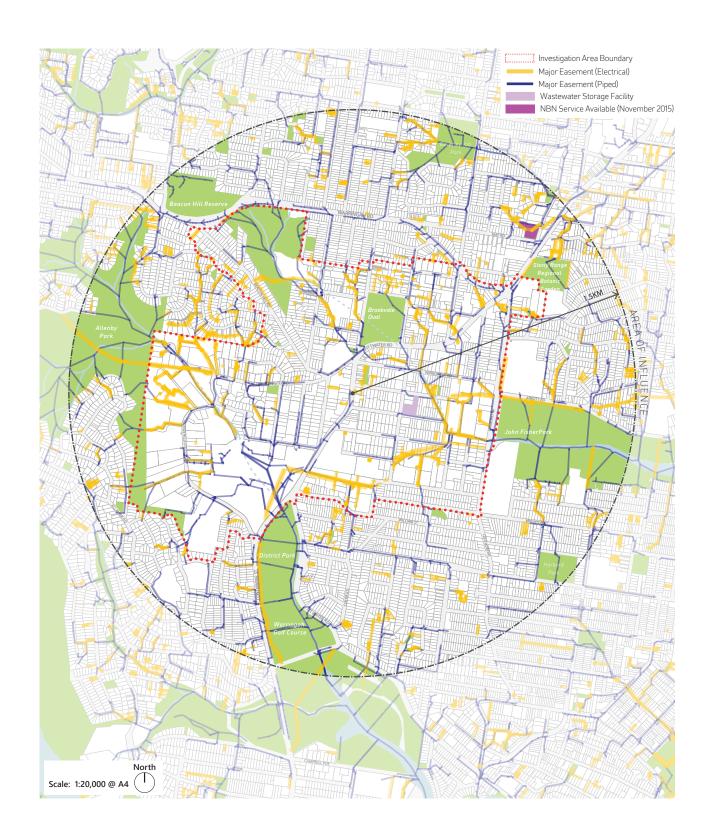
Warringah's water pipe network adequately serves the residential and commercial precincts of the Warringah LGA including all of Frenchs Forest. Major easements run throughout the entire Warringah LGA as well, but unlike the water pipe system, they do extend into Warringah LGA's natural areas. Major easements can be found running through Ku-ring-gai Chase National Park and along Wakehurst Parkway near Frenchs Forest.



#### Major Utilities - Investigation Area

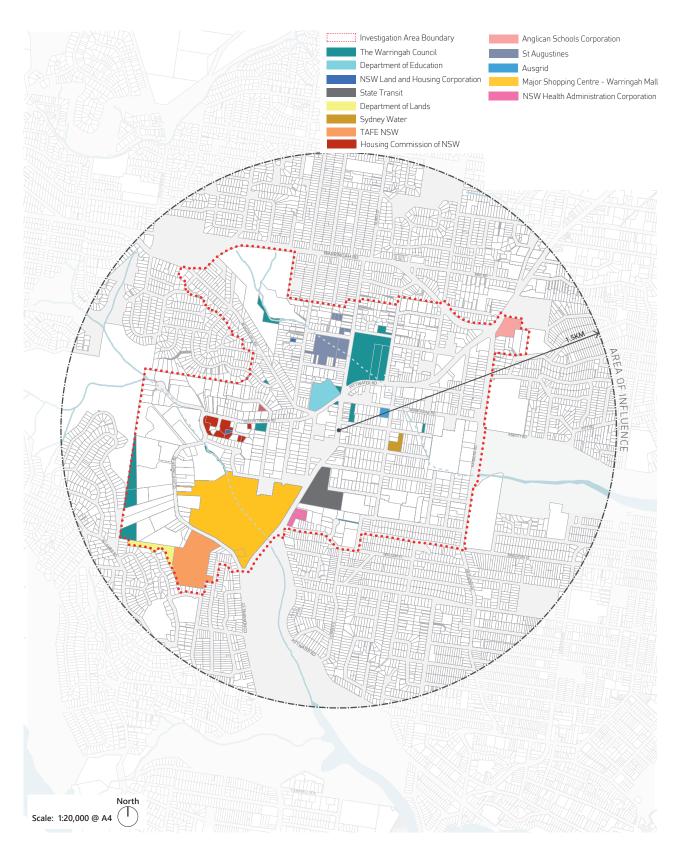


Major electric easements run east from Allenby Park into the west industrial precinct as well as from District Park through to John Fisher Park. The water pipe network takes on a typical pattern, serving the residential and commercial uses of the precinct. There is an overflow wastewater storage facility in the east industrial precinct. The NBN is currently being rolled out across Australia. As at November 2015, the Allure development on Mooramba Rd is the only site in the area of influence with fixed line NBN service currently available. NBN Co states that the expected time of the first site in Brookvale to commence fibre to the node (FTTN) construction is in the fourth quarter of 2016. Economic growth and technology are intrinsically linked. The digital economy demands a fast and reliable network to enable access to new markets, drive innovation and gain the competitive edge on the global stage. Brookvale can harness this opportunity through its FTTN.



# Public Ownership and Other Infrastructure - Investigation Area

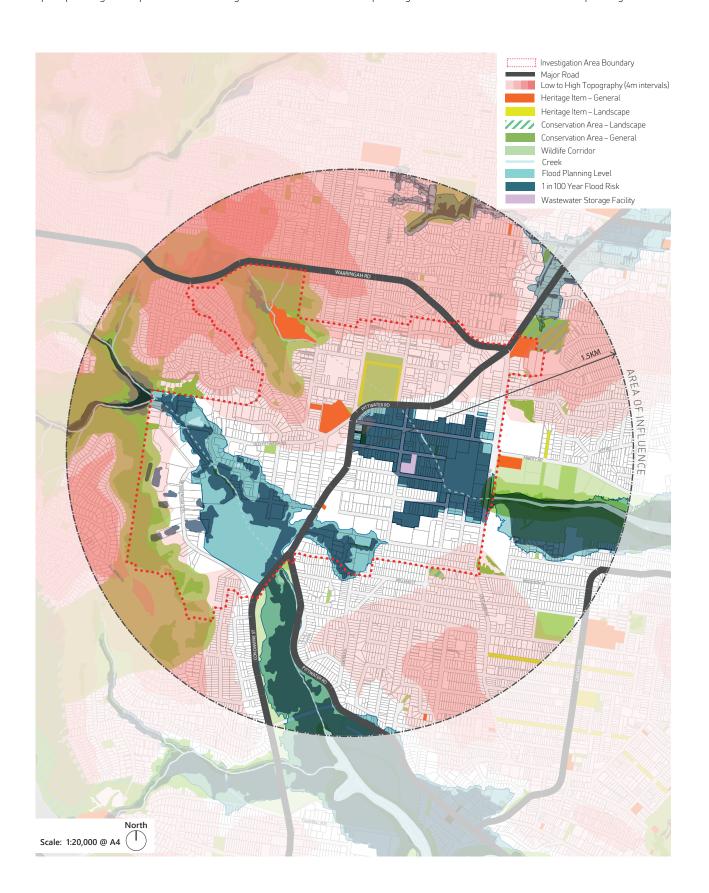
The major land owners of state and council land are illustrated below. AMP & Westfield own the largest parcel of land which is Warringah Mall Shopping Centre. Warringah Council's significant land holding is the Brookvale Oval. The council also own smaller parcels of land scattered throughout the Investigation Area.



#### Development Constraints - Investigation Area



Pittwater Rd is a major road which divides the Investigation Area into two districts. Topographical challenges exist most notably to the north west and west in the reserves. Heritage items are scattered throughout the Investigation Area and must be preserved. A storm water overflow tank is found in the east industrial park. Wildlife corridors, conservation areas and threatened vegetation are found within the large areas of open space. Significant portions of the Investigation Area fall within the flood planning level and must be considered in future planning.

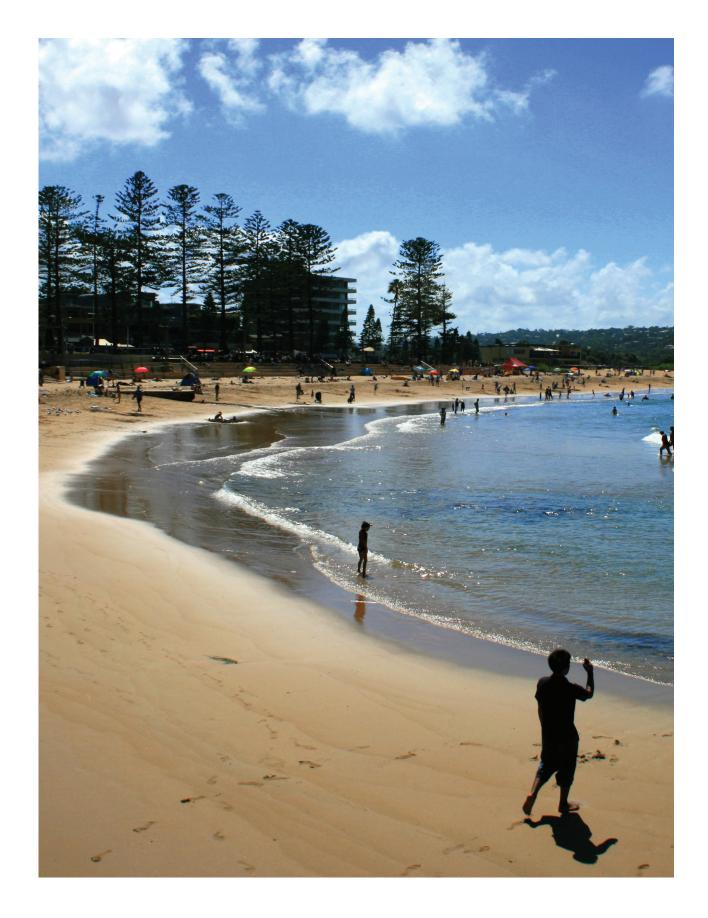


#### **Key Findings**

The key findings from this analysis of the mapping context can be summarised as below:

- Brookvale is distinctively located between the bush and the beach, and yet neither define the character of the place. Linking the beach to the bush via Brookvale will secure the identity of the place.
- + Brookvale is divided by its complex road network and segregated land uses.
- + Topography within the centre is distinctive. The centre is located at the base of a valley with steep topography surrounding it to the west.
- Brookvale is characterised by flood planes adjacent to the creek corridors. These corridors can be incorporated within open space initiatives that provide water management and public amenity outcomes.
- A definable, central public place for Brookvale does not form part of the existing structure of the centre.
   Defining this place is important to the destinational quality and attractiveness of the centre.
- + The centre is characterised by a number of large asset holdings. Partnerships with these property owners is encouraged to achieve mutually agreeable outcomes for the centre.





# 2 3 Economic Context

This economic analysis reviews the Brookvale commercial and industrial precinct to help inform the future strategic planning of the area for the Warringah Council. This review investigates population, housing and employment/business trends, current influences and emerging business drivers that will determine potential future Brookvale and its employment and land use needs. In particular, this report will help to inform the proposed Brookvale Structure Plan and associated land use planning for the area.

This chapter provides the following analysis:

- + Population, Household and Market Overview
- + Employment and Business Overview
- + Key Findings

An emphasis has been placed on employment and business growth and trends in the Brookvale precinct. Brookvale is dominated by a mix of industrial, retail and commercial uses with the northern fringe of the precinct containing residential uses in the form of predominantly apartments and detached dwellings. This area also contains Brookvale Park and education facilities.

Warringah Council have identified Brookvale as an important strategic centre along with Dee Why. A key outcome for Brookvale is in developing diversity of employment within the northern beaches region. Diversity is a crucial component in the pursuit of sustainability within both the Warringah Local Government Area (LGA) and the broader region. Warringah has built a high level of economic self-sufficiency due to the strength and variety of its local businesses which is strongly influenced by the Brookvale precinct.

In maintaining and growing this strength of Brookvale the following analysis explores the issues related with the facilitation of this growth, the existing characteristics and land use activity within the Brookvale area and demographic and economic considerations.

Brookvale and Dee-Why are also identified as a Strategic Centre by the NSW Government in "A Plan for Growing Sydney". A jobs and employment hub to provide greater benefits to the overall productivity of Sydney

Overall Brookvale and the wider Warringah LGA continue to be an attractive place to live, work and play. The Warringah LGA offers a growing diversity of high amenity living and Brookvale supports the diversity with a dynamic working environment. Businesses currently within Brookvale benefit from the proximity of other businesses and services and are clustered in a well located and varied centre. This is important for productivity, fosters innovation, improves efficiency and economies of scale and supports growth and economic activity.

For the purpose of this research, we have utilised 'ABS Census (2011)', 'ABS Count of Businesses (2014)', 'ABS Building Approvals', 'ABS Regional Population Growth', 'BTS (TZ 2143, TZ 2144 and TZ 2145)', 'BTS (2015)' and 'Cordell Connect (2015)' data relating to the Brookvale precinct. In particular, we have utilised 'Brookvale-Freshwater SA2' region data to generate an outlook for the precinct. We have then compared this precinct with the wider Warringah LGA to assess its similarities and differences to understand opportunities and capacity for growth and/or evolution. In addition on-site survey reconnaissance of the Brookvale precinct and a ground-truth review was undertaken to ensure research accuracy.



BTS travel zone data has been assessed to provide a more accurate representation of the Brookvale precinct and to provide population, workforce and employment projections. ABS and BTS data sets have advantages and limitations:

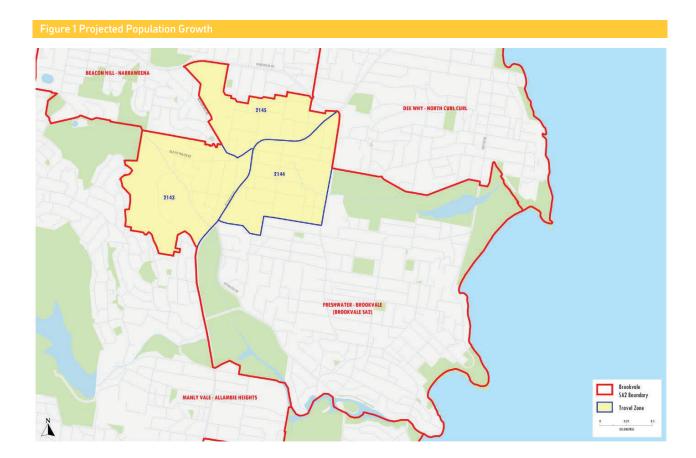
- + From a locational perspective, BTS travel zone data is more precise than ABS SA2 region data, as ABS data also has regard for Freshwater, Curl Curl and Queenscliff;
- + BTS provides population, workforce and employment projections for travel zones;
- + However, ABS provides more extensive datasets.

This report will identify potential key economic drivers for the Brookvale area such as:

- + Rapid Bus Transport Corridor (B-Line)
- + Connection to the Northern Beaches Hospital Precinct

- + Brookvale (Commercial Core) for the Warringah LGA and for long-term employment growth.
- + Capacity for additional mixed-use development in Brookvale including offices, retail, services and housing.
- + Identify and protect strategically important industrial-zoned
- + Improve walking and cycling connections between Warringah Mall, Brookvale and Dee Why.

For the purposes of clarity and simplicity the ABS Freshwater – Brookvale SA2 region will be referred to from this point forward as the Brookvale SA2 region and the BTS travel zones will be referred to as the Brookvale TZ area.



### 2.3.1 Population, Household and Market Overview

This section outlines the key demographic, household formation and market trends that have influenced Warringah LGA and Brookvale's housing market conditions and those that are expected to influence conditions over the immediate future. This research will largely draw upon ABS 2006 & 2011 Census data for the Brookvale SA2 region, but where available, we will utilise more current ABS datasets.

#### **POPULATION GROWTH**

As at 2014, the Brookvale SA2 region has a population of 21,721 persons. Over the ten year period to 2014, population growth in the precinct has been solid, expanding at an average annual rate of 1.8% per annum. Growth has been most prominent in the 50-64 age bracket (3.0% per annum), followed by the 35-49 age cohort (2.6% per annum) and the 0-19 age cohort (2.6% per annum). More specifically, we have derived population data from the Bureau of Transport Statistics for the suburb of Brookvale and according to the Brookvale TZ area it had 2,759 residents in 2011.

Overall, the Brookvale SA2 region has had stronger than average growth in the resident population, relative to the Warringah LGA, over the ten year period to 2014. Aside from the 65+ age cohort, all age brackets demonstrated considerably greater annual average growth than the Warringah LGA. Notably, however, the 65+ age cohort has evidenced an average annual decline of 0.1% in the Brookvale SA2 region, compared with the Warringah LGA, where this cohort has been a significant contributor to growth.

Table 1 Population Growth, Brookvale SA2					
Age Cohort	2004	2014	Annual Change	CAGR*	
0-19	3,884	5,036	115	2.6%	
20-34	5,303	5,574	27	0.5%	
35-49	4,302	5,567	127	2.6%	
50-64	2,531	3,400	87	3.0%	
65+	2,176	2,144	-3	-0.1%	
Total	18,196	21,721	353	1.8%	

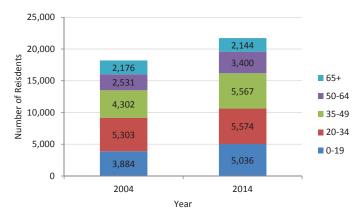
Source: ABS Regional Population Growth (2014)

#### **POPULATION PROJECTIONS**

According to the BTS the resident population of the Brookvale precinct is expected to reach 4,420 by 2031, equating to an increase of 1,661 persons (2,4% growth per annum) consistently over the next 15 years. While Brookvale has a relatively small residential population base within the Brookvale TZ, given its strategic employment importance and character as an activity centre supporting the wider LGA and northern beaches it is anticipated the future pressure will occur for higher density along the fringes.

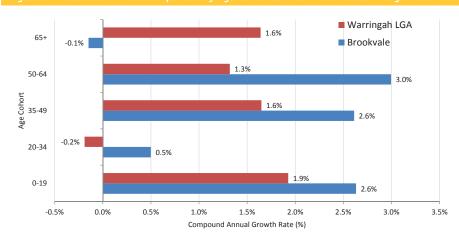


Figure 2 Population Growth, Brookvale SA2 Region (2004-2014)



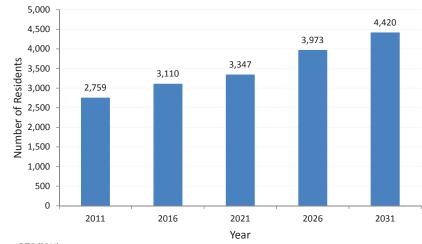
Source: ABS Regional Population Growth (2014)

Figure 3 Annual Growth Rate Comparison by Age Cohort between Brookvale SA2 region and Warringah LGA (2004 – 2014)



Source: ABS Regional Population Growth (2014)

Figure 4 Population Projections, Brookvale TZ Area (2011- 2031)



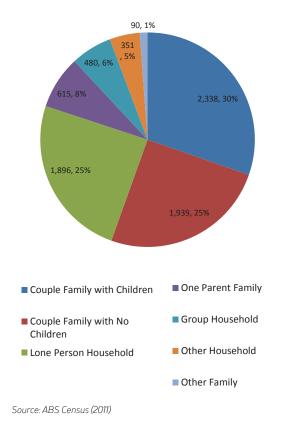
Source: BTS (2014)

#### HOUSEHOLD COMPOSITION

As at 2011, there were 7,709 households in the Brookvale SA2 region. The dominant household structures include couple families with children (30%), couple families with no children (25%) and lone person households (25%).

