15 JUBILEE AVENUE, WARRIEWOOD

ECONOMIC IMPACT ASSESSMENT

BLACKMORES

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EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

Warriewood Valley, located in the southern portion of the Pittwater LGA, is bordered by the Pittwater escarpment in the west, Warriewood Wetlands to the south, Warriewood Sewerage Treatment Plant (STP) and Warriewood itself to the east, and Mona Vale to the north. The Warriewood Valley Release Area (the Release Area) is around 190 hectares. The Release Area includes 27 hectares of industrial/commercial land and associated community facilities and infrastructure ("the Precinct"). Industrial and commercial developments adjoin the existing light industrial and office business area of the Precinct.

Despite there being a significant amount of employment growth projected for the Pittwater LGA, there are challenges in accommodating this growth in existing industrial areas (such as the Precinct). Through a myriad of factors, global competitiveness is driving considerable change across the Australian industrial landscape. This transition has meant a move away from traditional manufacturing into more advanced, technology and knowledge intensive manufacturing that provides a higher valued product. This change is however not possible across all manufacturing sectors, resulting in some sectors moving off-shore.

In the context of the Precinct, the manufacturing industry represents 50% of employment in the Precinct. Furthermore, Basic Chemical and Chemical Product Manufacturing represents the highest proportion of Manufacturing at over 13% of manufacturing employment. This is not surprising given that Blackmores and other pharmaceutical businesses are located in the Precinct.

The nature and composition of industrial land has changed over the last two decades. Over the past number of decades, industrial land has transitioned from and accommodating warehousing and light manufacturing uses to include office uses in greater proportions. A range of business uses are increasingly accommodated on what was previously industrial land in the form of business parks.

THE PROPOSAL

Mecone has prepared a Planning Proposal on behalf of Blackmores to amend the planning controls pertaining to 15 Jubliee Avenue, Warriewood ("the Site"). The Planning Proposal seeks to rezone the Site from IN2 Light Industrial to B7 Business Park.

WMK Architects have devised two development scenarios for the Planning Proposal. Both options proposed that the Site is rezoned to B7 Business Park, Option 1 provides for an FSR of 1:1 and Option 2 has an FSR of 1.5:1. Below is an outline of each type of use which would comprise the development options and the floorspace associated with each one.

Option 1 (FSR 1:1)

- Office and Meeting – 4,014sqm (GFA)
- Café – 135sqm (GFA)
- Library – 180sqm (GFA)
- Wellness Centre – 225sqm (GFA)

Option 2 (FSR 1.5:1)

- Office and Meeting – 5,796sqm (GFA)
- Café – 360sqm (GFA)
- Library – 270sqm (GFA)
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EVOLUTION OF INDUSTRIAL LAND TO BUSINESS PARK

Over the past number of decades, industrial land has transitioned from accommodating warehousing and light manufacturing uses to include office uses in greater proportions. On what was once industrial land which contained warehousing and manufacturing, there has been a transition to accommodate office type uses in the form of business parks. An example of this is Macquarie Park.

Over the past 30 years, Macquarie Park has developed rapidly from market gardens into a major employment hub. One of the key factors which drove development in the initial stages was its close proximity to the professional labour market located in Sydney's northern beaches and inner northern suburbs. A secondary driver was the transport links to service markets in Chatswood, North Sydney and the Sydney CBD.

It was during the 1990s that the area developed as home to various multinational corporations. Over the subsequent decade, the amount of warehouse and distribution occupiers decreased and office occupiers came to prominence. Over 200 hectares of industrial land has been rezoned in the last two decades to create Macquarie Business Park.