Relative to the Warringah LGA, there are a greater number of lone person households (25% vs 22%) and fewer couple families with children (30% vs 37%). Notably, the Brookvale SA2 region has more lone person households than the Warringah LGA (25% vs 22%).

Figure 5 Household Composition, Brookvale SA2 region



#### **HOUSEHOLD CHANGE**

Between 2006 and 2011, there was a net increase of the total number of households in the Brookvale SA2 region. This increase was dominated by couple families with children and one parent families expanded by 258 and 18, respectively. Conversely, all other household typologies experienced a decline over the period.

As a point of comparison, the Warringah LGA had a net increase of 1.841 household over the five year period to 2011. Growth in the Brookvale SA2 region has accounted for just 1.5% of growth in the Warringah LGA.

Household growth has primarily occurred amongst couple families with children (+258 households) and one parents families (+18 households). Interestingly, the number of lone person households grew in the Warringah LGA (328 households), compared with the Brookvale SA2 region, which evidenced a decline (-62 households).

#### **AVERAGE HOUSEHOLD SIZE**

According to Census time series data, the average household sizes in the Brookvale SA2 region and Warringah LGA are similar. Albeit marginal, the average number of persons per household in the Brookvale SA2 region has risen from 2.4 to 2.5 between 2001 and 2011.

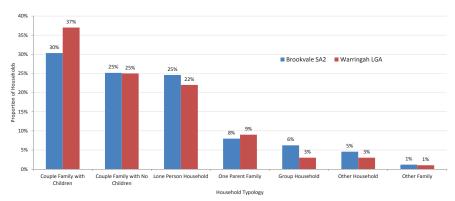
Table 2 Average Household Size, Brookvale SA2 Region & Warringah LGA (2001-2011)

Region	2001	2006	2011	
Brookvale SA2	2.4	2.4	2.5	
Warringah LGA	2.6	2.6	2.7	

Source: Census (2001, 2006, 2011)

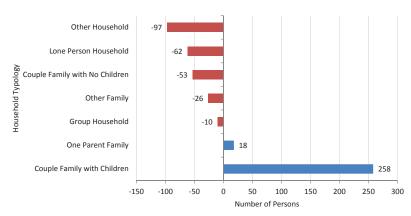


Figure 6 Household Composition, Brookvale SA2 region and Warringah LGA (2011)



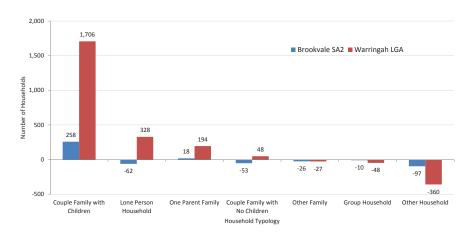
Source: ABS Census (2011)

Figure 7 Household Change, Brookvale SA2 region (2006 – 2011)



Source: ABS Census (2006 - 2011)

Figure 8 Household Change, Brookvale SA2 region (2006 - 2011



Source: ABS Census (2006 - 2011)

#### PRIVATE DWELLING COMPOSITION

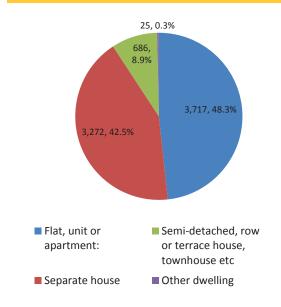
As at 2011, there were 7,700 dwellings in Brookvale. The dominant private dwelling typology in the Brookvale SA2 region is a flat, unit, or apartment, being 48% of the overall housing stock. This is followed by separate houses at 42%.

Relative to the Warringah LGA, the Brookvale SA2 region has a higher proportion of flats, units and apartments (48% vs 33%). Conversely, the Brookvale SA2 region has a smaller proportion of dwellings classified as a separate house (42% vs 61%) and semidetached, row or terrace housing (6.2% vs 12.8%).

# PRIVATE DWELLING COMPOSITION CHANGE

Over the five year period to 2011, the number of dwellings in the Brookvale SA2 region expanded. As a proportion of total dwellings, separate houses declined from 47% to 43%. Separate houses have been replaced by semi-detached housing and flats, units and apartments which demonstrated growth by 4% and 1%, respectively.

Figure 9 Dwelling Composition, Brookvale SA2 region (2001)

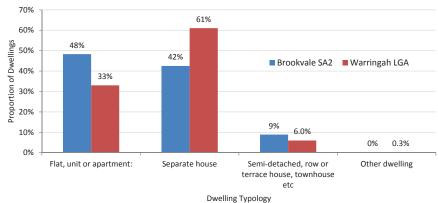


Source: ABS Census (2011)

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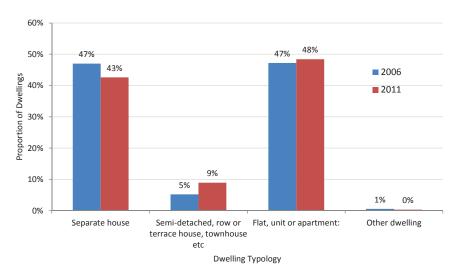


Figure 10 Dwelling Composition, Brookvale SA2 region and Warringah LGA (2011)



Source: ABS Census (2011)

Figure 11 Dwelling Composition Change, Brookvale SA2 region (2006 - 2011



Source: ABS Census (2006 - 2011)

#### **DWELLING PRICE GROWTH**

According to RP Data, the median price of a detached dwelling in Brookvale increased from \$685,000 in 2006 to \$1,107,500 in 2014, demonstrating annual average growth of 3.6%. Overall, the average median price of a detached dwelling in the Warringah LGA is 10% greater than dwellings in Brookvale. The median value of a detached dwelling in the Warringah LGA increased from \$753,750 to \$1,203,000 (7.5% annual average growth) over the eight year period to 2014..

The median value of a residential strata unit (apartment) in Brookvale SA2 region increased from \$420,000 in 2006 to \$550,000 in 2014, demonstrating average annual growth of 3.6%. Aside from 2013 and 2014, the median price of an apartment in Brookvale SA2 region has been fairly consistent with the Warringah LGA median over the eight year period to 2014. However, over the same period, the median value of an apartment in Warringah increased at a faster rate (average annual growth of 5.1%), from \$419,500 to \$618,500.

Figure 12 Median Value - Detached Dwellings, Brookvale Vs Warringah (2006 – 2014)

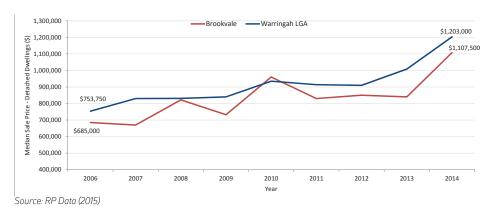
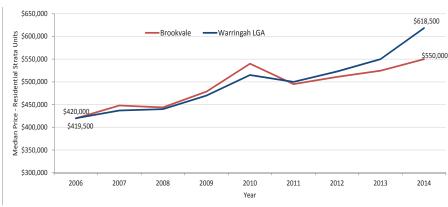


Figure 13 Median Value – Residential Strata Unit, Brookvale Vs Warringah (2006 – 2014)



Source: RP Data (2015)



#### **NEW RESIDENTIAL ACTIVITY**

Between 2006 and 2014, there were 644 residential building approvals in the Brookvale SA2 region. Flats, units and apartments have dominated building approvals (403), followed by houses (216) and semi-detached dwellings (25). Notably, financial 2012/13 and 2013/14 evidenced the greatest number of residential approvals; 113 and 184, respectively.

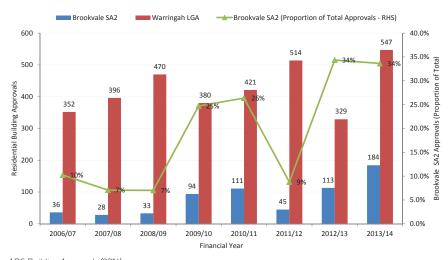
Between 2006 and 2014, new residential building approvals (separate houses, semi-detached, flats, unit and/or apartment) in the Brookvale SA2 region have averaged approximately 12% of total approvals in the Warringah LGA. Notably, in financial year 2013 and 2014, residential approvals in the Brookvale precinct comprised 34% of total approvals in the LGA.

Figure 14 New Residential Building Approvals, Brookvale SA2 region (2006 – 2014)



Source: ABS Building Approvals (2014)

Figure 15 New Residential Building Approvals, Brookvale Vs Warringah (2006 – 2014



Source: ABS Building Approvals (2014)

# SUMMARY OF POPULATION, HOUSEHOLD AND MARKET OVERVIEW

Key take-outs from the residential demographic overview presented in this chapter are outlined below:

- + As at 2014, the population of the Brookvale SA2 region is 21,721 persons;
- Population growth in the Brookvale SA2 region has been solid, expanding at an average annual rate of 353 persons (1.8%).
   Average annual population growth in the Warringah LGA has been 1.3%:
- + Utilising more specific Brookvale TZ data, the population of Brookvale in 2011 was 2,759 persons. Brookvale TZ project predicted the Brookvale population to increase to 4,420 by 2031 (2.4% growth per annum).
- + Couple families with children dominate the Brookvale SA2 region (30% of households). However, there are fewer couple families with children than the Warringah LGA (37% of total households), and there are a greater proportion of lone person households in the Brookvale SA2 region (25% vs 22%);
- + Residential growth in the SA2 region has accounted for just 1.5% of total growth in the LGA;
- + As at 2011, the average household size in Brookvale SA2 region (2.5 persons per household) is smaller (albeit minor) than the Warringah LGA (2.7 persons per household):
- Flats, units and apartments are the dominant dwelling typology in the Brookvale SA2 region accounting for 48% of housing stock (as at 2011) which is relatively high when compared with the Warringah LGA (33% of housing stock);
- + The median value of a separate house and apartment in the Brookvale SA2 region is approximately \$1,107,500 and \$550,000 (RP Data, 2014):
- New residential activity has been dominated by flats, units and apartments;
- In 2013 and 2014, the SA2 region accounted for 34% of total residential (separate houses, semi-detached, flats, unit and/or apartments) approvals in the Warringah LGA;

## 2.3.2 Employment and Business Overview



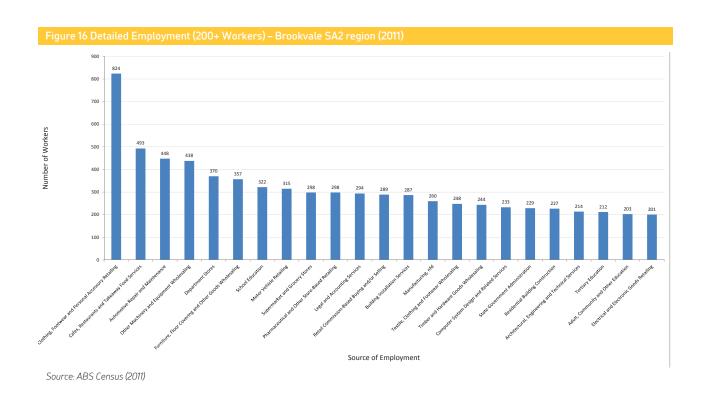
This section identifies key characteristics of Brookvale's employment base and considers those employment trends that are likely to have implications for future planning within the precinct.

#### **EMPLOYMENT IN BROOKVALE SA2**

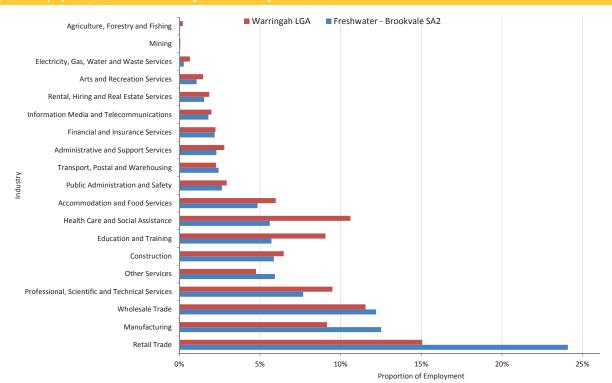
As at 2011, there were 14.676 jobs in the Brookvale SA2 region, comprising 31.2% of total employment in the Warringah LGA. The three largest employing industries in the Brookvale SA2 region are: Retail Trade (3.535 jobs); Manufacturing (1.835 jobs); and the Wholesale Trade (1.790 jobs).

These three industries account for approximately 49% of total employment in the Brookvale SA2 region. At a more detailed level, jobs in 'clothing, footwear and accessories' prove the dominant source of employment in the Brookvale SA2 region (824 jobs). This is followed by employment in 'cafés, restaurants and takeaway food services' (493 jobs) and 'automotive, repairs and maintenance' (448 jobs).

Table 3 Employment in the Brookvale SA2 Region (2011)			
Industry	Workers	Comp	osition
Retail Trade	3,535	24.1%	
Manufacturing	1,835	12.5%	48.8%
Wholesale Trade	1,790	12.2%	-
Professional, Scientific and Technical Services	1,127	7.7%	
Other Services	869	5.9%	
Construction	861	5.9%	
Education and Training	838	5.7%	-
Health Care and Social Assistance	822	5.6%	
Accommodation and Food Services	712	4.9%	45.2%
Public Administration and Safety	387	2.6%	
Transport, Postal & Warehousing	357	2.4%	-
Administrative & Support Services	337	2.3%	
Financial and Insurance Services	321	2.2%	-
Information Media &Telecom	264	1.8%	
Rental, Hiring & Real Estate	226	1.5%	_
Inadequately described	179	1.2%	-
Arts and Recreation Services	157	1.2%	6.0%
Electricity, Gas, Water & Waste	40	0.3%	-
Mining	8	0.1%	-
Agriculture, Forestry and Fishing	6	0.0%	-
Total	14,676	100%	100%









# EMPLOYMENT IN COMPARISON TO WARRINGAH

With regard for the wider LGA, the Brookvale precinct accounts for 31.2% of total employment in the Warringah LGA. The Brookvale SA2 region encompasses:

- + 49.9% of total Retail employment in the LGA;
- + 42.6% of total Manufacturing employment in the LGA;
- ullet 38.8% of total Other Services employment in the LGA; and
- + 33.4% of total Transport, Postal and Warehousing employment in the LGA.

Relative to Warringah LGA, Brookvale SA2 region has a higher jobs representation in: Retail Trade, Manufacturing, and Wholesale Trade.

Conversely, the Brookvale SA2 region has a lower representation in: Health Care & Social Assistance, Professional Scientific and Technical Services, and Education and Training.

Table 4 Employment by Industry, Brookvale SA	Table 4 Employment by Industry, Brookvale SA2 region as a Proportion of Warringah LGA (2011)				
Industry	Workers in the Brookvale SA2	Proportion of Workers in the Brookvale SA2	Workers in the Warringah LGA	Proportion of LGA	
Retail Trade	3,535	24.1%	7,089	49.9%	
Manufacturing	1,835	12.5%	4,310	42.6%	
Other Services	869	5.9%	2,238	38.8%	
Transport, Postal and Warehousing	357	2.4%	1,070	33.4%	
Wholesale Trade	1,790	12.2%	5,433	32.9%	
Financial and Insurance Services	321	2.2%	1,052	30.5%	
Construction	861	5.9%	3,046	28.3%	
Information Media and Telecommunications	264	1.8%	937	28.2%	
Inadequately described	179	1.2%	639	28.0%	
Public Administration and Safety	387	2.6%	1,382	28.0%	
Mining	8	0.1%	30	26.7%	
Rental, Hiring and Real Estate Services	226	1.5%	874	25.9%	
Administrative and Support Services	337	2.3%	1,311	25.7%	
Accommodation and Food Services	712	4.9%	2,814	25.3%	
Professional, Scientific and Technical Services	1,127	7.7%	4,467	25.2%	
Arts and Recreation Services	157	1.1%	693	22.7%	
Education and Training	838	5.7%	4,266	19.6%	
Not stated	5	0.0%	26	19.2%	
Health Care and Social Assistance	822	5.6%	4,992	16.5%	
Electricity, Gas, Water and Waste Services	40	0.3%	307	13.0%	
Agriculture, Forestry and Fishing	6	0.04%	99	6.1%	
Total	14,676	100.0%	47,075	31.2%	

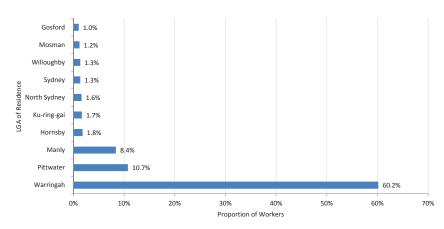
#### **RESIDENTIAL ORIGIN**

As at 2011 (ABS Census), the majority of persons that work in the Brookvale SA2 region live in the Warringah LGA (60.2%), followed by the Pittwater LGA (10.7%) and the Manly LGA (8.4%).

# METHOD OF TRAVEL TO WORK (WORKERS OF THE BROOKVALE SA2 REGION)

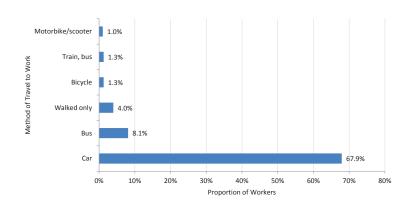
Notably, of persons that work in the Brookvale SA2 region, almost 70% travel to work by car or motorbike (either as a passenger or driver). At the time of the 2011 Census, only 8.1% of people utilised bus services to travel to work.

Figure 18 LGA of Residence, Workers of the Brookvale SA2 region (2011)



Source: ABS Census (2011)

Figure 19 Method of Travel to Work, Workers of the Brookvale SA2 region (2011





#### **WORKER RESIDENT PROFILE**

As at 2011, there were approximately 10,795 working residents living in the Brookvale SA2 region. Consistent with the resident worker profile of the Warringah LGA, the dominant industries of employment are:

- + Professional Scientific and Technical Services (13.3%);
- + Health Care and Social Assistance (9.6%); and
- + Retail Trade (8.6%).