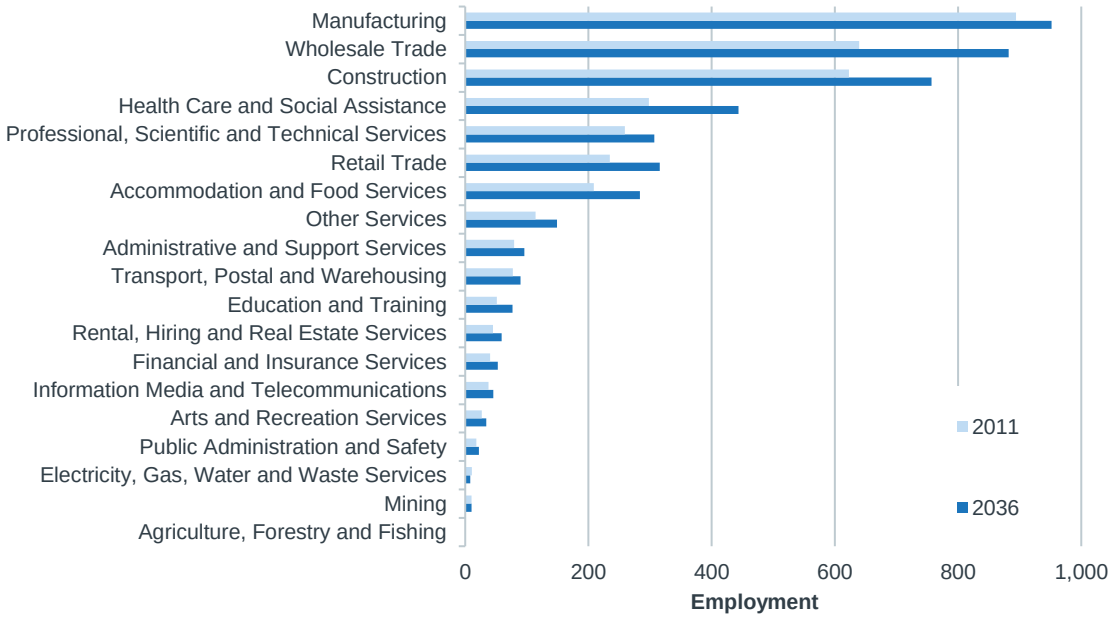
As the proportion of office space provided in business parks increases and further to their location outside or on the fringe of the city, there is a growing need to provide a greater range of amenity for workers. This includes, inter alia, shops, restaurants, childcare centres, medical services, retail facilities and recreational space as well as housing in close proximity.

Business parks are beginning to resemble a CBD in many ways, combining a retail offer of shops, restaurants, banks and travel agencies as well as a recreational offer of gyms, swimming pool and playing fields. The availability of housing options in close proximity to accommodate the worker population is also an important factor.

FUTURE EMPLOYMENT GROWTH

Employment projections for the Precinct indicate strong growth from a number of key industries from 2011 to 2036. The industries of education and training (+49%), health care and social assistance (+49%), wholesale trade (38%) and accommodation and food services (+36%) are projected to experience strong growth. Growth in the abovementioned industries is in line with national trends whereby industries which are population driven are on the rise.

Figure ES.1: Warriewood Valley Employment Precinct



Source: BTS (2014)

The key growth industries are largely population driven and local business driven. Government expenditure drives growth in industries such as health care and social assistance, education and training, which are in turn

underpinned by population growth and need. Typically these growth industries do not require as much industrial-type floorspace. As the face and nature of employment change, so too do the requirements for floorspace to accommodate future employment.

The value of the planned investment and potential job growth is significant, not just in economic terms, but in social and community terms as well. Ensuring that there is sufficient land to accommodate the industries of employment growth is critical. Equally, it is essential that planned land and floorspace match the requirements of those industries of growth. As such, suitable planning considerations that maximise the potential future economic benefits will be equally important as achieving them.

IMPLICATIONS FOR FLOORSPACE

The key growth industries are largely population driven and local business driven. Government expenditure drives growth in industries such as health care and social assistance, education and training, which are in turn underpinned by population growth and need. Typically these growth industries do not require as much industrial-type floorspace. As a consequence, floorspace demand in business zones is projected to outstrip that in industrial precincts.

As the face and nature of employment change, so too do the requirements for floorspace to accommodate future employment. Although industrial lands play an important role in generating lower and semi-skilled jobs, structural changes in the economy have witnessed business consolidation and contraction as well as changing business models. These changes have in many instances meant that the nature of floorspace required has also changed, e.g. in some cases greater office context may be required and in other cases a reduction in office content.

Large clusters of industrial lands with good access and good buffer from sensitive land uses, are generally better able to mitigate against vacancy risk. Desirable characteristics of these industrial precincts underpin overall market appeal which is critical for the securing of replacement occupiers to occupy vacated space. By contrast, fragmented and 'orphaned' industrial precincts/sites can struggle to attract new occupiers if current occupiers vacant. This is due to challenges with access and land use conflicts.

ECONOMIC IMPACT ASSESSMENT

The modelling conducted for this study indicates that the proposed redevelopment will make a significant contribution to the Pittwater LGA economy through its construction phase and the ongoing activities of the redeveloped Site.

The construction of development Option 1 is estimated to provide the following economic impacts:

- Output of $35.7 million (including $14.7 million directly injected into the economy).
- A $15.5 million contribution to Gross Regional Product (GRP) (including $4.6 million in direct impacts).
- Wages and salaries of $8.4 million (including $2.3 million paid to labour directly associated with the construction activity).
- FTE employment of 112 positions (including 28 direct FTE jobs associated with construction activity).

The construction of development Option 2 is estimated to deliver the following economic impacts:

- Output of $52.0 million (including $21.5 million directly injected into the economy).
- A $22.6 million contribution to GRP (including $6.7 million in direct impacts).
- Wages and salaries of $12.3 million (including $3.4 million paid to labour directly associated with the construction activity).
- FTE employment of 163 positions (including 40 direct FTE jobs associated with construction activity).

Once the redevelopment is completed and fully operational, the Site will continue to provide a strong ongoing contribution to the local economy. When fully developed and operational, the redeveloped Site is estimated to support on an ongoing annual basis:

Under redevelopment Option 1 the potential economic activity supported by the subject Site increases to:

- Output of $237.2 million (including $92.5 million directly injected into the economy).
- A $128.7 million contribution to GRP (including $48.5 million in direct impacts).
- Wages and salaries of $68.4 million (including $24.1 million paid to labour as a result of direct impacts).
- FTE employment of 908 positions (including 286 direct FTE jobs).

Under redevelopment Option 2 the potential economic activity supported by the subject Site increases to:

- Output of $342.2 million (including $133.6 million directly injected into the economy).
- A $185.8 million contribution to GRP (including $70.1 million in direct impacts).
- Wages and salaries of $100.0 million (including $36.1 million paid to labour as a result of direct impacts).
- FTE employment of 1,312 positions (including 416 direct FTE jobs).

The redevelopment project represents a significant development for the LGA. The proposed development has been identified as providing significant economic benefits both during construction and once fully operational.

Responding to Industry Changing Floorspace Requirements

Owing to structural changes and economic trends in the pharmaceutical industry there are implications to floorpsace requirements for their facilities.

The Proposal will facilitate the development of floorspace that not only responds to the changing requirements of the pharmaceutical industry (by providing contemporary office floorspace and amenties) but also responds to Pittwater's key industries of growth.

The Proposal will facilitate an intensification of employment uses in the Precinct, ensuring that the Precinct can contribute meaningfully to the Pittwater economy.

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1. INTRODUCTION

1.1 BACKGROUND AND PROJECT OBJECTIVE

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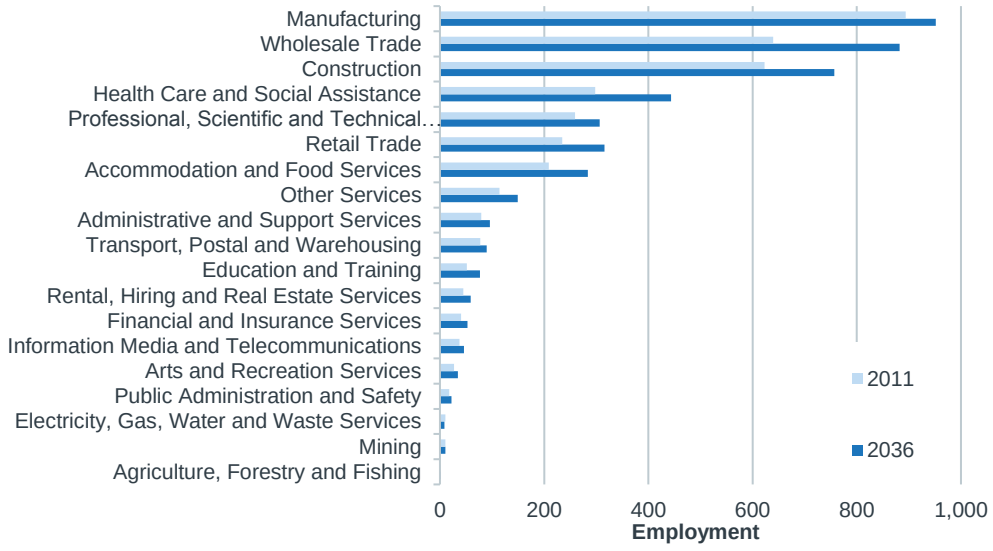

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1.3 THE PURPOSE AND STRUCTURE OF THE STUDY

AEC is engaged by Blackmores to prepare an Economic Impact Assessment (EIA) to analyse the economic impacts likely to result from the proposed planning controls amendments and subsequent redevelopment of the Site (to Option 1 or Option 2). The economic impacts that could result from a redevelopment of the Site are analysed in the context of the proposed development options.

The purpose of the EIA is to consider whether the direct economic impacts of the proposed planning proposal and development options are net positive compared to the existing uses. An economic impact that affects the level of economic or social activity generated in a defined area can be either positive or negative. The assessment of likely impacts resulting from a particular development proposal allows for the identification, prediction and where possible quantification, of impacts as either likely benefits or negative impacts.