### Table 5 Worker Resident Profile by Industry, Brookvale SA2

Industry of Employment	Workers	Proportion
Professional, Scientific & Technical	1,434	13.3%
Health Care and Social Assistance	1,034	9.6%
Retail Trade	928	8.6%
Construction	897	8.3%
Financial and Insurance Services	831	7.7%
Education and Training	795	7.4%
Wholesale Trade	701	6.5%
Manufacturing	647	6.0%
Accommodation & Food Services	575	5.3%
Public Administration and Safety	535	5.0%
Information Media & Telecom	439	4.1%
Administrative & Support Services	415	3.8%
Other Services	383	3.5%
Transport, Postal & Warehousing	318	2.9%
Rental, Hiring & Real Estate	271	2.5%
Arts and Recreation Services	201	1.9%
Inadequately described	193	1.8%
Not stated	93	0.9%
Electricity, Gas, Water & Waste	62	0.6%
Mining	23	0.2%
Agriculture, Forestry and Fishing	20	0.2%
Total	10,795	100.0%

Source: ABS Census (2011)

# COMPARISON OF LOCAL WORKER SKILL SETS TO LOCAL JOBS

In the following table we compare the number of local jobs to worker residents across the various employment sectors. Our comparison identifies those employment sectors where there are less (or more) local jobs than local workers from that sector. We note that the identified discrepancy does not necessarily refer to a weakness of employment conditions. The table demonstrates the source of jobs that impacts the LGA's employment containment ratio.

Not surprisingly, there are a greater number of retail jobs in the precinct, than local residents that work in the retail sector (given the presence of the Warringah Mall). There also appears to be more local residents that work in Financial and Insurance Services, Professional, Scientific and Technical Services and Health Care and Social Assistance than local jobs within these industries.

### Table 6 Working Residents vs Jobs in the Brookvale SA2 region (2011)

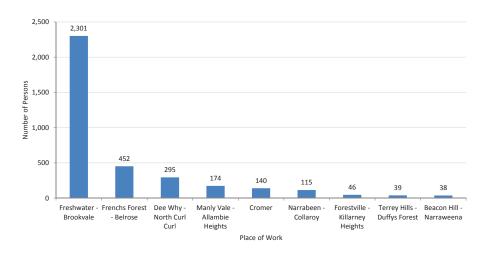
Industry of Employment	Residents	Jobs	Difference
Retail Trade	928	3,535	2,607
Manufacturing	647	1,835	1,188
Wholesale Trade	701	1,790	1,089
Other Services	383	869	486
Accommodation & Food Services	575	712	137
Education and Training	795	838	43
Transport, Postal & Warehousing	318	357	39
Inadequately described	193	179	-14
Agriculture, Forestry and Fishing	20	6	-14
Mining	23	8	-15
Electricity, Gas, Water &Waste	62	40	-22
Construction	897	861	-36
Arts and Recreation Services	201	157	-44
Rental, Hiring & Real Estate	271	226	-45
Administrative & Support Services	415	337	-78
Not stated	93	5	-88
Public Administration and Safety	535	387	-148
Information Media and Telecom	439	264	-175
Health Care and Social Assistance	1,034	822	-212
Professional, Scientific & Technical	1,434	1,127	-307
Financial and Insurance Services	831	321	-510
Total	10795	14676	3881

#### **WORKPLACE DESTINATIONS**

Of Brookvale SA2 region working residents that work within the Warringah LGA (3.600 persons), 63.9% work in the Brookvale SA2 region, followed by Frenchs Forest (452 persons) and Dee Why (295 persons).

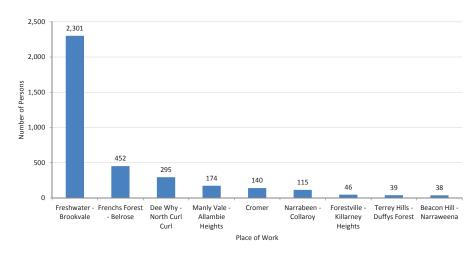
The remaining 7.195 Brookvale SA2 working residents work outside of the Warringah LGA. Aside from the Warringah LGA, City of Sydney is the dominant place of work (2,114 local working residents), followed by Manly LGA (876 persons) and North Sydney (630 persons), as demonstrated below.

Figure 20 Workplace of Local Residents who work in the Warringah LGA (2011)



Source: ABS Census (2011)

Figure 21 Key Workplace Destinations, Brookvale SA2 region Working Residents (2011)



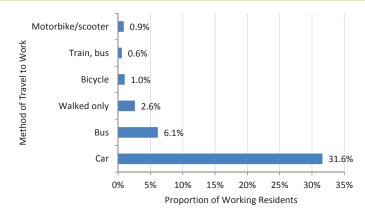


# METHOD OF TRAVEL TO WORK (RESIDENTS OF THE BROOKVALE SA2 REGION)

Overall, car and motorcycle utilisation is the dominant form of travel to work amongst residents of the Brookvale SA2 region (32.5% of working residents), followed by bus patronage (6.1%) and walking (2.6%).

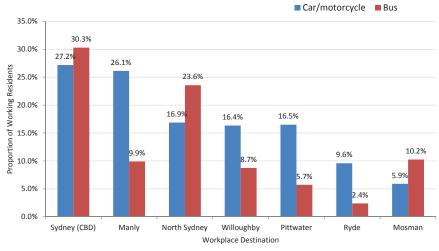
However, method of travel to work varies with the destination. Of working residents that travel to the CBD to work, 30.3% utilise bus services, and 27.2% use a car or motorcycle. Contrastingly, car and motorcycle utilisation represent a considerably more popular method of travel to the Manly LGA, relative to bus usage, as demonstrated below.

Figure 22 Method of Travel to Work, Working Residents of the Brookvale SA2 region (2011)



Source: ABS Census (2011)

Figure 23 Method of Travel to Key Workplace Destinations, Working Residents of the Brookvale SA2 Region (2011)



#### NUMBER OF BUSINESSES

As at 2014, there were 3,786 businesses operating in the Brookvale SA2 region with 46% characterised as employing and 54% as non-employing.

The Brookvale SA2 region is an important employment incubator for small-medium sized enterprises (SMEs). Businesses with 1 to 20 employees (which typically occupy a floorspace of less than 2,000m2) account for about 94.8% of occupied floorspace within the precinct. Contrastingly, around 9 businesses employed more than 200 workers.

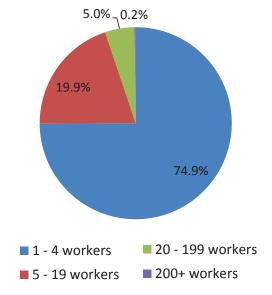
The majority of employing businesses in the Brookvale SA2 region are within the Professional, Scientific and Technical Services industry (17.8%), followed by Construction related businesses (14.4%) and the Manufacturing industry (11.2%).

Table 7 Number of Businesses, Brookvale SA2 Region (2014)

Business Type	No. of Businesses	Proportion
Non employing	2,054	54.3%
1-4 workers	1,154	30.5%
5-19 workers	444	11.7%
20-199 workers	125	3.3%
200+ workers	9	0.2%
Total businesses	3,786	100%

Source: ABS Census (2011)

Figure 24 Employing Businesses – Brookvale SA2 region (2014)



Source: ABS Count of Businesses (2014)

#### **BUSINESS GROWTH**

Over the four year period to 2014, the number of employing businesses in the Brookvale SA2 region expanded by 45. Businesses in the Accommodation and Food Services industry proved the most dominant source of growth (14 additional employing businesses), followed by the IT industry (11 employing businesses) and the Retail Trade (9 additional employing businesses).

Notably, businesses in the Manufacturing, Wholesale Trade and Public Administration industries experienced a decline of 12, 10 and 8 employing businesses, respectively.

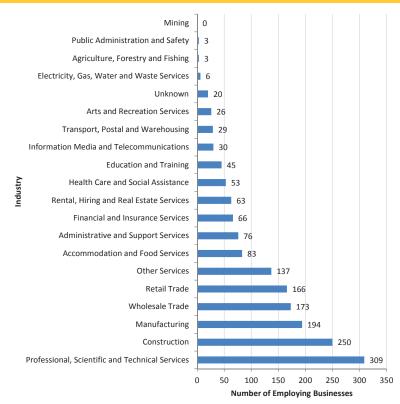
Business Growth in the Brookvale SA2 region is consistent with the trend experienced by the broader Warringah LGA precinct. Over the same period, employing businesses expanded by 88 in the LGA, underpinned by growth in:

- + Construction (78 businesses);
- + Retail Trade (18 businesses):
- + Transport Postal and Warehousing (12 businesses); and
- + Administrative and Support Services (11 businesses).

Interestingly, business growth in Accommodation and Food Services as well as Arts and Recreation Services has been more pronounced in the Brookvale SA2 region, relative to the Warringah LGA. Conversely, there has been little change in the number of businesses in the Health Care and Social Assistance industry, compared with the Warringah LGA.

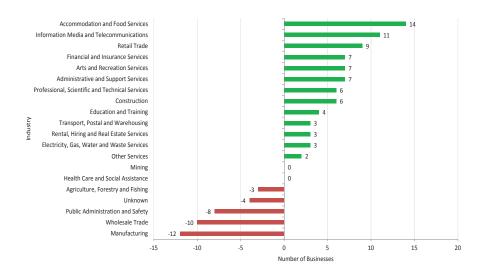


Figure 25 Business Profile (Employing Businesses), Brookvale SA2 region (2014)



Source: ABS Count of Australian Businesses, including entries and exits (2014)

Figure 26 Change in the Number of Businesses – Brookvale SA2 region (2011-2014)



Source: ABS Count of Australian Businesses, including entries and exits (2014)

Table 8 Business Change, Brookvale SA2 region and Warringah LGA (2011 - 2014)

Industry	Freshwater - Brookvale SA2	Warringah LGA
Manufacturing	-12	-23
Wholesale Trade	-10	-39
Public Administration and Safety	-8	-11
Unknown	-8	36
Agriculture, Forestry and Fishing	-3	7
Health Care and Social Assistance	0	5
Mining	0	3
Other Services	2	-7
Electricity, Gas, Water & Waste Services	3	-1
Rental, Hiring and Real Estate Services	3	-8
Transport, Postal and Warehousing	3	12
Education and Training	4	9
Construction	6	78
Professional, Scientific & Technical	6	-6
Administrative and Support Services	7	11
Arts and Recreation Services	7	6
Financial and Insurance Services	7	-10
Retail Trade	9	18
Information Media and Telecom	11	-2
Accommodation and Food Services	14	10
Total	15	88

Source: ABS Count of Australian Businesses, including entries and exits (2014)

A similar picture occurred within the industrial and/or warehouse related office vacancies which were consistent with the commercial vacancies with small floorspace ranging between 12m² to 350m², made up of older stock making up 65% of the total vacancies surveyed. Vacancies for standard industrial and/or warehouse spaces equated to a total of 30,972m² across only 25 sites within the SA2 region.

Table 9 Commercial Vacancies in Brookvale					
Business Type Commercial	No. of Vacancies	Area m²	Proportion vacancies	Proportion area	
0m² - 100m²	36	2,277	54%	15%	
101m <sup>2</sup> - 250m <sup>2</sup>	14	2,040	21%	13%	
251m² - 500m²	5	1,827	7%	12%	
501m <sup>2</sup> - 1000m <sup>2</sup>	10	6,704	15%	44%	
1001m <sup>2</sup>	2	2,385	3%	16%	
Total	67	15,233	100%	100%	

Source: MacroPlan site reconnaissance and Realestate.com.au (20/09/2015)

Table 10 Industrial Vacancies in Brookvale					
Business Type Commercial	No. of Vacancies	Area m²	Proportion vacancies	Proportion area	
0m² - 100m²	36	2,277	54%	15%	
101m <sup>2</sup> - 250m <sup>2</sup>	14	2,040	21%	13%	
251m² - 500m²	5	1,827	7%	12%	
501m <sup>2</sup> - 1000m <sup>2</sup>	10	6,704	15%	44%	
1001m <sup>2</sup>	2	2,385	3%	16%	
Total	67	15,233	100%	100%	

Source: MacroPlan site reconnaissance and Realestate.com.au (20/09/2015)

#### **VACANCIES**

To determine the quantum of industrial and commercial vacancies, reconnaissance was undertaken including site inspection and a review of Realestate.com.au. It revealed that the number of space available for lease and/or sale in Brookvale is relatively small Notably, a large proportion of the commercial vacancies are small office floorspace ranging between 12m² to 250m², comprising older stock. Newer stock was also identified with majority located in recently constructed developments at 12 and 18-22 Dale Street and 97 Old Pittwater Road.

Table 11 Industrial Vacancies in Brookvale					
Туре	Vacant	Brookvale m²	Proportion of total		
Commercial	15,233	1002406	2%		
Industrial	36,450		4%		

Source: MacroPlan site reconnaissance and Realestate.com.au (20/09/2015) SGS - Warringah Employment Study April 2013 (Brookvale m²)



# COMMERCIAL AND INDUSTRIAL BUILDING APPROVALS

Retail and Wholesale Trade Building Approvals have dominated employment generating approvals in the Brookvale SA2 region with \$53,259 worth of approvals generated between 2006 and 2015. Investment in office buildings has been the next greatest source of approvals (\$17,184), followed by Warehouses (\$15,330).

As a proportion of total building approvals in the Warringah LGA (2006 – 2015), Brookvale SA2 region appears to be a dominant precinct for Factories and other secondary production buildings (68.3% of total approvals in the LGA) and Warehouses (39.1% of total approvals in the LGA). Of Note; 4,047m² of industrial and self-storage floorspace was added to the precinct in 2015 at 97 Old Pittwater Road.

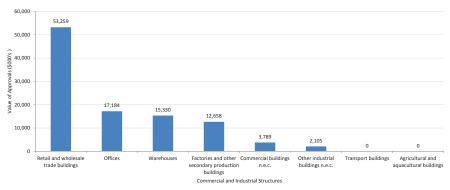
Contrastingly, offices and other commercial building approvals have accounted for just 20.2% of office approvals and 29.7% of commercial building approvals in the LGA over the period. This provides an indication that the bulk of office investment in the LGA has been elsewhere (i.e. Frenchs Forest).

Table 12 Commercial Office Building Approvals, Warringah LGA (2006-2015)

Precinct	Office Building Approvals (\$000's)	Proportion
Frenchs Forest - Belrose	43,167	50.7%
Freshwater - Brookvale	17,184	20.2%
Manly Vale - Allambie Heights	7,900	9.3%
Narrabeen - Collaroy	7,036	8.3%
Dee Why - North Curl Curl	3,541	4.2%
Terrey Hills - Duffys Forest	2,510	2.9%
Cromer	2,248	2.6%
Beacon Hill - Narraweena	789	0.9%
Forestville - Killarney Heights	727	0.9%
Total	85,102	100.0%

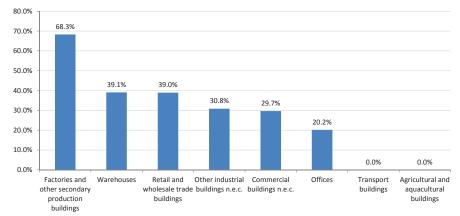
Source: ABS Building Approvals (2015)

Figure 27 Commercial and Industrial Building Approvals (\$), Brookvale SA2 region (2006-2015)



Source: ABS Building Approvals (2015)

Figure 28 Commercial and Industrial Building Approvals as a proportion of the Warringah LGA Total (2006-2015)



Source: ABS Building Approvals (2015)

#### **CONSTRUCTION ACTIVITY**

Major Development Assessment information (greater than \$3 million), provided by the Warringah Council has revealed that the majority of development over the four year period to 2015 has encompassed residential or mixed-use activities (i.e. residential alongside employment uses). Eleven of the eighteen major development identified comprise residential uses. Only three significant developments encompassed industrial and/or commercial uses.

In terms of location, significant development activity has occurred either along Pittwater Road, or to the west of Pittwater Road.

Overall:

- + Residential development has occurred along Shackel Avenue and Roger Street;
- + Industrial and warehousing development has primarily occurred along Old Pittwater Road.

Significantly, over the four year period to 2015, no significant development projects have occurred to the east of Pittwater Road.

Figure 29 Development Applications greater than \$3 million, Brookvale

726 Pittwater Road	Brookvale	Community	DA2011/0544	Approved -11 October 2011
666 Pittwater Road	Brookvale	Mixed-Use	DA2011/0605	Refused - 31 August 2011
511-513 Pittwater Road	Brookvale	Mixed-Use	DA2011/0890	Consent Surrended in 2014
10-12 Dale Street	Brookvale	Medical Centre	DA2011/0892	Approved L&E Court – 18 April 2012
788 Pittwater Road, 5-9 Carter Road and 238 Harbord Road	Brookvale	Auto-Motive Premises	DA2012/0168	Approved - 2 July 2012
26 & 28 Shackel Ave Brookvale and 35 Pine Ave Narraweena	Brookvale	Apartments	DA2012/0445	Approved - 11 July 2012
12, 14 & 16 Shackel Ave	Brookvale	Apartments	DA2012/0824	Approved - 19 October 2012
18 & 20 Shackel Ave	Brookvale	Apartments	DA2012/0830	Approved - 19 October 2012
138-140 Old Pittwater Road	Brookvale	Industrial/Warehouse	DA2012/1377	Approved L&E Court - 4 October 2013
15, 17 & 19 Shackel Ave	Brookvale	Apartments	DA2013/0500	Approved 14 August 2013
22 Shackel Ave	Brookvale	Apartments	DA2013/0925	Approved 3 December 2013
12 Roger Street	Brookvale	Mixed-Use	DA2013/1010	Approved 2 December 2013
11 & 13 Shackel Ave and 22 & 22a Victor Road	Brookvale	Apartments	DA2013/1164	Approved 30 December 2013
37-43 Federal Parade	Brookvale	Education	DA2013/1336	Approved 19 June 2014
511-513 Pittwater Road	Brookvale	Mixed-Use	DA2014/0944	JRPP Approval – 21 May 2015
97 Old Pittwater Road	Brookvale	Commercial/Warehouse	DA2014/1360	Approved 28 May 2015
20 Roger Street	Brookvale	Mixed-Use	DA2015/0301	Approved 8 July 2015
16 Victor Road	Brookvale	Aged-Care	DA2015/0358	Not yet determined

Source: The Warringah Council, Hames Sharley (2015)

Figure30 Development Applications greater than \$3 million, Brookvale



Source: Macro Plan Dimasi (2015)



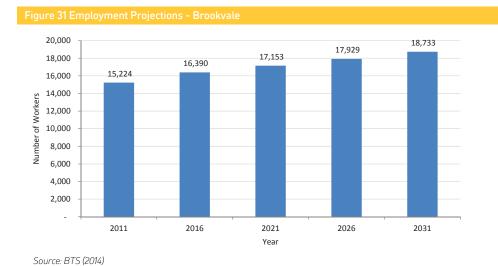
# BTS EMPLOYMENT PROJECTIONS - BROOKVALE

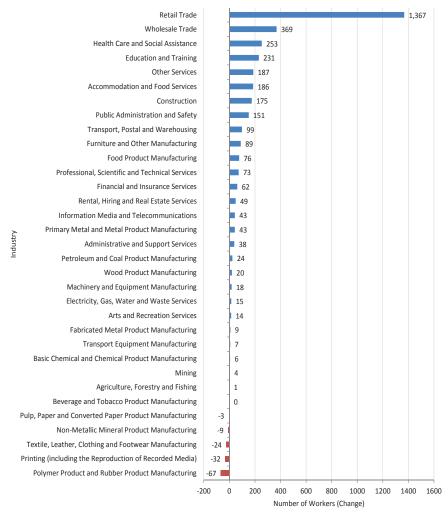
The Bureau of Transport Statistics has released employment projections for travel zone 2143, 2144 and 2145. Overall, the number of workers in the Brookvale TZ area is expected to increase from 15,224 in 2011, to 16,390 in 2016 and to 18,733 in 2031. This equates to an annual average increase of 1.0% or approximately 175 persons.

In particular, BTS project growth in:

- + The Retail Trade (1,367 persons);
- + The Wholesale Trade (369 persons);
- + Health Care and Social Assistance (253 persons); and
- + Education and Training.

Notably, Manufacturing related uses are expected to decline over the period i.e. polymer manufacturing and textile, clothing and footwear manufacturing, as demonstrated below.





Source: BTS (2014)



## SUMMARY OF EMPLOYMENT AND BUSINESS OVERVIEW

Workers of the Brookvale SA2 Region

- + As at 2011, there were 14,676 jobs in the Brookvale SA2 region;
- + The three main employing industries in the Brookvale SA2 region are the Retail Trade, Manufacturing and Wholesale Trade, accounting for 50% of total employment;
- At a more specific level, jobs in clothing, footwear and accessories provided the dominant source of employment in the Brookvale SA2 region (most occurring at the Warringah Mall), followed by employment in food services and automotive repairs and maintenance;
- The Brookvale SA2 region accounts for approximately 30% of total employment in the Warringah LGA;
- + The majority of persons that work in the Brookvale SA2 region, live in the Warringah LGA (60% of workers). The next prominent LGA of residence is Pittwater and then Manly:

Working Residents of the Brookvale SA2 Region

- + As at 2011, there were approximately 10,795 working residents living in the Brookvale SA2 region;
- + Working residents primarily work in Professional Services. Health Care and Social Assistance and the Retail Trade;
- As at 2011, 81% of working residents travelled outside of the LGA for work with the City of Sydney (i.e. Sydney CBD) accounting for the bulk of employment, followed by Manly and North Sydney;
- + Automobile utilisation represents the most dominant source of travel to work amongst working residents (32.5%), with only 6.1% of residents utilising bus services;

Businesses in the Brookvale SA2 Region

- + As at 2014, there were 3,786 employing and non-employing businesses in the Brookvale SA2 region;
- + Businesses with 1-20 employees account for almost 95% of all employing businesses;
- + There are only nine businesses with more than 200 workers e.g. Myer at Warringah Mall and the Brookvale Bus Depot;
- The majority of employing businesses are within Professional Scientific and Technical Services, followed by Construction and Manufacturing;
- ◆ Between 2010 and 2014, the number of employing businesses expanded by 45, with dominant growth in Accommodation and Food Services, Arts and Recreation Services, the IT industry and the Retail Trade.
- + Businesses in Manufacturing, the Wholesale Trade and Public Administration declined by 12, 10 and 8 employing businesses over the same period.
- Retail trade building investment has dominated employment generating building approvals in the Brookvale SA2 region over the nine year period to 2015, followed by commercial office investment and Warehousing;
- As a proportion of the Warringah LGA total, the Brookvale SA2 region accounts for a high proportion of factory and warehousing approvals.
- There is approximately 12,000 to 13,000m<sup>2</sup> of vacant (and for lease) commercial floorspace in Brookvale SA2 region (2015);
- + There is approximately 30,000 to 35,000m of vacant (and for lease) industrial floorspace;
- + The Brookvale SA2 region precinct is expected to reach 18,733 jobs by 2031 an additional 175 job per year;
- + Jobs growth is expected to be most prominent in the Retail Trade and the Wholesale Trade.

### 2.3.3 Key Findings

The key findings from this analysis of the economic context can be summarised as below:

- Brookvale has a strong foundation and trend toward continued economic growth due to its diverse character and business make up, surrounding population, demographic and its central location. The inclusion of creative industries in industrial precincts are the focus of international growth benchmarking and this provides a direct catalyst and should be harnessed.
- Brookvale is the most mixed use Strategic Centre in metropolitan Sydney and has a significant retail core similar only to Macquarie Park. This provides a natural point of difference and competitive advantage for the centre to be reinforced.
- Brookvale is the transaction destination, or "one stop shop" for the region. The region draws on a strong general service demand for local retail, bulky goods, building supplies and automotive repairs. The structure plan is to support this diversity.
- New and larger industries and typologies, including creative and digital technologies, are essential for growth, but are currently limited by a car based environment.
- + Little competition and solid profit margins support redevelopment of existing lots and businesses. This is further reinforced by a relatively high rental yield for office space (6% to 7%) and large site areas which allow for demolition of older warehouses.
- Education is a strength of the centre. Correlation between new industries, talent and education can be strengthened to sustainably secure the centre's economic future.





# 2.4 Transport Context

This section provides an overview of the current transport context for Warringah and Brookvale. It details the existing travel patterns, describes road access in, out and through the Investigation Area, then outlines the existing public transport infrastructure. The Bureau of Travel Statistics (BTS) population and employment forecasts are provided as a framework against which future growth in the area may impact transport in the future.

This section provides an overview of the existing transport context at three scales:

- + Warringah LGA
- + Warringah LGA compared to the Strategic Centres of Brookvale, Dee Why and Frenchs Forest
- + Brookvale

This is followed by an overview of planned infrastructure developments in Warringah LGA that relate specifically to Brookvale as a Strategic Centre and a summary of key findings arising from the transport context analysis.

### 2.4.1 Warringah LGA



#### **HOUSEHOLD TRAVEL SURVEYS**

A review of daily trips patterns for Warringah LGA derived from the 2011/2012 Household Travel Surveys (HTS) revealed the following:

- + The largest numbers of trips undertaken in Warringah LGA (27%) are for social and recreational purposes. However, they are relatively short in distance (6.8km).
- + Commuter or work-related trips represent less than 21% of all daily trips. However, on average they are the longest trips undertaken in Warringah LGA.
- + Serve passenger accounts for up to 16% of all trips in the Warringah LGA, demonstrating the reliance on private vehicles to travel about Warringah LGA.
- + The lengths of commuter trips in Warringah LGA are on average shorter in length (12.7km) compared to the rest of Sydney (14.9km). This suggests some self-containment (i.e. locals are tending to work closer to home).
- + The average shopping trip in Warringah LGA is less than 4.2km in length. They represent 17% of all daily trips.
- + Private car trips, as a driver or passenger, are the dominating mode for all trips purposes (75%). The dominance of the private car is even higher for commuter trips (up to 83% for inbound trips).
- + 16% of all Warringah LGA trips were walk only. Yet walk trips only account for some 4-5% of commuter trips. This suggests that walking plays an important role for non-commute trips e.g. social/recreational, shopping, education).
- + The average length of walk trips is about 700m (just under 10 minutes duration) This is about half the average distance recorded in the rest of Sydney.
- + Warringah based residents commuting to work rely on bus transport more (15%) than external residents travelling into the Warringah LGA to work (7%). This demonstrates the importance of public transport to Warringah residents.

The findings of the HTS for Warringah LGA is summarised in the following tables.

Table 1 Purpose of Travel in Warringah LGA (HTS, 2011/2012)			
Purpose	LGA % Trips	LGA Avg Distance (km)	Greater Sydney Avg Distance (km)
Commute	13%	12.7	14.9
Work Related	8%	11.9	15.6
Education	7%	6.7	7.1
Shopping	17%	4.2	5.5
Personal Business	8%	6.3	7.1
Social Recreation	27%	6.8	8.3
Serve Passenger	16%	5.4	6.4
Other	3%	3.1	4.6

2011/12)			
Mode	LGA	LGA Avg Distance (km)	Greater Sydney Avg Distance (km)
Driver	53%	8.2	10.3
Passenger	22%	6.6	8.3
Train	1%	13.2	18.3
Bus	7%	8.5	6.8
Walk Only	16%	0.7	1.4

Waltingan LOA to Work			
Mode	Inbound Trips to Work	Outbound Trips to Work	
Driver	77%	69%	
Passenger	6%	5%	
Train	2%	2%	
Bus	7%	15%	
Walk Only	5%	4%	
Other	3%	5%	
Total Trips	50,123	71,908	

### 2.4 2 Warringah LGA, Brookvale, Dee Why and Frenchs Forest

#### SURROUNDING AREA

This section provides an outline of the existing conditions in the Warringah LGA and the three major activity precincts of: Brookvale, Dee Why and Frenchs Forest, for comparison.

#### **KEY ACTIVITY PRECINCTS NEARBY**

Dee Why, in conjunction with neighbouring Brookvale, is considered to be the main centre of the Northern Beaches region. The main street retail is mainly located along the eastern side of Pittwater Road, following into the side streets. Residential development in the area mostly consists of medium density dwellings.

Frenchs Forest has been identified as a health precinct and an area for a large employment growth. The NSW Government has invested \$400 million in the 2014/15 budget for road upgrades around the hospital to provide customers with a better travelling experience by car or bus. This work will be completed in time for the opening of the Northern Beaches Hospital (NBH) in 2018.

#### PROJECTED GROWTH

The projected population growth in the major activity centres and the Warringah LGA is shown in Figure 1, this has been taken from the 2012/2013 Household Travel Surveys (HTS). In 2011, the Warringah LGA had a total population of 148.423 people. Dee Why had 22,038, Frenchs Forest had 13,814 while Brookvale had 2,759.

The data suggests that Brookvale will increase constantly until 2021 but is expected to almost double to 5,275 by the year 2041. Population growth in Dee Why is expected to grow strongly to 2020, but not to increase thereafter. The population in Frenchs Forest is expected to grow at a constant rate till 2041 (increasing by 36 per cent). The Warringah LGA's population is also expected to grow at a constant rate to 192,557 people (30 per cent) by 2041.

#### **EMPLOYMENT GROWTH**

A similar comparison is done for the projected employment trends in these areas and is shown in Figure 2, this has also been taken from the 2012/2013 HTS. In 2011, the Warringah LGA had a total employment of 56,766 and a workforce of 80,661, Dee Why had 5,761 and 13,738 respectively, and Frenchs Forest had 9,597 and 7,218 respectively. While Brookvale had an employment of 15,224 and workforce of 1,619.

Brookvale is expected to have the lowest proportion in employment increase to 2041, at an additional 5,310 (35 per cent). Dee Why and the Warringah LGA are both expected to increase at roughly the same rate (42% and 41% respectively). Whereas, the employment in Frenchs Forest is expected to increase rapidly by 5,402 (56 per cent) by the year 2041.



Figure 1 Projected Population Growth

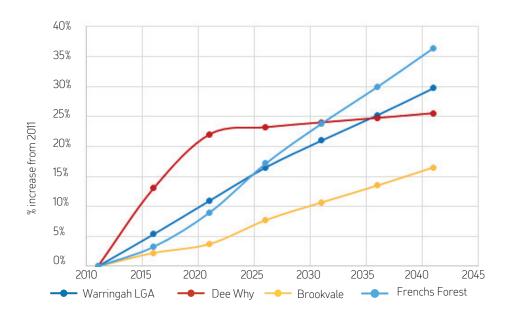
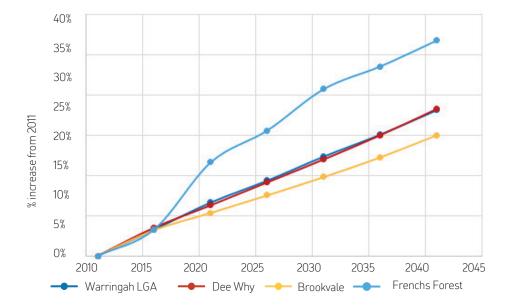


Figure 2 Projected Employment Growth



#### **JOURNEY TO WORK**

This section discusses the existing travel patterns in the two major activity areas.

#### PLACE OF WORK

Census data for the year 2011 is analysed for how people who work in these areas travel to work. A comparison of the journey to work (JTW) patterns amongst the two major activity precincts and the overall Warringah Precinct is shown in Figure 3.

Of the people working in these areas, the data shows that:

- + Brookvale and Dee Why major activity areas have a lower proportion of people who drive to work, compared to the Warringah precinct
- + Frenchs Forest has the highest proportion of private vehicle users
- + Dee Why has the highest proportion of people who walk to work (12 per cent)
- Brookvale has the highest proportion of people who take the bus to work (10 per cent)

#### PLACE OF RESIDENCE

Similarly, the census data for residents living in these areas is analysed for their travel methods to work. The findings are shown in Figure 4.

Of the employed people living in these areas, the data shows that:

- Dee Why has the lowest proportion of people who drive to work
- Frenchs Forest has the highest proportion of people who drive to work
- + Brookvale has the highest proportion of people who walk to work (10 per cent).
- Dee Why has the highest proportion of people who take the bus to work (10 per cent)

#### SUMMARY OF PROJECTED GROWTH

The existing conditions in the Warringah LGA and the three major activity precincts of Brookvale, Dee Why and Frenchs Forest have been assessed in terms of travel methods, population and employment growth.

Population growth in Brookvale is suggested to increase constantly until 2021 but is expected to almost double to 5,275 by the year 2041. In contrast, the employment Brookvale is expected to have the lowest proportion in employment increase, at 5,310 (35 per cent) additional employees by 2041. This shows that Brookvale would see a sharp increase in residential dwellings as opposed to commercial and retail spaces.

The Warringah Mall vicinity and Dee Why Town Centre have a higher usage of active and public transport. However, mode shifts from private vehicle usage, towards further usage of public transport would likely occur with the improvements in the bus network. The major activity areas are likely to benefit directly from such upgrades.

Frenchs Forest has the highest usage of private vehicle users when compared to the other precincts. Its employment growth is also expected to be the highest, this is likely due to the completion of the Northern Beaches Hospital.





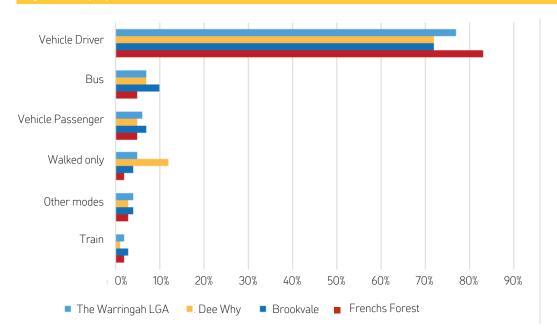
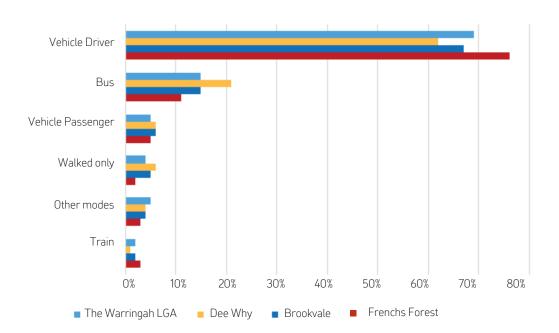


Figure 4 How people who live in these locations travel to work



#### **PUBLIC TRANSPORT**

A large network of buses service the Warringah Precinct, providing north-south access to the CBD, Chatswood and to the west.

In the AM peak one hour (7:30am-8:30am), around 30 buses run through the study area southbound along Pittwater Road, and around 10 buses run along Warringah Road (to the north of the study area boundary), westbound towards Frenchs Forest.

#### **ROAD NETWORK ACCESS**

Road access in, out and through the Warringah LGA is provided by just three major arterial roads, namely:

- + Mona Vale Road (east-west)
- + Warringah Road (east-west)
- + Pittwater Road/Condamine Street (north-south)

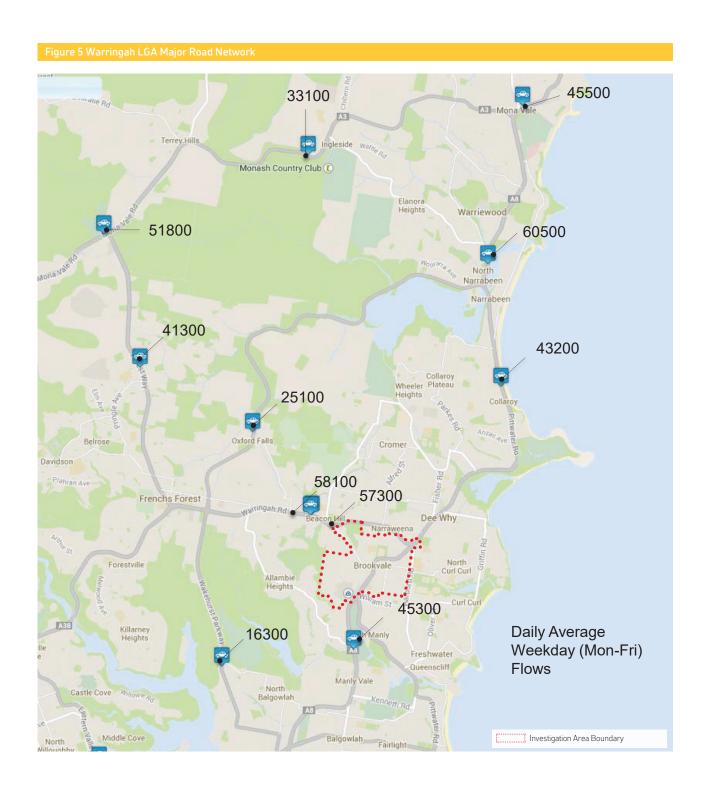
Compared to many other LGA's in Sydney. Warringah has very limited road and public transport network options. The capacity of these three road corridors is critical to the future accessibility of the LGA.

Traffic volumes on key roads within the Warringah Precinct are presented in Table 4 and Figure 5.

Table 4 2012 Average Daily Traffic Flows			
ID	Location	Weekday Average	Weekend Average
57025	Forest Way, near Ralston Ave	41,300	32,500
55036	Warringah Road, east of Daines Pde	57,300	44,400
55050	Warringah Road, west of Daines Pde	58,100	44,800
34029	Wakehurst Parkway, near Judith St	16,300	15,100
55052	Wakehurst Parkway, north of Oxford Falls Road	25,100	18,800
57011	Mona Vale Road, West of Forest Way	51,800	41,900
57024	Mona Vale Road, east of Kimbirki Road	33,100	26,500
55028	Pittwater Road, North Narrabeen	60,500	50,400
55049	Pittwater Road, Collaroy	43,200	37,600

Source: http://www.rms.nsw.gov.au/about/corporatepublications/statistics/traffic-volumes/map/index.html





### 2.4.3 Brookvale

### SYDNEY TRANSPORT MODEL

The Sydney Transport Model (STM) prepared by Transport for NSW, was used to gain an understanding of household trips in the Brookvale area. A total of 7.889 trips were recorded based on 2011 census data. According to the model, this number is estimated to increase to a total to 10.557 trips made a day by 2041.