The EIA has been structured in the following chapters.

Chapter 2 analyses key State and local government policies as are relevant.

Chapter 3 considers Pittwater's historic and future growth expectations, the key industries likely to grow in the future and the evolution of industrial land.

Chapter 4 reviews the Warriewood Valley Precinct and how employment in the precinct has transitioned over time.

Chapter 5 assesses the economic impacts of the proposed development by investigating two scenarios, these include:

- The Base Case: the economic impacts of the Site under existing planning controls (i.e. no change to planning controls).
- Proposal Case: this scenario assumes that the Site's planning controls are amended and it is redeveloped in the manner as proposed by the two development options.

Chapter 6 translates the key findings from Chapters 2 to 5 and applies them in the assessment of the development options against policy considerations.

2. PLANNING AND POLICY CONTEXT

2.1 STATE PLANNING POLICY

There are a number of strategic policy documents which relate to Pittwater LGA. A review of the NSW policy framework as relevant to the Precinct is provided below.

2.1.1 A Plan for Growing Sydney

A Plan for Growing Sydney (DP&E, 2014) (the Plan) sets the strategic direction for Sydney towards 2031. The overarching vision is that by 2031, Sydney will be "a strong global city, a great place to live". The Plan is built around four key goals:

- Goal 1: A competitive economy with world-class services and transport.
- Goal 2: A city of housing choice with homes that meet our needs and lifestyles.
- Goal 3: A great place to live with communities that are strong, health and well connected.
- Goal 4: A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.

Goal 1: A competitive economy with world-class services and transport

Of particular relevance to this Study is Goal 1 "a competitive economy with world class-services and transport". One of the key directions/actions of this goal is *Direction 1.9: Support priority economic sectors*. The Plan states that the growth of priority industries (i.e. professional services etc.) has to be supported by planning for their land use needs. Benefits can flow from the emergence of industry clusters in cost-effective locations.

Another key action associated with this goal is *Support Key Industrial Precincts with Appropriate Planning Controls (Action 1.9.2).*

This action sets out the *Industrial Lands Strategic Assessment Checklist* to guide the assessment of proposed rezonings of industrial lands. It poses questions about whether the site is near or within direct access to key economic infrastructure, how it contributes to a significant industry cluster, and how the proposed rezoning would impact on industrial land stocks and employment objectives in each subregion. The Checklist allows for evidence-based decisions and aims to prevent encroachment on important industrial sites.

The Plan states the Government will:

- Undertake an analysis of Sydney's stock of industrial zoned land to identify key industrial Precincts and use the findings to:
    - Determine where improved planning controls are required to better protect industrial land from conversion to other uses;
    - Identify where improved and innovative planning controls will allow for the ongoing evolution of industrial activities to more intensive commercial activities; and
    - Update the Industrial Lands Strategic Assessment Checklist.
- Assess new proposals to convert existing industrial zoned land to other uses under the Industrial Lands Strategic Assessment.

2.1.2 Draft Metropolitan Strategy for Sydney 2031 (2013)

The Industrial Lands Strategic Assessment Checklist sits within the previous Draft Metropolitan Strategy for Sydney 2031 (NSW DP&I, 2013). The checklist provides some guidance for assessing the impact of a rezoning on the subregional or regional supply of employment land. The checklist is set out below.

- Is the proposed rezoning consistent with State and/or council strategies on the future role of industrial lands?

- Is the site: near or within direct access to key economic infrastructure; and, contributing to a significant industry cluster?
- How would the proposed rezoning impact the industrial land stocks in the subregion or region and the ability to meet future demand for industrial land activity?
- How would the proposed rezoning impact on the achievement of the subregion/region and LGA employment capacity targets and employment objectives?
- Is there a compelling argument that the industrial land cannot be used for an industrial purpose now or in the foreseeable future and what opportunities may exist to redevelop the land to support new forms of industrial land uses such as high-tech or creative industries?
- Is the site critical to meeting the need for land for an alternative purpose identified in other NSW Government or endorsed council planning strategies?

2.1.3 Employment Lands Development Program (2015)

The Employment Lands Development Program (2015) provides information on total employment lands for the Sydney Region.

The stock of employment lands below compares total stock, as well as the split between developed and undeveloped employment lands between January 2013, January 2014 and January 2015 by the six metropolitan subregions.

The table demonstrates that the North Subregion (where the Precinct is located) contains a total of 566.8ha of employment lands. As a proportion of the North subregion's total industrial lands, Pittwater LGA accounts for approximately 7.6% or 43.2ha (DP&E, 2015). Over 2014-15 period, the total stock of industrial lands in the North Subregion increased by 64.3ha or 12.8%.