Of the total trips in 2011, 22 per cent comprised of internal trips, within Brookvale. The most common purpose of travel was commuting to work while the next most common was found to be social and recreational purposes. This is shown in Figure 6.

Of the trips recorded, 82 per cent used private vehicles as a mode of transport. The next most common mode of transport was active transport. This shows an opportunity to encourage cycling and walking within Brookvale.

Figure 6 STM data 2011 Purpose of trips

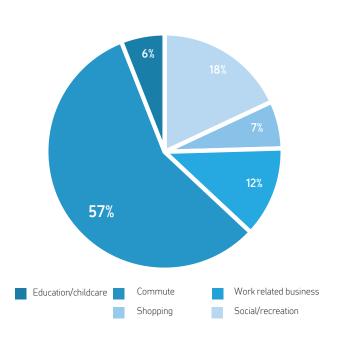
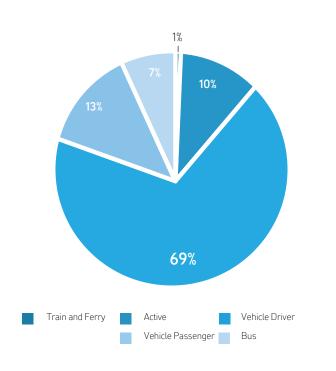


Figure 7 STM data 2011 Travel modes



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### **PLACE OF WORK**

Census data for the year 2011 has been analysed to see how people who work in Brookvale travel to work. The mode splits are shown in Figure 8. Private vehicle usage consists of 78 per cent of the mode share, making it the most common form of transport. Buses were the next most common mode at 11 per cent.

### **PLACE OF RESIDENCE**

Similarly, the census data for residents living in these areas is analysed for their travel methods to work, shown in Figure 9. There was a lower reliance on private vehicle usage amongst residents as compared to people working in Brookvale. Conversely, bus usage amongst residents were higher.

Figure 8 How people who work in Brookvale travel to work

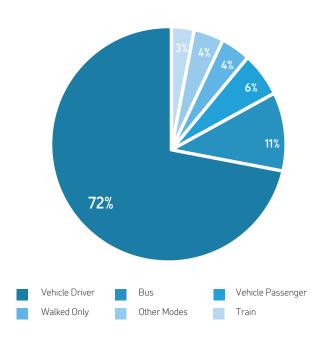
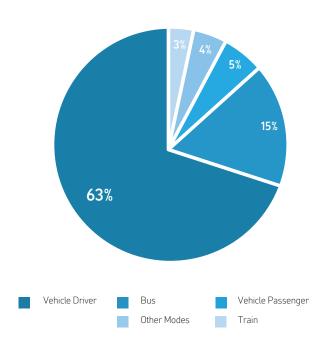


Figure 9 How people who live in Brookvale travel to work



### LOCAL ROAD NETWORK

The local roads within the study area provide a street pattern that largely responds to the topography of the area around the Mall in the west, and the industrial/residential land uses in the east.

The industrial precinct in the east allows for the circulation of vehicles through the precinct, and provides some east-west connections between Pittwater Road and Harbord Road.

To the west the topography changes, reducing connectivity and ease of vehicle circulation. Old Pittwater Road provides a loop through the industrial area behind the Mall for local traffic, however, through traffic is not greatly supported by the street network.

The northern third of the study area predominantly contains residential land uses and sits between the two major arterial roads of Warringah Road and Pittwater Road. Street circulation is limited with a number of cul-de-sacs breaking up through street running.

### **BUS NETWORK**

Key issues for bus operations along Pittwater Road in the Brookvale to Dee Why corridor have been identified in Northern Beaches BRT Feasibility Study Draft Report prepared by GHD for TfNSW in 2014. These include:

- + Insufficient bus stop capacity at north and southbound bus stops at Pittwater Road, adjacent to Warringah Mall
- Informal commuter car parking on local streets, particularly around Brookvale
- + Pedestrian movements at Pittwater Road/Condamine Street/William Street intersection can cause increase delays to traffic and bus movements
- + Traffic delays within Dee Why Town Centre

Opportunities to improve bus operations along Pittwater Road in the Brookvale to Dee Why corridor have been identified in the Draft Report by GHD and include:

- Providing a pedestrian bridge across Pittwater Road north of William Street to reduce bus and traffic delays at the Pittwater Road/Condamine Street/William Street intersection
- + Rationalising bus stops
- + Improving active transport facilities to and at bus stops
- + Investigating an off-street bus interchange at vacant land to the east of Pittwater Road adjacent to Warringah Mall
- Providing a major B-Line stop at Pittwater Road adjacent to Warringah Mall
- + Establishing indented bus stops at proposed B-Line stops
- Providing commuter car parking adjacent to Warringah Mall

Brookvale (Warringah Mall) was found to have a high potential for Transit Oriented Development (TOD), in the Draft Report prepared by GHD, with the potential for the Warringah Mall expansion and the change of land use on the east side of Pittwater Road and in the surrounding low density industrial and commercial buildings.



# BROOKVALE DEE WHY TRANSPORT MANAGEMENT AND ACCESSIBILITY STUDY (2012)

Travel demand is likely to restrict the amount of development that can be achieved in Brookvale, due to the limited capacity along Pittwater Road between Condamine Street and Old Pittwater Road and the poor east-west connectivity between West Brookvale and Harbord/Freshwater. Congestion along these corridors is as much a result of increasing through traffic in the corridor as from traffic generation associated with additional jobs in Brookvale and Dee Why.

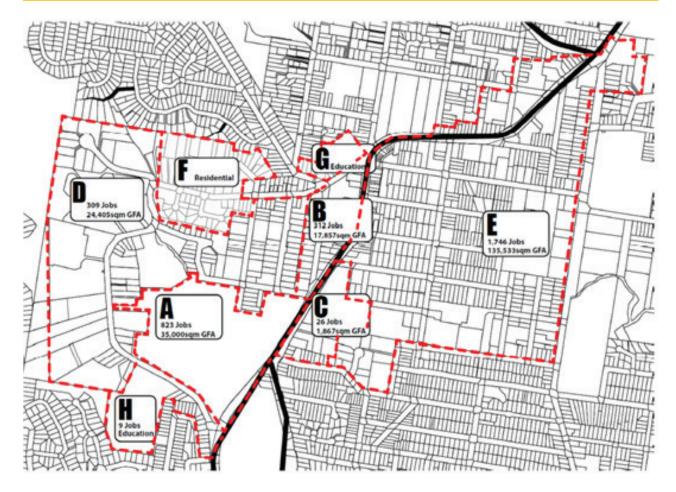
Based on rough sensitivity testing undertaken as a part of Brookvale Dee Why Transport Management and Accessibility Study (2012) undertaken by GHD, it is estimated that growth in jobs of some 3,000 to 3,500 jobs across Brookvale and Dee Why can be supported on the transport network at a manageable and serviceable Level of Service, before large-scale network upgrades are required.

Further to that, three land use scenarios have been considered in the TMAS, relating to the increases in development to 2036. A summary of the jobs assumptions for each of the scenarios tested as a part of this study is provided in Table 5.

Table 5 GHD TMAS, proposed additional jobs model test								
Area	Scenario 1	Scenario 2	Scenario 3					
Brookvale Industrial Area	2,292	2,292	2,292					
Additional Brookvale Sites	0	1,003	0					
Warringah Mall	823	823	823					
Dee Why	569	1,500	1,500					
Total	3,684	5,618	4,615					

The growth areas situated within Brookvale are shown in Figure 7.

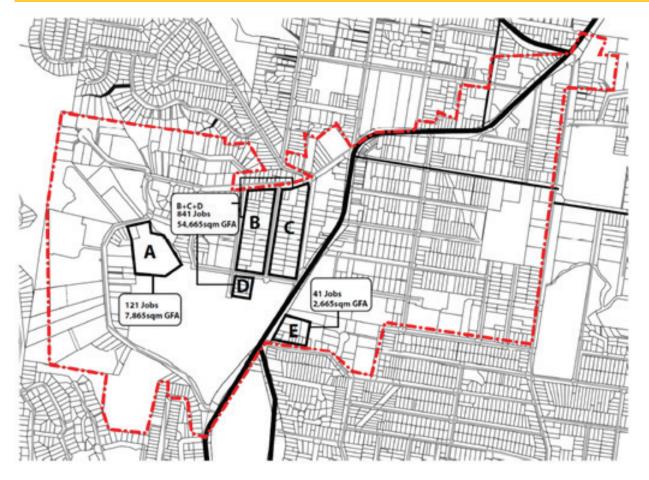
Figure 10 Predicted distribution of jobs in Brookvale



Further sensitivity analysis, Scenario 2, was carried out to measure the impact of some 1,003 additional jobs in Brookvale, resulting in a total of 5,618 jobs. The location of these additional jobs are shown in Figure 10.



Figure 11 Predicted distribution of additional jobs in Brookvale West



Based on GHD's modelling, it predicted the network to fail upon the addition of these 1,003 jobs in Brookvale. Scenario 3 (no addition of 1,003 jobs in Brookvale) was hence adopted in the review analysis.

### SUMMARY OF TMAS OUTCOMES

Large-scale network upgrades that are likely to be required to support the 5,000 new jobs target beyond the 2036 planning horizon, which could include grade separation at the intersection of Warringah Road and Pittwater Road, widening of Pittwater Road (by at least one lane in each direction) between Condamine Street and Lismore Avenue and widening of Old Pittwater Road between Beacon Hill Road and Pittwater Road. Further investigation of these large-scale measures will be required as growth in jobs reaches the 3,000 to 3,500 new jobs threshold identified as a part of the GHD study.

An integrated package of measures, encompassing infrastructure, service and policy responses will be required to reduce travel demand and deliver a working transportation network that will serve growth in Brookvale. The Brookvale Dee Why Transport Management and Accessibility Study recommended:

- + Increases in public transport services (buses) through Brookvale and Dee Why should be considered in the medium to long term. These services could potentially comprise in the order of 9 to 13 additional standard bus services to Brookvale and Dee Why in the morning and evening peak respectively. The number of new services could be reduced by increasing the fleet size to include a greater number of articulated buses.
- + The possible introduction of a Metro Bus service linking Brookvale and Dee Why with Chatswood via Warringah Road running at 10 minute headways in the peak periods should be considered as a means of catering for expected growth in travel demand to the west of Brookvale and Dee Why.
- + Warringah Bike Plan and Warringah PAMP to be implemented to help support and encourage a mode shift away from private vehicles and towards active transport, with both plans to be reviewed and updated on a regular basis to ensure that they continue to respond to changing trends in land use and travel behaviour.
- + A restricted parking policy, especially for on-street parking in currently constrained areas such as Brookvale East and West should be considered, with a view to restricted parking in the short to medium term and paid parking in the long term.

### PLANNING CONTEXT KEY FINDINGS

#### Issues:

- Accommodating growth: the GHD TMAS found that an additional 5,000 jobs in Brookvale and Dee Why generates more traffic than can be accommodated on the current transport network.
- Travel demand is likely to restrict the amount of development that can be achieved in Brookvale, due to the limited capacity along Pittwater Road between Condamine Street and Old Pittwater Road and the poor east-west connectivity between West Brookvale and Harbord/ Freshwater.
- Congestion along these corridors is as much a result of increasing through traffic in the corridor as from traffic generation associated with additional jobs in Brookvale and Dee Why.
- + There is currently very limited scope to fund and implement large scale road works through the study area to meet the forecast travel demand. Consultation with RMS and TfNSW at the time of the GHD Study confirmed that there are currently no plans to undertake extensive and large scale capacity enhancements within the study area.

### Opportunities:

- + The GHD TMAS found that an estimated growth in jobs of some 3,000 to 3,500 jobs across Brookvale and Dee Why can be supported on the transport network at a manageable and serviceable Level of Service by implementing a recommended package of strategies and infrastructure measures to 2036, before large-scale network upgrades are required.
- + Opportunity lies in reducing vehicle demand by increasing mode share to public and active transport modes.
- The transport enhancements identified in the Northern Beaches Transport Action Plan provides an opportunity to boost public transport mode share through Bus Rapid Transit and build key activity precincts into transit oriented nodes.
- + In addition to the BRT, Transport for NSW is also redesigning Sydney's bus network to meet customer needs.
- Council is supportive of sustainable transport initiatives, as shown by their Sustainable Transport Strategy, and opportunity exists to further improve walking and cycling infrastructure to continue to support the use of active transport.
- Lastly, opportunity exists to review the provision of car parking to also support the achievement of sustainable transport planning outcomes.

### 2.4.4 Planned Infrastructure Developments



This section reviews the planned and proposed transport infrastructure upgrades across the Warringah LGA that specifically relate to Brookvale. This includes major road improvements and a new public transport interchange around the Northern Beaches Hospital as well as the introduction of Bus Rapid Transit (BRT) along Pittwater Rd and associated public transport interchanges, commuter car parks and new bus lanes.

\$633 million is being invested over the next five years to connect the new Northern Beaches Hospital to the community and to start delivery of bus rapid transit. This will be supported by traffic and road improvements, commuter car parks, modern bus stops and more frequent public transport services. This investment will establish a modern transport system for the Northern Beaches.

The NSW Government are delivering projects that will connect key centres including Mona Vale, Dee Why, Brookvale and Frenchs Forest with employment, services and retail precincts like Manly, Northern Beaches Hospital, Macquarie Park, Chatswood and Sydney's CBD.



### NORTHERN BEACHES HOSPITAL AND ASSOCIATED CONNECTIVITY WORKS

The Northern Beaches Hospital (NBH) is a major investment in public health infrastructure on the Northern Beaches. There will be 488 hospital beds, including more public beds, supported by a large integrated emergency department, state-of-the-art intensive care and critical care units and modern inpatient mental health facility.

The new hospital will be nine storeys high, with room for future expansion on site. It will employ 1,300 staff, increasing the existing workforce by 400, plus 700 jobs will be created during construction. There will also be 1,400 car parking spaces for staff, patients and their families located on the western end of the site.

On 29 June 2015, Healthscope received the green light to start building Northern Beaches Hospital. Construction is now under way on site, with construction due to be completed in mid-2018, and open to the public in late 2018.

The NSW Government is investing \$400 million in major road improvements to reduce congestion and improve travel times around the Northern Beaches Hospital in Frenchs Forest and the surrounding precinct. This includes underpasses on Warringah Road at Forest Way and Wakehurst Parkway. This package of work will be undertaken before the new world class health facility opens in 2018.

The \$400 million package of road projects includes:

- + Underpasses on Warringah Road at Forest Way and Wakehurst Parkway
- + Widening and upgrades along Warringah Road
- + Widening of Allambie Road south of Warringah Road
- Investigating the connection of Aquatic Drive with Wakehurst Parkway
- Providing access to the Hospital via the intersection of Warringah Road and Hilmer Street
- + Upgrades and improvements to Frenchs Forest Road, Forest Way and Allambie Road.

### **B-LINE: NORTHERN BEACHES BRT**

In November 2015, the NSW Government unveiled the future of bus travel on the Northern Beaches with a fleet of double decker buses to run at least every 10 minutes during the day from new bus stops between Mona Vale and the CBD. It was announced that services on the new 27 kilometre BRT network called B-Line are expected to be up and running by late 2017.

The project will include:

- Nine modern B-Line stops at Mona Vale, Warriewood, Narrabeen, Collaroy, Dee Why, Brookvale, Manly Vale, Spit Junction (Mosman) and Neutral Bay with real-time information, seating, weather protection and improved facilities for customers;
- + Six new commuter car parks at Mona Vale, Warriewood, Narrabeen, Dee Why, Brookvale and Manly Vale providing about 900 spaces;
- + Brand new double decker buses with improved on-board capacity and comfort;
- + Road works including new bus lanes, bus bays, minor lane widening and other road improvements to support bus services; and
- + Improved pedestrian and bicycle links to connect customers with B-Line stops.

\$125 million is being invested to deliver kerbside Bus Rapid Transit (BRT) on the Northern Beaches from Mona Vale to Sydney CBD. Following completion of the road upgrades, the missing links of the existing AM and PM peak period bus lane network will be completed. This will see transit lanes converted to bus lanes.

\$67 million is also being invested in new commuter car parking at Narrabeen, Mona Vale, Warriewood and Dee Why. These commuter car parks will have the flexibility to provide parking for up to 800 more cars to connect with the BRT service. These commuter car parks will be within a five to ten minute drive of major residential catchments. The number of car parks can be increased as demand grows.

In addition, over the next five years, over \$11 million will be invested to provide better bus services that will start earlier and finish later during the week and on weekends – responding to where people need and want to go.

### **NORTHERN BEACHES TUNNEL**

\$5 million from Restart NSW has been committed to strategic and feasibility studies establishing a Northern Beaches tunnel as part of the Sydney Roads Renewal package. These studies will finalise the route, capacity and passenger numbers for a future Northern Beaches tunnel linking the Northern Beaches to the Warringah Freeway and south across the harbour.

Improvements will also occur along Pittwater Road, Spit Road and Military Road with adjustments to traffic signals, provision of off road bus bays, road alignment and implementation of right turn bays.

This includes extending the existing tidal flow system at Mosman further north to Parriwi Road as well as \$5 million from Restart NSW will be committed for strategic and feasibility providing additional traffic capacity through Cremorne by reconfiguring traffic lanes for better operation.

Variable message signs will be installed on Wakehurst Parkway in Frenchs Forest and Sydney Road in Balgowlah to provide drivers with real time information.

In parallel with planning for the Northern Beaches Hospital road upgrade work, options to reduce the impact of flooding on the Wakehurst Parkway are being investigated.

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### MONA VALE ROAD

Mona Vale Road currently experiences congestion as a result of the steep grades which reduces travel times, particularly for heavy vehicles. It provides access to the northern beaches and northern suburbs of Sydney.

In 2009, Roads and Maritime prepared a corridor strategy for the area from Mona Vale to Macquarie Park. The strategy identified short and long term priorities for Mona Vale Road, including the East and West upgrades.

The NSW Government is now proposing to upgrade Mona Vale Road from two lanes to four lanes between Terrey Hills and Mona Vale. The upgrades are being planned in stages and are aimed at improving safety and traffic efficiency. The projects include the following three stages:

- + Stage 1 Intersection improvement of Mona Vale Road with Ponderosa Parade and Samuel Street, Mona Vale. This work was completed in early 2015.
- + Stage 2 Upgrade of 3.2 kilometres of Mona Vale Road from two lanes to four lanes between Manor Road, Ingleside and Foley Street, Mona Vale.

+ Stage 3 – Upgrade of 3.2 kilometres of Mona Vale Road from two lanes to four lanes between McCarrs Creek Road, Terrey Hills and Powder Works Road, Ingleside. The preferred route was announced in August 2013. Roads and Maritime sought feedback on a preliminary concept design in October and November 2014.

Other work on Mona Vale Road has included work to improve safety on the approach to the Ponderosa Parade/Samuel Street roundabout which was completed in January 2014 and included:

- + New speed limit signs
- + Improved line markings
- + Improved signs on the steep descent
- + Improved warning signs

Figure 13 Mona Vale Road Upgrade Work

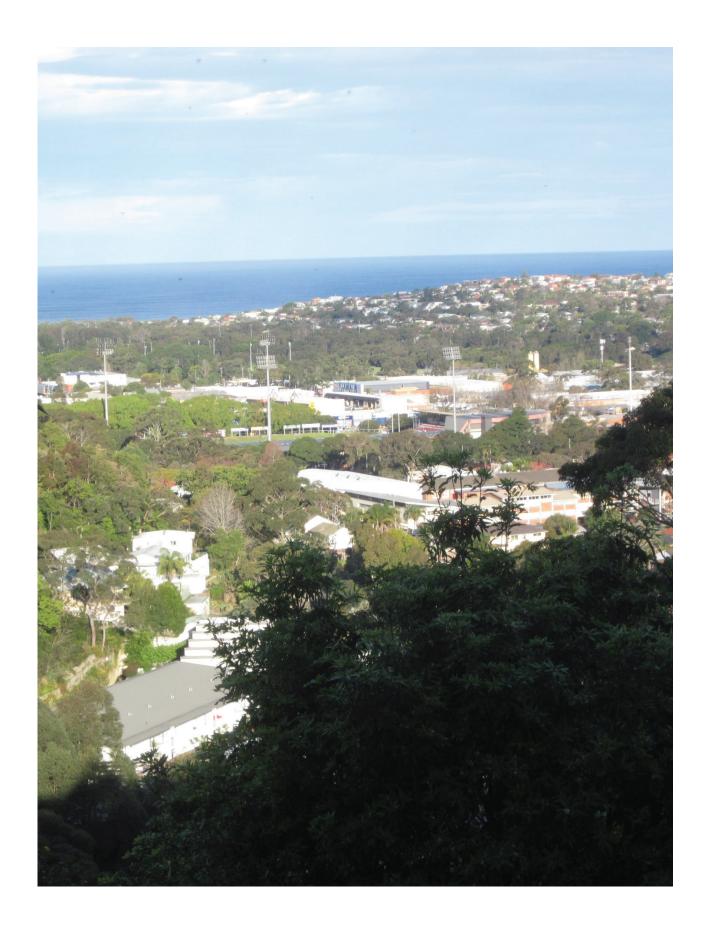


### 2.4.5 Key Findings

The key findings from this analysis of the transport context can be summarised as below:

- Travel demand is likely to restrict the amount of development that can be achieved in Brookvale, due to the limited capacity along Pittwater Road between Condamine Street and Old Pittwater Road and the poor east-west connectivity between West Brookvale and Harbord/Freshwater.
- Congestion along these corridors is as much a result of increasing through traffic in the corridor as from traffic generation associated with additional jobs in Brookvale and Dee Why. As a result, it is critical to think about the regional movement network associated with Brookvale.
- Brookvale is car based. A shift away from car dependency will increase the attractiveness of the centre to new and emerging businesses, residents and talent.
- Warringah Mall and Dee Why Town Centre have a higher usage of active and public transport than other centres in the region. These modes should continue to be encouraged and supported by increased connectivity.
- + The new B-Line Bus Rapid Transit will contribute to a shift away from car dependency in the area. This needs to be coupled with other initiatives, including key activity precincts as transit oriented nodes, commuter cycling and walk distances, that further shift the centre away from car dependency.
- Existing car parking, and strategic car parking can then be considered, with respect to minimising or better locating facilities an making available land for development.
- + A future Northern Beaches Tunnel and Mona Vale Road Upgrade should be considered within the regional road network hierarchy to further manage vehicles within the centre.





# 2.5 Community Context

This section provides an overview of the community context for Brookvale. An analysis of demographics is provided for the Brookvale suburb area and compared to the Warringah LGA and the statistical average for metropolitan Sydney.



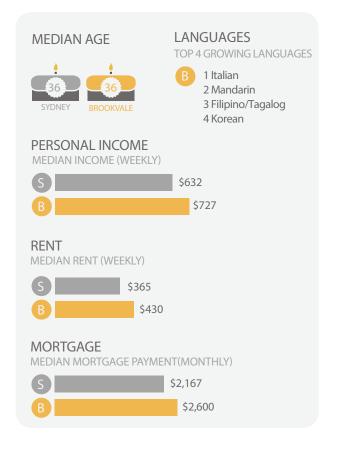




# PROJECTIONS W THEN NOW NEXT 2016 POPULATION W 48,420 156,142 163,599 DWELLINGS W 56,722 58,793 61,973 PEOPLE PER HOUSEHOLD W 2.67 2.67 2.65

### AGE, INCOME AND ETHNICITY

The median age of Brookvale residents is comparable to the typical Sydney resident, however Brookvale has a higher percentage of 25–39 year olds accounting for 30% of the population as against 23% in Sydney. With regard to domestic versus foreign born populations, Brookvale is more diverse than the typical suburb in Sydney with 46% born overseas compared to 40% in metro Sydney. The top 4 growing languages include Italian, Mandarin, Filipino/ Tagalog and Korean. Brookvale resident's are typically more affluent than the Sydney average with higher weekly income levels as well as higher rents and monthly mortgage repayments.





### **DWELLINGS AND FAMILY STRUCTURE**

Brookvale's dwellings accounts for only 5% of the stock in the Warringah LGA. Of these a higher proportion are units/townhouses as against detached homes (70% units/townhouses and 27% detached houses in Brookvale as against 41% and 59% in metro Sydney). There are less family dwellings (63%) and more lone households (30%) in Brookvale compared to metro Sydney which has 73% and 23%.

### **EMPLOYMENT**

Brookvale currently provides 14,000 jobs which accounts for a quarter of all jobs in the Warringah LGA. Resident's occupations are generally comparable to Sydney with 21% of Brookvale residents working as professionals, 16% in clerical & admin, 14% are managers and 13% work in trades & technical services. Just over half of the residents have a post school qualification as in metro Sydney. Travel to work by car is similar however public transport usage is less in Brookvale at 16% as against 20% in metro Sydney.





In February 2015, the Warringah Council asked its community for their comments to help plan a vision for Brookvale. From the online forum discussion a series of key messages were developed that best represents how the community wants Brookvale to develop over the coming years.

### What do you like most about Brookvale?

- + Convenient to shops, schools, city, beaches and transport
- + Affordable for first home buyers on the Northern Beaches
- + Thriving industry at micro level e.g.. breweries and larger scale e.g.. sand supplies.
- Diverse mix of small businesses allows
   Northern Beaches residents to conveniently access the majority of products and services
- + Brookvale Oval is an asset but needs upgrades

### What community services and facilities will be needed in Brookvale?

- Pedestrian safety
- + Improved public transport, cycleways, parking
- + Smaller neighbourhood retail incorporated in residential areas
- + Street tree planting
- + Retain Brookvale Park and provide more <a href="#green">green</a>
  <a href="#space">Space</a>
- + Invest in rail infrastructure
- + Access to better public toilets
- A comprehensive traffic management plan
- + Outdoor seating with greenery

# What can we do to improve and support Brookvale as a thriving centre for business and industry?

- + Brookvale needs a heart currently disjointed and rundown
- + More green space/community gardens in residential areas
- + No high rise we do not want another Dee Why
- + Investin light-rail
- + Create transport interchange hubs with parking and bike facilities
- + Improved CycleWays
- + Encourage Small bar culture to better integrate industrial, living and social aspects
- Mass public/private transport systems need to be planned in conjunction with high density approvals
- Active travel options and improved Streetscapes to encourage walking and cycling
- + Atunnel/Overpass at Pittwater Rd to better connect Brookvale Oval with rest of Brookvale
- Upgrade Brookvale oval to a world class facility
- + Create a pedestrian retail strip
- + More restaurants to give Brookvale a night life



# What are your thoughts about including more residential developments within the current employment areas of Brookvale?

- Need better public transport and road infrastructure to deal with CONGESTION if more people are living in Brookvale
- + Mixed density affordable housing appropriate if it doesn't negatively impact on current industrial and commercial real estate
- + More residential development, as location is very CONVENIENT with services and amenities within walking distance
- + Mix resi/commercial together to bring new life to commercial areas
- + Resistance against high rise, Not another Dee Why
- + Ensure residential development Prevents land USE COnflicts with established industrial corridor
- + High design quality required for a mix of residential and employment areas
- + Need additional Parking, difficult in industrial areas where there is a low water table



### **Key Findings**

The key findings from this analysis of the community context can be summarised as below:

- Brookvale has a larger working population than residential population. There is the opportunity to increase its residential population to encourage an activated centre seven days a week, 24 hours a day.
- + Homes in Brookvale are more affordable than the Warringah LGA average, but not the Sydney average.
- + Brookvale needs more housing choice closer to jobs.
- Furthering education, jobs and entertainment will foster self containment.

The Warringah Council team undertook community engagement at the Brookie Show on Saturday, 17 October, 2015. Key outcomes from this engagement can be summarised as below:

- + For jobs and businesses, the community seeks to give priority to local employment and services while retaining industrial uses in "the machine of the north."
- For living in Brookvale, the community seeks the provision of affordable units and houses, coupled with the introduction of density around the new B-Line BRT.
- For transport and access, the community seeks improved public transport through BRT and trains, as well as the provision of park and ride facilities for commuters.
- For community and open space, the community seeks the creation of a town centre with a market place and the connection of open space using creek corridors are recreational links.

This feedback will form an integral part of the structure plan process to ensure the community's needs and aspirations are being incorporated into the vision for the future.





# BEICHMARKING

# 3 \( \) Benchmarking

The process of benchmarking can be used to investigate the success (or failure) of the delivery of existing projects based on similar planning methodology, typology, scale and quality.

For the purposes of this research and analysis, we have undertaken benchmarking for the following relevant types of precedents:

- + Strategic Centres
- + Employment Centres
- + Transitioning Industrial Centres

The lessons learned from the relevant projects identified in this section focus on creating a Strategic Centre with a sense of place with respect to industrial and business clusters, mixed use employment zones and residential communities. They also include innovations with respect to infrastructure, particularly public transport and road based initiatives.

These projects provide both a local and international range of examples of how others have achieved similar objectives as those posed for the Brookvale Structure Plan, or provide insights into how to achieve the desired outcomes.

In the following pages, each project is described and the key lessons identified in order that the benchmark projects may inform the resulting planning intentions.

They do not necessarily represent physical outcomes for the Brookvale Structure Plan. Rather, they identify current and future directions, trends, and processes, by which the Brookvale Structure Plan can deliver a Strategic Centre for Warringah and Sydney.

The benchmarked cases have been assembled as a collaboration between Hames Sharley, Arup and MacroPlan Dimasi in order to ensure urban, infrastructure and economics imperatives are captured through the process.

The table on the following page provides a comparison of Strategic Centres, as identified in 'A Plan for Growing Sydney' in terms of their land uses, primary use, major assets and transport connections. Brookvale-Dee Why demonstrates a higher mix of uses and major assets than many other Strategic Centres.



	Retail	Health	Education	Industrial	Commercial	Residential	Sport & Rec	Primary Use	Major Asset(s)	Railway station	Railway station (future)	Light rail station (future)	Bus interchange	Bus Service
Sydney CBD	•		•		•	•		Commercial	Sydney CBD	•	•	•	•	•
North Sydney	•		•		•	•		Commercial	North Sydney CBD	•	•			•
Greater Parramatta	•	•	•		•	•		Commercial	Parramatta CBD, Westmead Hospital, University of Western Sydney	•		•	•	•
Campbelltown -Macarthur		•	•		•	•		Education and Health	Western Sydney University (Campbelltown Campus). Sydney Institute of TAFE (Campbelltown), Campbelltown Hospital	•				•
Liverpool	•	•			•	•		Education and Health	Liverpool Hospital, Western Sydney Institute of TAFE (Liverpool), Westfield Liverpool	•			•	•
Penrith	•	•	•		•	•		Retail	Westfield Penrith	•			•	•
Bankstown	•		•		•	•		Retail	Bankstown Central Shopping Centre. South Western Sydney Institute of TAFE (Bankstown)	•			•	•
Blacktown		•			•	•		Retail	Blacktown Hospital, Westpoint Shopping Centre	•			•	•
Bondi Junction	•				•	•		Retail	Westfield Bondi Junction, Eastgate Shopping Centre	•			•	•
Brookvale - Dee Why	•	•		•	•	•		Retail & Industrial and Business Park	Warringah Mall, Northern Sydney Institute of TAFE (Northern Beaches), Brookvale Industrial/Business Park, Brookvale Community Health Centre			•	•	•
Burwood	•					•		Retail	Westfield Burwood	•				•
Castle Hill	•					•		Retail	Castle Towers Shopping Centre		•		•	•
Chatswood	•					•		Retail	Westfield Chatswood, Mandarin Shopping Centre. Chatswood Chase Shopping Centre	•			•	•
Northern Beaches Hospital Precinct		•		•	•	•		Health & Business Park	Northern Beaches Hospital, Forestway Retail Centre, Frenchs Forest Business Park					•
Green Square	•					•		Mixed Use	Urban renewal area currently under construction	•		•		•
Hornsby	•	•				•		Retail	Westfield Hornsby	•			•	•
Hurstville					•	•		Retail	Westfield Hurstville	•			•	•
Kogarah		•				•		Health	St Georges Hospital, Sydney Institute of TAFE (St George College)	•				•
Leppington						•		Mixed Use	Greenfield area currently under construction	•				•
Macquarie Park	•	•	•		•	•		Retail, Education & Business Park	Macquarie Shopping Centre, Macquarie University, Macquarie Park Business Park	•			•	•
Marsden Park				•	•	•		Industrial	Greenfield area currently under construction					•
Norwest		•			•	•		Business Park	Norwest Business Park, Norwest Private Hospital	•				•
Penrith Education and Health		•	•			•		Education and Health	Western Sydney University, Western Sydney Institute of TAFE (Nepean College), Nepean Hospital					•
Randwick Education & Health		•	•			•		Education and Health	University of NSW, Randwick Hospital Precinct, Royal Randwick Racecourse			•		•
Rhodes	•	•				•		Retail	Rhodes Waterside Shopping Centre	•				•
Rouse Hill	•					•		Retail	Rouse Hill Town Centre		•		•	•
St Leonards		•			•	•		Health	Royal North Shore Hospital, Northern Sydney Institute of TAFE (Artarmon)	•				•
Sydney Olympic Park					•	•	•	Sport, Recreation	Sydney Olympic Park, Sydney Olympic	•				•

# Strategic Centre Benchmarks

This section provides benchmarking examples of Strategic Centre's similar in typology to Brookvale across Sydney. This level of analysis provides an understanding of existing expectations for geographic footprints related to specific land uses, resident population, job figures and infrastructure accessibility.

We have selected five Strategic Centres across metropolitan Sydney with a strong employment focus as their primary use:

- + Brookvale
- + Northern Beaches Hospital Precinct
- + Macquarie Park
- + Sydney Olympic Park
- + Norwest Business Park

The following pages provide a comparison in terms of their scale, point of evolution, number of jobs and dwellings, as well as accessibility.



Table 2 Overview of Strategic Centre Benchmarks							
Footprint	Precinct	Size	Evolution	Accessibility	Dwellings	Jobs	
	Brookvale	220 ha	> 25 years	Major Road Intersection (Pittwater Rd & Warringah Rd)	1,100	14,000	
	Northern Beaches Hospital Precinct	260 ha	<10 years	Major Road Intersection (Warringah Rd & Wakehurst Parkway)	1,500	10,000	
	Macquarie Park	200 ha	> 25 years	Major Road Intersection and Heavy Rail & Bus Connections	2,800	45,000	
4	Sydney Olympic Park	> 300 ha	10-25 years	Major Road Intersection and Heavy Rail & Bus Connections	<1000	14,000	
	Norwest Business Park	<100 ha	> 25 years	Major Road Intersection and Bus Connections & future Sydney Metro Rail	600	20,000	

### **BROOKVALE-DEE WHY**





Warringah Mall

Brookvale is primarily an employment hub, serving retail, commercial and industrial sectors. Brookvale-Dee Why are identified as two joint Strategic Centres in 'A Plan for Growing Sydney'. The priority for these centres in the Plan is; to provide an employment focus for the region, by retaining Brookvale centre's commercial and industrial core, and increasing capacity for mixed use development including offices and retail services as well as housing predominately in Dee Why; improving active transport connections between Warringah Mall, Brookvale and Dee Why; and progressing planning for a Northern Beaches bus rapid transit (BRT corridor) which will run through the Brookvale Investigation Area. Brookvale currently has a number of planning proposals and development applications which have been submitted to council. Of significance to the growth of Brookvale, is the Westfield Warringah Mall expansion currently under construction. The Brookvale Structure Plan upon completion will provide a preferred development scenario for growth of the Brookvale Strategic Centre. A Master Plan commissioned by the Warringah Council, already exists for the Dee Why Town Centre.

The following benchmarks describe Strategic Centres in Sydney with similar typologies to Brookvale-Dee Why and explain the centres relevance with regard to the growth and transition of the Brookvale Investigation Area.



Pittwater Road



Brookvale West Industrial Park

### **KEY FACTS**

**14**,000 jobs

1,100 dwellings

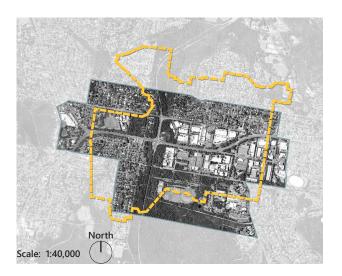
+ Mature centre



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### NORTHERN BEACHES HOSPITAL PRECINCT





Frenchs Forest Business Park

The future Northern Beaches Hospital (currently under construction) is the catalyst for growth in the Northern Beaches Hospital Precinct, located west of Brookvale in the Warringah LGA. The purpose of the Strategic Centre is to capitalise on the growing cluster of hospital and health related uses with associated research and business park opportunities to stimulate local jobs. A Structure Plan is currently being prepared to guide development and growth of the precinct over the next 20 years. The major uses for the precinct will include the hospital, Frenchs Forest Business Park and mixed use development, including a town centre and residential land.

The Northern Beaches Hospital Precinct is identified as a new Strategic Centre with a specialised function as a health centre. Similarly to Brookvale, the Strategic Centre includes a large business park which provides a large proportion of the employment in the area. Frenchs Forest Business Park will evolve to provide more health and research related jobs, just as Brookvale's industrial precincts are expected to transition to more intensified and diversified uses.