Subregion	January 2013			January 2014			January 2015			Net Change (2014-15)
	Undeveloped	Developed	Total	Undeveloped	Developed	Total	Undeveloped	Developed	Total	
Central	110.9	1,237.9	1,348.8	35.6	1,262.4	1,297.9	61.3	1,383.1	1,444.4	146.5
North	36.4	485.4	521.9	24.3	478.2	502.5	43.0	523.8	566.8	64.3
South	141.1	761.5	902.6	73.0	823.2	896.2	112.5	785.3	897.8	1.6
South West	615.0	2,557.7	3,172.7	653.0	2,625.1	3,278.2	710.9	2,685.6	3,396.6	118.4
West	733.5	1,058.1	1,791.6	707.1	1,030.6	1,737.7	721.5	1,065.2	1,786.7	49.0
West Central	1,497.0	3,893.3	5,390.2	1,366.2	4,025.3	5,391.5	1,380.1	4,075.8	5,455.9	64.3
Sydney Region	3,133.9	9,994.0	13,127.8	2,859.3	10,244.8	13,104.1	3,029.4	10,518.7	13,548.2	444.1

Source: DP&E (2015)

2.1.4 Section 117 Direction

Under Section 117(2) (S117(2)) of the Environmental Planning and Assessment Act 1979 the Minister for Planning and Infrastructure provides directions to planning authorities regarding proposals lodged with the DP&E.

Of relevance to this EIA is Section 1.1 Business and Industrial Zones which stipulates the objectives of S117(2) which are as follows:

- Encourage employment growth in suitable locations.
- Protect employment land in business and industrial zones.
- Support the viability of identified strategic centres.

Given that S117 (2) applies in this case, Council must:

- Give effect to the objectives of this direction.
- Retain the areas and locations of existing business and industrial zones.
- Not reduce the total potential floor space area for employment uses and related public services in business zones.
- Not reduce the total potential floor space area for industrial uses in industrial zones.
- Ensure that proposed new employment areas are in accordance with a strategy that is approved by the Director-General of the Department of Planning.

This document also states the following:

(5) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:

(a) justified by a strategy which:

(i) gives consideration to the objective of this direction, and

(ii) identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and

(iii) is approved by the Director-General of the Department of Planning, or

(b) justified by a study (prepared in support of the planning proposal) which gives consideration to the objective of this direction, or

(c) in accordance with the relevant Regional Strategy or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or

(d) of minor significance.

2.2 LOCAL PLANNING POLICY

2.2.1 Pittwater Local Environmental Plan (2014)

In accordance with the Pittwater Local Environmental Plan (2014) the Subject Site is zoned IN2 Light Industrial. The IN2 zoned has the following objectives:

- To provide a wide range of light industrial, warehouse and related land uses.
- To encourage employment opportunities and to support the viability of centres.
- To minimise any adverse effect of industry on other land uses.
- To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
- To support and protect industrial land for industrial uses.
- To enable a range of compatible services, community and recreation uses.
- To accommodate uses that, because of demonstrated special building or site requirements or operational characteristics, cannot be or are inappropriate to be located in other zones.
- To provide healthy, attractive, functional and safe light industrial areas.

In accordance with the Plan the following uses are permitted with consent: animal boarding or training establishments, boat building and repair facilities, crematoria, depots, environmental protection works, freight transport facilities, funeral homes, garden centres, hardware and building supplies, horticulture, industrial retail outlets, industrial training facilities, landscaping materials supplies, light industries, mortuaries, neighbourhood

shops, places of public worship, recreation facilities (indoor), roads, service stations, signage, storage premises, take away food and drink premises, timber yards, transport depots, truck depots, vehicle body repair workshops, vehicle repair stations, vehicle sales or hire premises, warehouse or distribution centres, waste disposal facilities, water supply systems and wholesale supplies.

In accordance with the Plan the Subject Site has an FSR of 1:1 and a maximum building height controls of 11m.

3. HISTORICAL AND FUTURE GROWTH OF PITTWATER

3.1 MACRO-TRENDS AND DRIVERS

A broad spectrum of factors influences industrial activity in Warriewood Valley and Pittwater LGA. While some of these are internal factors over which the local area have control, many are not. Significant influences on industrial activity come from outcomes at the broader global and national levels. Understanding the broader context in which Pittwater's industrial sector operates is essential in understanding future demand for industrial lands, specifically for the Site.