Warringah Road



Frenchs Forest Hospital

### **KEY FACTS**

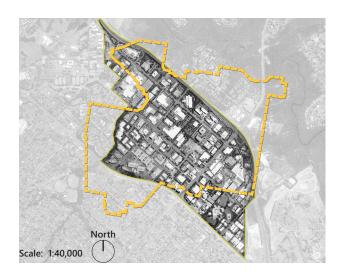
**1**0,000 jobs



+ Emerging centre



### MACQUARIE PARK





Macquarie Park is a key education, business and retail hub in Sydney's Global Economic Corridor. The Strategic Centre is comprised of; Macquarie University; Sydney's second largest business park, specialising in pharmaceutical, technology and telecommunications industries; and the major regional shopping centre Macquarie Centre. Macquarie Park was designed with a traditional model of land use planning, which segregated its land uses and prioritised the motor vehicle. The construction of the Epping to Chatswood rail line with three stations in the vicinity of Macquarie Park has however been a catalyst for sustainable growth in the area, with major developments currently in the works for the business park, university and retail centre, as well as nearby residential development. The priorities for growth of the precinct, as per 'A Plan for Growing Sydney' include: retaining the commercial core and supporting education and health related land uses and infrastructure; concentrating capacity for additional mixed use development; delivering Herring Road, Macquarie Park and North Ryde Priority Precincts to provide increased residential development; and delivering a finer grain road network.

Macquarie Park is a Strategic Centre with a similar mix of major uses to Brookvale, including a business park, education institution and a regional retail centre. Additionally both Brookvale and Macquarie Park are mature centres and as a result have been designed with traditional land use planning. The priorities for Macquarie Park in 'A Plan for Growing Sydney' seek to address the issues associated with its age to enable the growth of an integrated activity centre which provides housing close to employment and public transport, and a delivers a walkable street network.



Macquarie Park



Optus Headquarters

### **KEY FACTS**

## 40,000 jobs

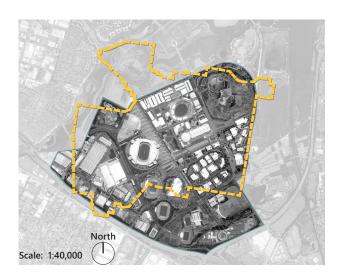
2,800 dwellings

+ Mature centre





### SYDNEY OLYMPIC PARK





Sydney Olympic Park is a large sporting, entertainment, recreation and commercial complex. The site was an industrial wasteland prior to its redevelopment for the 2000 Sydney Olympics. Since then, the centre has continued to undergo a significant amount of development to support its transition to a multi-purpose centre. This has included the revitalisation of the extensive parklands and the integration of commercial development into the complex. A Master Plan has recently been prepared to facilitate increased activation of the area. The central precinct, currently characterised by low density commercial and industrial buildings is planned to evolve into a mixed use pedestrian oriented neighbourhood. The Master Plan is in line with the priorities in 'A Plan for Growing Sydney, including to provide capacity for additional mixed-use development, facilitate delivery of Carter St, Lidcombe and Wentworth Point Priority Precincts to increase nearby residential development, as well as improve walking and cycling from the railway station.

Sydney Olympic Park is an example of a Strategic Centre which has been expanding its variety of uses to transition from its mono function as a sport and entertainment complex, into an integrated mixed use neighbourhood. This is enabling the place to service not only visitors but also the growing population working and living in the area. The redevelopment seeks to improve activation of the area. It is a precedent for Brookvale, as to how to transition to be a more densified, mixed use, pedestrian friendly Strategic Centre.



Sydney Olympic Park Rail Station



Novotel Sydney Olympic Park

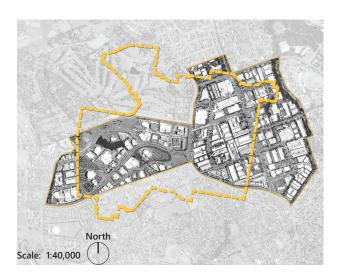
### **KEY FACTS**

## 4,500 jobs



+ Mid-transition centre

### **NORWEST**





Norwest Strategic Centre is an established industrial and business park. The business park has been the long standing headquarters for the large corporation Hillsong Church and in more recent years Woolworths Limited. With its placement as a future station on the Sydney Metro North West rail line, the Strategic Centre is expected to grow and transition from being a traditional business park, into a mixed use TOD to provide more jobs close to homes. A structure plan has been prepared with the vision for the place to evolve as a vibrant and active centre of business for the region, comprising offices, retailing, community facilities recreation, cultural, education and housing. The priorities for Norwest in 'A Plan for Growing Sydney' are focused on; implementing the Norwest and Bella Vista Structure Plans to provide additional capacity for mixed use development near stations; supporting health-related land uses and infrastructure around Norwest Private Hospital; and improving walking and cycling connections to the future stations.

Norwest is similar to Brookvale in that both centres are dominated by a large industrial/business park. Norwest is transitioning from its mono function as a traditional business park into an intensified mixed use TOD to service the growing population of workers and residents in the area. As a result of Norwest's placement on the Sydney Metro North West rail line, a Structure Plan has been prepared to guides its development with the primary focus of ensuring Norwest Business Park remains the major commercial hub of the Northwest, just as Brookvale will remain the industrial hub of the Northern Beaches.



Norwest Lake



Norwest Business Park

### **KEY FACTS**

**2**0,000 jobs



+ Mature centre







# 3.2 Employment Centre Benchmarks

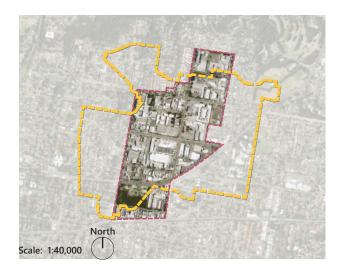
This section provides benchmarking examples of employment centres similar in typology to Brookvale across Sydney. This analysis focuses on employment centres across metropolitan Sydney that service a strategic employment function for their region and are often under pressure to introduce additional residential capacity. For this reason, the following employment centres have been selected for analysis:

- + Brookvale
- + Kirrawee
- + Artarmon
- + Taren Point
- + Rydalmere
- + Alexandria
- + Blacktown



Table 3 Overview of Employment Centre Benchmarks								
Footprint	Precinct	Location	Size	Evolution	Accessibility	Zoning		
	Brookvale	16km NE of CBD The Warringah Council	250 ha approx	< 25 years	Major Road Intersection, Pittwater Rd & Warringah Rd and Bus Connections	IN1 General Industrial B3 Commercial Core B5 Business Development		
	Kirrawee	25km SW of CBD Sutherland Shire	100 ha approx	< 25 years	Major Road, Princes Highway, Heavy Rail & Bus Connections	IN1 General Industrial B6 Enterprise Corridor B4 Mixed Use		
	Artarmon	9km NW of CBD City of Willoughby	100 ha approx	< 25 years	Major Road, Pacific Highway, Heavy Rail, future Metro Rail & Bus Connections	IN1 General Industrial IN2 Light Industrial B7 Business Park SP2 Infrastructure		
1	Taren Point	20km S of CBD Sutherland Shire	200 ha approx	< 25 years	Major Road, Rocky Point Rd, Heavy Rail & Bus Connections	IN1 General Industrial IN2 Light Industrial IN4 Working Waterfront B7 Business Park B6 Enterprise Corridor		
	Rydalmere	21km NW of CBD City of Parramatta	100 ha approx	< 25 years	Major Road. Victoria Rd. Heavy Rail & Bus Connections	IN1 General Industrial IN2 Light Industrial		
	Alexandria	4km S of CBD Marrickville Council	250 ha approx	<25 years	Major Road, O'Riordan St, Heavy Rail & Bus Connections	IN1 General Industrial IN2 Light Industrial B6 Enterprise Corridor B7 Business Park		
	Blacktown	34km W of CBD Blacktown Council	250 ha approx	<25 years	Major Road , Sunny Holt Rd, Heavy Rail & Bus Connections	IN1 General Industrial IN2 Light Industrial B5 Business Development B7 Business Park		

### KIRRAWEE INDUSTRIAL AREA, **PRINCES HIGHWAY**



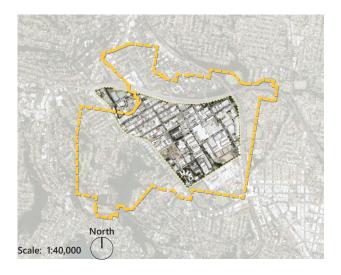


- + Mature centre
- + 100 ha size
- + IN2 Light Industrial, B3 Commercial Core, B5 Business Development
- + 2004 businesses
- + 20,883 residents (SA2 Region)
- + Major road, Heavy Rail and Bus connections





# ARTARMON INDUSTRIAL AREA, PACIFIC HIGHWAY





- + Mature centre
- + 100 ha size
- + IN1 General Industrial, IN2 Light
  Industrial, B7 Business Park, SP2
  Infrastructure
- + 4741 businesses
- + 3,519 residents (SA2 Region)
- + Major road, Heavy Rail, future Metro rail and Bus connections



### TAREN POINT INDUSTRIAL AREA, **ROCKY POINT RD**



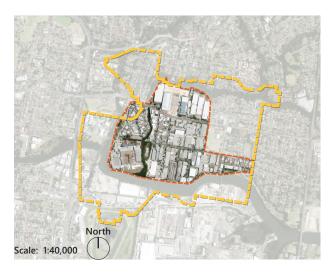


- + Mature centre
- + 200 ha size
- + IN1 General Industrial, IN2 Light Industrial, IN4 Working Waterfront, B7 Business Park, B5 Business Development
- + 5,408 businesses
- + 16,221 residents (SA2 Region)
- + Major road, Heavy Rail and Bus connections





# RYDALMERE INDUSTRIAL AREA, VICTORIA RD

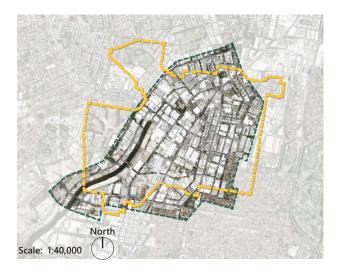




- + Mature centre
- + 100 ha size
- + IN1 General Industrial, IN2 Light Industrial
- + 1,856 businesses
- + 21,628 residents (SA2 Region)
- + Major road, Heavy Rail and Bus connections



### ALEXANDRIA INDUSTRIAL AREA, O'RIORDAN ST



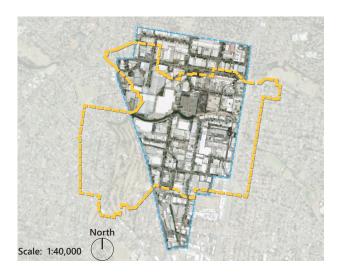


- + Mature centre
- + 250 ha size
- + IN1 General Industrial, IN2 Light Industrial, B7 Business Park, B6 **Enterprise Corridor**
- + 2,912 businesses
- + 8,203 residents (SA2 Region)
- + Major road, Heavy Rail and Bus connections





## BLACKTOWN INDUSTRIAL AREA, SUNNY HOLT RD





#### **KEY FACTS**

- + Mature centre
- + 250 ha size
- + IN1 General Industrial, IN2 Light Industrial, B7 Business Park, B5 Business Development
- + 1,998 businesses
- + 16,925 residents (SA2 Region)
- + Major road, Heavy Rail and Bus connections



The following table identifies the keys characteristics and trends of each centre.

As noted within Section 2.4 of this report, Business Growth in the Brookvale SA2 region, employing businesses expanded by 45 in the LGA, underpinned by growth in:

- + Accommodation and Food Services (14 businesses);
- + Information and Telecommunications (11 businesses);
- + Retail Trade (9 businesses);

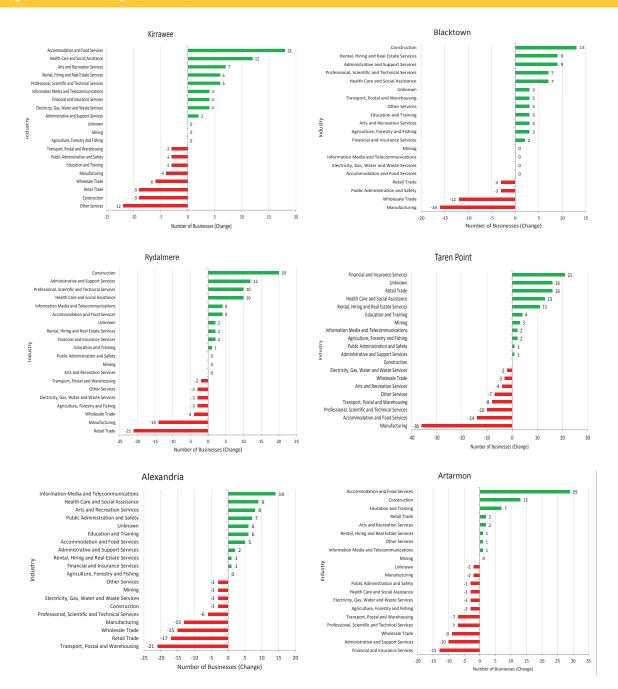
Interestingly, employing businesses growth in the other six centres, expanded by an average of 6 businesses with a range from 31 to -25.

Table 4 Centres Change in the Number of Employing Businesses							
Business Centre	Employing Business 2014 (ABS)	Change 2011-2014 (ABS)	Non- Employing business 2014 (ABS)	Positive Change Top 3 (ABS - 2011-2014)	Change	Negative Change Bottom 3 (ABS - 2011-2014)	Chang
Brookvale	1732	45	2054	Accommodation & Food Services	14	Manufacturing	-12
				Info, Media & Telecom	11	Wholesale Trade	-10
				Retail Trade	9	Public Admin & Safety	-8
Kirrawee	929	14	1075	Accommodation & Food Services	18	Construction	-9
				Health Care & Social Assistance	12	Retail Trade	-9
				Arts & Recreation	7	Wholesale Trade	-6
Blacktown	950	31	1048	Construction	13	Manufacturing	-16
				Rental, Hiring & Real Estate	9	Wholesale trade	-12
				Admin & Support	9	Retail Trade	-3
Alexandria	1335	-25	1577	Info, Media & Telecom	14	Transport, Postal and Warehousing	-21
				Health Care & Social Assistance	9	Retail Trade	-17
				Arts & Recreation	8	Wholesale Trade	-15
Rydalmere	838	17	1018	Construction	20	Retail Trade	-21
				Admin & Support	12	Manufacturing	-14
				Health Care & Social Assistance	10	Wholesale Trade	-4
Taren Point	2357	6	3051	Financial & Insurance	21	Manufacturing	-36
				Retail Trade	16	Accommodation & Food	-14
				Health Care & Social Assistance	13	Professional, Scientific and Technical Services	-10
Artarmon	2095	-6	2646	Accommodation & Food		Financial & Insurance	-13
				Construction		Admin & Support Services	-10
				Education & Training		Wholesale Trade	-0

Source: ABS Count of Australian Businesses, including entries and exits (2014)



#### Figure 1 Business Change (2011 - 2014



Business Centre	Employee Projections 2011 (TZ)	Projected Employee Change 2011- 2031 (TZ)	Positive Change Top 3 (TZ - 2011-2031)	Change	Negative Change Bottom 3 (TZ - 2011-2031)	Chang
		2001 (12)	Retail Trade	1367	Polymer Product & Rubber Product	-67
					Manufacturing	
Brookvale	15224	3509	Wholesale Trade	369	Printing (including the Reproduction of Recorded Media)	-32
			Health Care & Social Assistance	253	Textile, Leather, Clothing and Footwear  Manufacturing	-24
			Health Care & Social Assistance	238	Polymer Product and Rubber Product  Manufacturing	-33
Kirrawee	5352	1300	Retail Trade	237	Food Product Manufacturing	-13
			Public Admin & Safety	178	Wood Product Manufacturing	-9
			Retail Trade	1341	Polymer Product and Rubber Product  Manufacturing	-144
Blacktown	18747	5079	Public Admin & Safety	622	Unclassified	-43
		Accommodation & Food	574	Pulp. Paper and Converted Paper Product Manufacturing	-39	
			Retail Trade	500	Printing (including the Reproduction of Recorded Media)	-167
Alexandria 14576	1639	Wholesale Trade	314	Textile, Leather, Clothing and Footwear  Manufacturing	-131	
		Health Care & Social Assistance	251	Machinery and Equipment  Manufacturing	-125	
			Public Admin & Safety	402	Textile, Leather, Clothing and Footwear  Manufacturing	-188
Rydalmere	8316	1946	Machinery & Equipment Manufacturing	290	Printing (including the Reproduction of Recorded Media)	-20
			Construction	255	Polymer Product and Rubber Product  Manufacturing	-19
			Retail Trade	403	Polymer Product and Rubber Product  Manufacturing	-119
Taren Point	8850	1636	Construction	325	Printing (including the Reproduction of Recorded Media)	-11
			Transport Equipment Manufacturing	188	Fabricated Metal Product Manufacturing	-11
			Health Care and Social Assistance	2448	Printing (including the Reproduction of Recorded Media)	-32
Artarmon	17924	4969	Information Media & Telecom	639	Pulp. Paper and Converted Paper Product Manufacturing	-9
			Retail Trade	318	Wholesale Trade	-6



Growth in these centres was underpinned by:

- + Health Care and Social Services (Kirrawee, Alexandria, Rydalmere, Taren Point);
- + Construction (Blacktown, Rydalmere, Artarmon); and
- + Accommodation and Food Services (Kirrawee, Artarmon).

Brookvale SA2 region had the greatest employing businesses growth of all centres with 45. In addition Brookvale had the second lowest decline of businesses with 37 compared with 34 in Blacktown and 84 both in Alexandria and Taren Point.

Manufacturing. Wholesale Trade and/or Retail Trade were the key contributors to employing businesses decline across all six compared centre. This is consistent with the Brookvale SA2 region with the exception of Retail Trade being one of the top three employing businesses growth areas. Taren Point also had a top three increase in the retail Trade.

Employee projections from 2011 to 2031 from BTS (2014), project a consistent growth across all centres. Interestingly, growth in sectors such as Retail Trade are suggested to increase whereas ABS data shows a decline over 2011–2014 period in this sector of businesses.

#### **POPULATION GROWTH**

As at 2014, population growth across all 6 centres has been solid, expanding at an average annual rate of 2.1% per annum.