The following macro-economic factors have significant implications for industrial activity and likely influence the demand for local industrial land:

- **Globalisation and Globalised Competition:** Increased global interconnectedness, particularly over the last two decades, has facilitated the integration of markets and supply chains on a global level. As Australian businesses benefit from branching out into new markets, the vulnerability of local business to global economic trends and international competition has also increased.

  Local businesses involved in manufacturing and processing of goods face fierce competition on the global market. Cheap imports (produced with significantly lower wage costs and often very large economies of scale) have been further supported by low tariffs and the recent high value of the Australian dollar.

- **Productivity:** Productivity gains come in several forms, most notably those associated with technological growth, capital investment, improved workforce skills and effective industrial relations. Productivity is inherently associated with globalisation and exchange rates as businesses capture productivity gains by utilising global supply chains. It accordingly plays a key role in determining profit margins and the ability of businesses to engage in industrial activity in Australia.

  While some businesses find productivity gains by offshoring production, others gain from the competitive advantage Australia has to offer through higher workforce skills, state of the art technology, relatively stable industrial relations (and traditionally low sovereign risk) and ease of establishing businesses making capital investment more feasible. However, generally for Australia, slow productivity growth (ABS, 2013) across the nation in recent times has placed pressure on the industrial sector.

Australian Industrial Sector Overview

Australian industry is undergoing the most significant transition since its birth over 100 years ago. Embracing this transition at a local level requires firstly the need to identify national trends which will likely shape the demand for specific types of industrial land.

Preparing for and anticipating national influences is an important part of economic development and land planning. Businesses which continue to undertake industrial activity in Australia must do so by leveraging competitive advantages. These are often high value-added operations, which utilise advanced technology and draw from Australia's relatively large pool of skilled labour.

ABS (2013) data highlight the manufacturing sector continues to invest more than any sector in Australia towards Research and Development (R&D) ($4.4 billion or 24% of total business expenditure on R&D in 2011-12). Such large investment into R&D has given the industry access to a high level of technology, which provides a solid base for the manufacturing sector to transition towards more advanced technologies. The transformation of the manufacturing sector has implications on how floorspace is used and consequently on an organisation's accommodation requirements.

3.2 EVOLUTION OF INDUSTRIAL LANDS TO BUSINESS PARK

Over the past number of decades, industrial land has transitioned from accommodating warehousing and light manufacturing uses to include office uses in greater proportions. On what was once industrial land which contained

warehousing and manufacturing, there has been a transition to accommodate office type uses in the form of business parks. An example of this is Macquarie Park.

3.2.1 Evolution of Macquarie Park

In the 1970's Macquarie Park was one of the outlying market garden areas serving Sydney. Under the County of Cumberland Scheme (1951) the area was protected from development by a 'green belt' zone. This zone comprised land surrounding the Sydney metropolitan area which was designated for farming and recreational use.

In 1963 the NSW Government resumed the land to establish Macquarie University (Sydney's third university at the time). In addition to the university, land was rezoned for residential and industrial development. This was done in recognition of the integral role that universities can play in the development of industry clusters. Additionally, this was consistent with a common United States practice where industry sponsors university courses.

Over the past 30 years, Macquarie Park has developed rapidly from market gardens into a major employment hub. One of the key factors which drove development in the initial stages was its close proximity to the professional labour market located in Sydney's northern beaches and inner northern suburbs. A secondary driver was the transport links to service markets in Chatswood, North Sydney and the Sydney CBD.

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Over 200 hectares of industrial land has been rezoned in the last two decades to create Macquarie Business Park.

3.2.2 What does this mean for Business Parks?

As the proportion of office space provided in business parks increases and further to their location outside or on the fringe of the city, there is a growing need to provide a greater range of amenity for workers. This includes, inter alia, shops, restaurants, childcare centres, medical services, retail facilities and recreational space as well as housing in close proximity.

Business parks are beginning to resemble a CBD in many ways, combining a retail offer of shops, restaurants, banks and travel agencies as well as a recreational offer of gyms, swimming pool and playing fields. The availability of housing options in close proximity to accommodate the worker population is also an important factor.

Occupier and Tenant Requirements

As businesses continue to evolve in order to be competitive in the face of global and national pressures, the primary focus for accommodation selection is to reduce cost and increase efficiencies.

Businesses recognise that in order to keep their cost base lean, they need to ensure their largest cost element (i.e. employees) is effectively managed. Ensuring that employees are satisfied and happy in their working environment will not only assist staff retention rates but improve staff productivity levels. On this basis, worker amenity and employee wellbeing are critical factors that have come to the fore in recent years.