#### **POPULATION PROJECTIONS**

According to the BTS the resident population of the six centres is expected to increase by an average of 2.6% growth per annum consistently over the next 15 years.

nulation (	Growth B	rookvale	SA2 rea	ion (20)	14 & 2014)
putation					5 T GL E 5 1 T /

Precinct	SA2 Region	2004	2014	Total Change	Annual Growth	CAGR (%)
Princes Hwy, Kirrawee	Sutherland - Kirrawee	18,876	20,883	2,007	201	1.0%
Pacific Hwy, Artarmon	Chatswood (East) - Artarmon	22,868	26,387	3,519	352	1.4%
Rocky Point Rd, Taren Point	Sylvania - Taren Point +	11,654	16,221	4,567	457	3.4%
	Caringbah - Lilli Pilli	40,033	44,124	4,091	409	1.0%
Victoria Rd, Rydalmere	Ermington - Rydalmere	17,853	21,628	3,775	378	1.9%
Alexandria	Erskineville - Alexandria	6,761	8,203	1,442	144	2.0%
Sunnyholt Rd, Blacktown	Blacktown (East) - Kings Park	13,395	16,925	3,530	353	2.4%
Brookvale	Freshwater - Brookvale	18,196	21,721	3,525	353	1.8%

Source: ABS Regional Population Growth (2014)

Precinct	Travel Zones	2011	2031	Total Change	Annual Growth	CAGR (%)
Princes Hwy, Kirrawee	2854,2848,2851	7,501	10,403	2,902	145	1.6%
Pacific Hwy, Artarmon	1838,1841,1843	1,326	3,213	1,887	94	4.5%
Rocky Point Rd, Taren Point	2900,2901,2949	1,211	1,308	97	5	0.4%
Victoria Rd, Rydalmere	1120	349	511	162	8	1.9%
Alexandria	262,263,264,266,267,274,283	3,345	5,506	2,161	108	2.5%
Sunnyholt Rd, Blacktown	4101,4103,4105,4107	2,693	6,858	4,165	208	4.8%
Brookvale	2143,2144,2145	2,759	4,420	1,661	83	2.4%

Source: ABS Regional Population Growth (2014)

# 3 3 Transitioning Industrial Benchmarks

This section provides benchmarking examples of transforming industrial Centres similar in typology to Brookvale within Sydney, across Australia and internationally. This analysis examines how various inner city industrial centres have evolved or transitioned to include new complementary uses as the role and magnitude of industrial uses declines at different rates around the world.

These benchmarks demonstrate how Brookvale might transition in the future in its role as a Strategic Centre for metropolitan Sydney.



Precinct	Primary Traditional Uses	Primary Transitioning Uses		
Brookvale. NSW Australia	General Industrial, Retail, Education	General Industrial, Commercial, Retail, Education Health		
Precinct 75, St Peters, NSW Australia	Heavy and Light Industrial, Creative Industries	Creative Industries, Commercial, Retail		
Danks St, Waterloo, NSW Australia	Light Industrial	Creative Industries, Retail, Residential		
Newstead, Brisbane, QLD Australia	Heavy Industrial	Light Industrial, Commercial, Residential, Recreation		
Tonsley, SA Australia	Heavy Industrial	Heavy and Light Industrial, Research, Educational Residential		
Brooklyn Naval Yards, New York, USA	Heavy Industrial	Heavy and Light industrial, Creative Industries		
Wynyard Quarter, Auckland New Zealand	Heavy Industrial	Light Industrial, Commercial, Residential, Retail, Recreation		
SOMA, San Francisco USA	Heavy and Light Industrial, Creative Industries, Residential	Entertainment, Commercial and Residential		
Pearl District, Portland. USA	Heavy Industrial, Creative Industries	Commercial, Retail, Residential		

## Australian Benchmarks





#### PRECINCT 75, ST PETERS, NSW

Precinct 75 is a new creative precinct incorporating hospitality, retail and flexible office space which is located within the Marrickville / Sydenham industrial lands. The industrial lands consist of light industries as well as larger lots with more traditional industrial activity and continue to play an important industrial role in the subregion due to the strategic location close to the CBD, Sydney Airport and railway line. In addition to its industrial uses the area also has a strong multicultural, creative and music culture, which has developed over the years from the migrant community living nearby and artists utilising disused warehouse spaces. Marrickville Council is currently investigating how to revitalise the area into a thriving 24-hour destination that is a live music and creative industry hub for Sydney and Precinct 75 is just one of the many evolving creative precinct projects. The Precinct 75 development has adaptively reused a paint factory and is today comprised of hospitality, retail, creative businesses, garage door cafés and fitness studios.

Precinct 75 provides a precedence for establishing a creative precinct within industrial lands. Similarly to Brookvale, the Marrickville / Sydenham industrial lands are in transition. The Precinct 75 development has revitalised a derelict industrial complex, and in line with the Council's aims, created a creative hub for new and innovative businesses to develop. The development has resulted in day and night activation of the precinct enabling it be utilised by the local community and visitors as well as workers.

#### DANKS ST, WATERLOO, NSW

Danks St is a food and arts precinct located within the Green Square Urban Renewal Area. The urban renewal project is transforming the industrial area into a mixed use neighbourhood with a focus on high density residential development to meet the growing needs for housing in Sydney's inner city. Part of the vision is to create distinct neighbourhoods and since much of the project is still underway, including the town centre, Dank St is identified as one of the few established vibrant villages within the redevelopment area. Danks St is comprised of art galleries, cafés, restaurants and specialist retail stores, many of which are housed in adaptively reused warehouses. The area is buzzing with locals workers and visitors and its uses are expected to expand to nearby streets as Green Square develops.

Danks St has transitioned from its industrial uses into a distinct and lively mixed use neighbourhood. Danks St is a benchmark for Brookvale, as its revitalisation has created a street with a sense of place and community which is also seen as a precedence for surrounding precincts within the Green Square redevelopment. The development differs to Brookvale however, as while there is a need to protect and preserve industrial and business zoned land in South Sydney, the Green Square redevelopment sits outside the City of Sydney Employment Lands, and hence investment in the area has the key aim of providing high density inner city living. As a result of residential development, the area is experiencing rapid economic growth, however this is in turn resulting in rents becoming unaffordable for galleries/smaller businesses and the areas original residents.

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#### NEWSTEAD, BRISBANE, QUEENSLAND

The Newstead redevelopment is transforming a derelict industrial suburb into a contemporary mixed use development incorporating residential, commercial, industrial and recreational activities. The revitalisation has involved the adaptive reuse of industrial structures, as seen in the Gasworks Precinct where high rise commercial/residential towers and a retail town centre have been placed around a public piazza created within the heritage listed gasometer frame. The Newstead North Precinct has been preserved for industrial uses and is restricted to low to mid rise industrial, commercial and showroom activities and offices where they service an industrial activity.

Newstead has transitioned from its traditional industrial uses and is being revitalised into a mixed use neighbourhood with the aim of reinvigorating Brisbane's riverfront and providing quality jobs and residential densities in Brisbane's inner city. Newstead is relevant to Brookvale as both places are experiencing an industrial transition. Newstead has been successful in providing a greater mix of uses without damaging the fabric of existing communities or demolishing the industrial heritage of the area by preserving space for evolving industrial activities and adaptively reusing industrial buildings and structures.

#### **TONSLEY, SOUTH AUSTRALIA**

Tonsley was formerly home to car manufacturing factories and today is being transformed into a collaborative and high value industry, education and residential precinct. Commercial and industrial businesses will occupy 70% of the land, with 18% allocated to residential, 10% education and 2% retail. The high value manufacturing and commercial allotments will provide spaces for: resources and mining, clean technologies and renewable energy, health and medical technologies and assistive devices, sustainable building products and services. To support these industries, two related educational institutions have recently opened campuses at Tonsley including the Flinders University's Computer Science, Engineering and Mathematics School and TAFE's Sustainable Industries Education Centre.

Tonsley provides a benchmark for transitioning a traditional industrial site into a mixed use precinct driven by high value manufacturing and commercial businesses. Similarly to Brookvale, the development aim is to support the transformation of the areas manufacturing industry. Tonsley has been successful in ensuring the area retains its industrial character through making this the primary land use and attracting related education facilities to the precinct to create a vibrant and innovative activity centre.

### International Benchmarks





#### **BROOKLYN NAVAL YARDS, NEW YORK**

The Brooklyn Naval Yards is a modern industrial park which has transitioned from its use as the primary navy shipbuilding facilities for New York. The transformation began when the City of New York undertook measures to diversify the tenant mix, primarily by partitioning large factory spaces into much smaller spaces and changing the lease structure to attract smaller manufacturers. The development now supports new and innovative manufacturing processes as well as creative industries with a dedicated film hub and sustainable technologies incorporated into the operations of the tenant businesses. The revitalisation project has been rolled out incrementally to ensure the values of the site as a manufacturing hub are protected and enhanced and to avoid conflicting residential uses.

The Brooklyn Naval Yards is a successful example of an industrial park which has transitioned from its heavy industrial uses to incorporate a mix of heavy and light industries and creative businesses. The project is a precedence for Brookvale, as the redevelopment has created a stabilising hub for the manufacturing sector in New York, just as Brookvale will continue to play a vital role as an employment centre and the industrial hub for the Northern Beaches. The development has enabled the park to retain its important manufacturing land amongst pressure for housing. Through intensifying and diversifying its employment uses and incorporating sustainable technologies into the design, creative and innovative industries have been attracted to establish their businesses there.

#### WYNYARD QUARTER, AUCKLAND, NEW ZEALAND

Wynyard Quarter is part of Auckland's large scale redevelopment of the inner city waterfront. The revitalisation project will transform the industrial port land into a mixed use precinct incorporating entertainment, residential, commercial and industrial uses. Wynyard Quarter will accommodate mixed use development with ground floor retail/hospitality and offices and townhouses/apartments and a 4.5ha urban park which will provide a pedestrian promenade linking through to the city. Integral to the redevelopment is protecting the economic and social role that the industrial, commercial and marine activities play in the area. As such key sites will be preserved for marine and fishing activities and significant heritage buildings adaptively reused.

Wynyard Quarter is seeing Auckland's inner city waterfront transition from its traditional mono function as an industrial port into a mixed use activity precinct. The project is a benchmark for Brookvale, as the site has retained its important industrial role and significant heritage sites through the revitalisation process. By integrating a mix of land uses and activities to accompany the marine activities, the precinct has become a vibrant and safe place to be both day and night and created a lively neighbourhood attracting workers, residents as well as many visitors to the place.

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#### **SOMA, SAN FRANCISCO**

SOMA (South of Market Area) is a mixed use neighbourhood comprised of entertainment, commerce and living space. The area has been experiencing a transition in industry for a number of years, from its role as an industrial port, to the longstanding presence of the garment industry, PDR (Production Distribution Repair) and auto repair businesses, followed by the dotcom boom and in more recent years the tech surge. SOMA has always been a mixed use neighbourhood, characterised by its live/work spaces in converted warehouses. The growth of the tech industry has however brought with it increased residential development and a more affluent population, displacing lower-income residents, the PDR industry, smaller firms. In response to this, the city has developed a new model of revitalisation, with design policies aimed to encourage a mixed income and mixed use identity in SOMA. The new model incorporate PDR, retail, market rate and affordable housing, as well as implementing a job to resident ratio.

SOMA is an example of a mixed use precinct which has experienced a series of transitions in industry over the years. As the neighbourhood has experienced economic growth, SOMA's character has changed and industrial jobs have been in decline. SOMA's new model of revitalisation is seeking to address these challenges, including encouraging more industrial jobs in the PDR sector which is in high demand. SOMA provides a benchmark for Brookvale, in that it has already experienced a number of transitions which have overtime changed its industrial character. The city has however realised the importance of its industry and communities and is attempting to revitalise the city in a new way which doesn't only result in gentrification.

#### PEARL DISTRICT, PORTLAND

The Pearl District is a mixed use residential neighbourhood which has transitioned from its use as a rail yard and industrial district. Artists were first attracted to the industrial wasteland of the Pearl District by low rents, high vacancies and close proximity to the city. The revitalisation project then began with the removal of a viaduct opening up dozens of surrounding blocks for development. The focus for the project was on the area's capacity for growth as a high density mixed use neighbourhood through infill development, with green spaces and historic preservation. Today the district mostly consists of high rise condominiums and warehouse to loft conversions as well as art galleries, eateries and upscale retail stores.

The Pearl District has been transformed from a derelict industrial area into a trendy and affluent mixed use neighbourhood. The area has retained its heritage through the adaptive reuse of industrial warehouses. The character of the area however has significantly changed. This is due to the area no longer functioning as an industrial district, but also from the uptake of residential development in the area and the resultant economic growth which is seeing the poor artists which first established a community in the area being displaced. The project differs to Brookvale, in that Brookvale still plays an important role as an industrial hub, however as its uses are in transition, Brookvale can learn from the Pearl District to ensure its community and character is not displaced or lost through the revitalisation process.

# 3.4 Key Findings

This section provides a summary of the key findings arising from this benchmarking exercise. Having researched comparable Strategic Centres, employment centres and transitioning industrial centres, there are some key issues to be considered in the preparation of the Brookvale Structure Plan. These are detailed below and include consideration of the mix of uses, complementary uses, employment trends and the transport infrastructure to support a growing Strategic Centre for metropolitan Sydney.

- + Strengthen and evolve mix of uses,
- + Consider employment trends,
- + Ensure job and resident growth is appropriate for transport capacity.
- + Consider and adapt to new complementary industries.

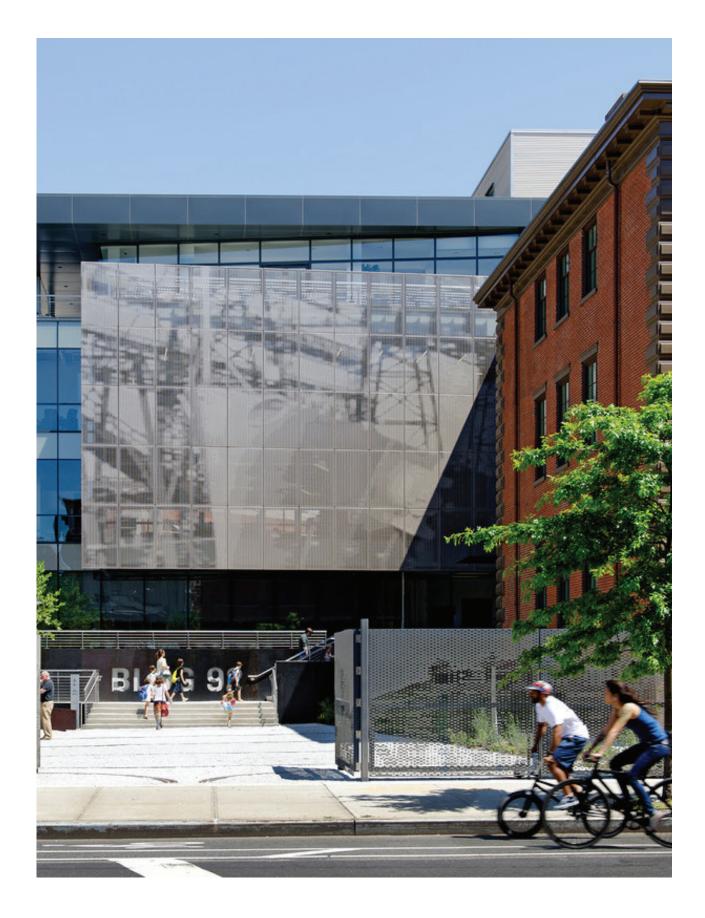
Compared to all other Strategic Centres identified in 'A Plan for Growing Sydney,' Brookvale-Dee Why is unique as a combined centre that together has a major retail asset in Warringah Mall, a "main street" town centre in Dee Why as well as industrial, business park, civic functions and education uses. No other Strategic Centre has such a strong existing mix of uses. It will be important for Brookvale to maintain this mix of uses and ensure they continue to strongly perform their strategic employment role for the Northern Beaches.

One other issue specific to Brookvale-Dee Why is that it is one of only three Strategic Centres across Sydney without existing or committed future rail infrastructure serving its growing employment and residential population. It is of a similar geographic scale to other non-retail employment focused Strategic Centres such as Northern Beaches Hospital Precinct (10,000 jobs), Macquarie Park (40,000 jobs), Sydney Olympic Park (4,500 jobs) and Norwest (20,000 jobs) however Macquarie Park, Sydney Olympic Park and Norwest are currently served or will be served by rail infrastructure in the near future. This is significant for Brookvale as while many existing employment and business industries are car oriented in their method of travel to work, there is a limit to how many additional jobs (and residents) can be accommodated in Brookvale before transport issues arise.

This report's analysis of employment centres that are not classified as Strategic Centres yet perform strategic employment functions for their region identified some consistent trends in terms of growth and decline in certain employing businesses. Growth in these centres was largely underpinned by Health Care and Social Services, Construction, Accommodation and Food Services. Manufacturing, Wholesale Trade and Retail Trade were the key contributors to employing businesses decline across the six compared centres, however Retail Trade at Brookvale was one of the top three employing businesses growth areas. In considering Brookvale's evolution over the next 20 years, we must incorporate these trends and ensure that jobs growth can be accommodated in Brookvale in accordance with changes occurring in employing businesses.

In recognising that employment centres are evolving away from Manufacturing and Wholesale Trade, the report examined industrial focused employment centres that are transitioning and diversifying to include new complementary uses. The introduction of future technologies, creative industries, art galleries, cafés, restaurants and specialist retail stores has assisted in revitalising these benchmarks in Australia and around the world. One key issue is the amount of residential that can be accommodated in an industrial centre while still achieving liveability standards and maintaining employment capacity. This will be especially pertinent at Brookvale in retaining its strong employment function for the Northern Beaches while considering if, where and how much









# NEXT STEPS

# 4.0 Next Steps

This section identifies priority considerations to be integrated into the next stage of the Brookvale Structure Plan process.

The next stage, Stage 3 – Draft Scenarios, will assess the opportunities and constraints for the Investigation Area, undertake a visioning workshop with key internal stakeholders, then prepare principles and strategies for the future growth of Brookvale that will underpin a series of possible future development scenarios for the project. Concurrently, stakeholder and community engagement will occur through a series of drop in sessions and working group sessions to confirm the aspirations of land owners, business owners and residents for Brookvale over the next 20 years.

The priority considerations listed in this section will guide the preparation of scenarios for Brookvale. We welcome Council's review and comment of these considerations as we progress into the next stage.

The following considerations arise from the analysis undertaken during Stage 2 – Research and Analysis. They respond to the planning, transport and economic analysis completed by the consultant team and build upon key issues identified during previous engagement:

- + Deliver a Strategic Centre for metropolitan Sydney.
- + Reinforce and strengthen network of centres across Warringah.
- + Focus on a hub and corridor solution to protect open space and the environment.
- Retain Brookvale's role as the economic heart of the Northern Beaches.
- + Accommodate future jobs growth.
- + Create localised employment opportunities.
- + Facilitate the changing needs of the business community.
- + Incentivise growth in future industries, services, technologies and research.
- + Consider upskilling programs for jobs of the future.
- + Manage housing choice, diversity and affordability.
- + Ensure transport infrastructure commensurate with a Strategic Centre.
- + Leverage the regional road network.
- + Maximise the future B-Line corridor on Pittwater Road.
- + Enable a well connected centre with prioritised active transport.
- + Elevate the quality of the public domain, parks open spaces and parks.
- + Integrate with the regional open space network.
- Respond to adjacent native vegetation and wildlife corridors.
- + Address hydrology issues such as creeks, riparian zones and flood prone land.
- + Incorporate sport and recreation facilities.
- + Enhance existing heritage items.
- + Reinforce a clear identity for Brookvale in response to stakeholder and community aspirations.
- + Establish a clear framework to assess and measure pressures for change in the future.







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