Worker Amenity

"Worker amenity" demanded by industry is over and above statutory requirements, more akin to those which are deemed social infrastructure items, i.e. childcare, gyms, public recreation space, etc.

Annual office tenant surveys are instrumental in identifying trends in tenants' leasing decision making with recent surveys indicating that overwhelmingly, occupier needs are focused on cost-cutting and achieving workspace efficiencies (Colliers International, 2012). That said, there is increasing importance placed on location selection for attracting and retaining staff and with a focus on staff health and employee wellbeing.

Employee Wellbeing

In addition to worker amenity, social research shows that greenspace in business parks is no less important for amenity and wellbeing (Gilchrist, Brown and Montarzino, 2014). The use of greenspace and visual access to them supports employee wellbeing, thus positively related to job performance and productivity.

Corporations are increasingly placing more importance on employee wellbeing. Employee satisfaction and wellbeing are seen as key factors in workplace productivity and retention of staff. This in turn has shaped how businesses select locations and configure their work space (Colliers International, 2012).

Proximity to Housing

A number of key factors influence residential location choice, one of these is proximity to work. Research suggests that the time it takes to get to work is just as important as the job itself (Oxford Properties and Environics Research Group, 2013):

- 76% of respondents wanted a reasonable commute to the office. The majority of those surveyed said a commute time of less than 30 minutes was the appropriate travel time.
- 50% of respondents considered commute time to be the No. 1 factor in choosing one employer over another.
- The survey also found that once at the office, workers sought space that allowed them to work collaboratively with other employees, is close to shops and other amenities and is energy-efficient.

3.3 TRANSITION OF EMPLOYMENT IN PITTWATER LGA

3.3.1 Employment by Industry Profile

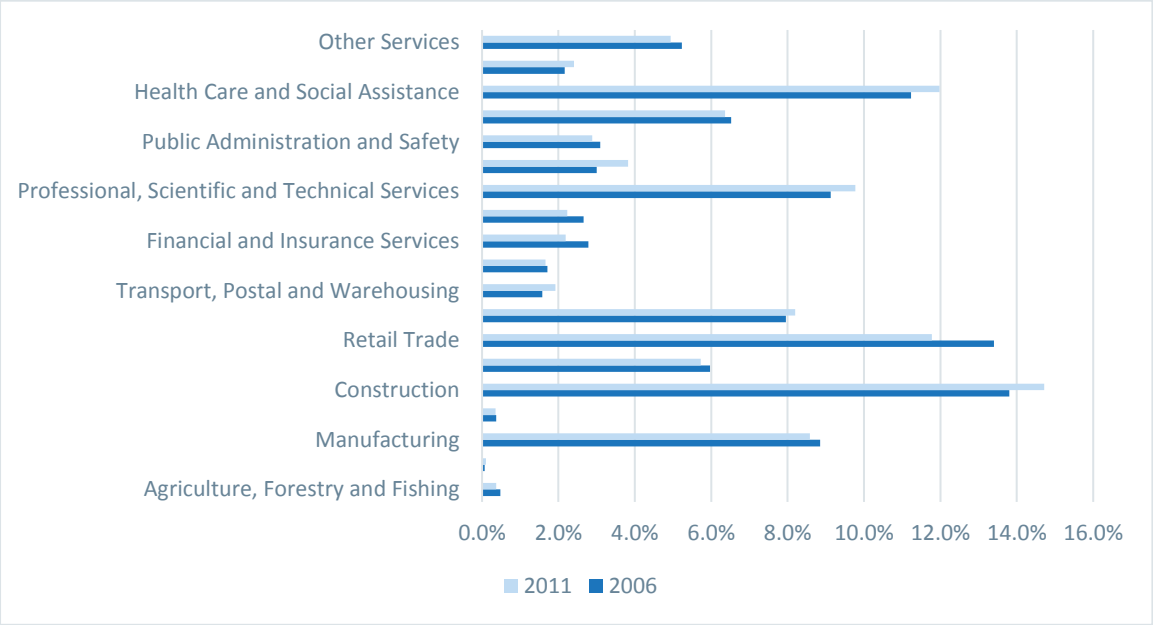
Key industries of local employment in Pittwater in 2011 were construction (14.7%), health care and social assistance (12%), retail trade (11.8%), professional, scientific and technical services (9.8%) and manufacturing (8.6%).

Figure 3.1 depicts change in employment by industry in Pittwater LGA over the 2006-2011 period.

The growth in healthcare, professional and technical services and other service based sectors shows the growth of Pittwater as a large, diversified service hub. It also shows the growing sophistication of the Pittwater economy, representing an on-going transition from its industrial heritage to a modern, more knowledge-based, service-based economy that leverages technology and knowledge to increase productivity.

The decreases in manufacturing and wholesale trade are likely linked to numerous on-going, macro-economic shifts, which is seeing industrial employment (particularly traditional industrial activity) decrease across Australia over time.

Figure 3.1: Employment by Industry, Pittwater LGA (2006-2011)



Source: BTS (2014)

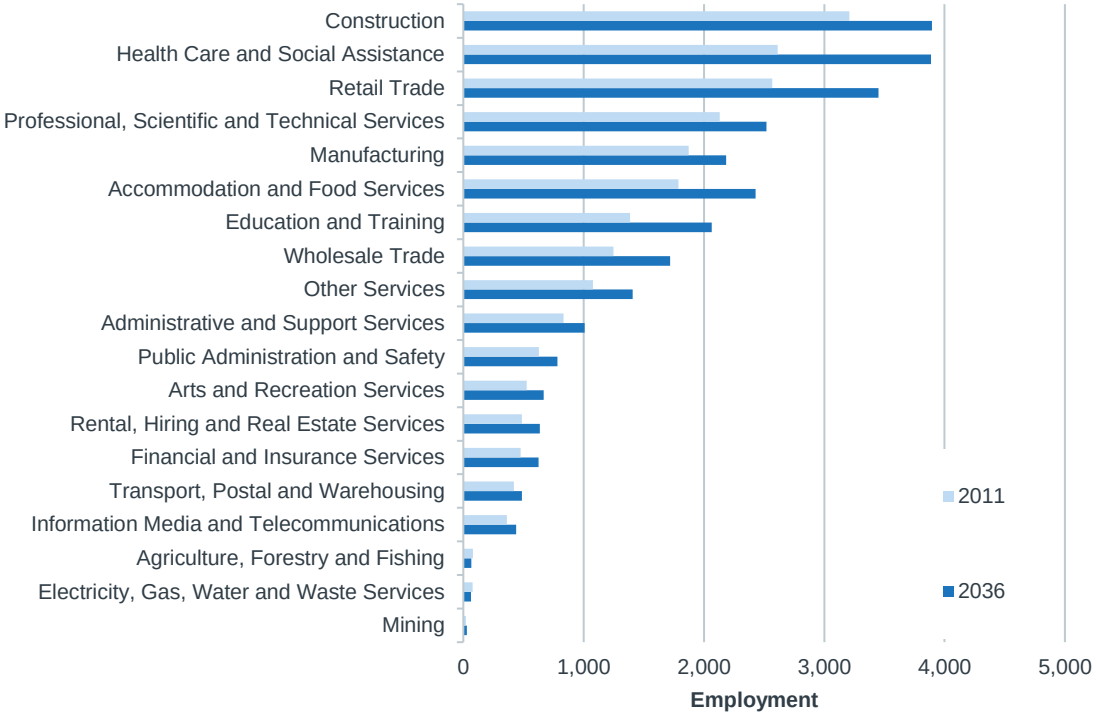
Since 2006, both health care and social assistance and public administration and safety have increased their share of total employment (and increased numbers of employees), while the manufacturing sector has reduced their share of total employment.

3.3.2 Employment Projections by Industry

Looking forward, employment growth in Pittwater LGA will be driven by the following key industries:

- Health Care and Social Assistance (+1,275 or 48.8%);
- Retail Trade (+884 or 34.4%);
- Education and Training (+677 or 48.8%);
- Accommodation and Food Services (+641 or 35.8%); and
- Wholesale Trade (+472 or 37.8%).

Figure 3.2: Employment Projections by Industry, Pittwater LGA (2006-2011)



Source: BTS (2014)

3.4 IMPLICATIONS FOR FLOORSPACE

As depicted in Figure 3.1, the key growth industries are largely population driven and local business driven. Government expenditure drives growth in industries such as health care and social assistance, education and training, which are in turn underpinned by population growth and need. Typically these growth industries do not require as much industrial-type floorspace. As a consequence, floorspace demand in business zones is projected to outstrip that in industrial precincts.

As the face and nature of employment change, so too do the requirements for floorspace to accommodate future employment. Although industrial lands play an important role in generating lower and semi-skilled jobs, structural changes in the economy have witnessed business consolidation and contraction as well as changing business models. These changes have in many instances meant that the nature of floorspace required has also changed, e.g. in some cases greater office context may be required and in other cases a reduction in office content.

Large clusters of industrial lands with good access and good buffer from sensitive land uses, are generally better able to mitigate against vacancy risk. Desirable characteristics of these industrial precincts underpin overall market appeal which is critical for the securing of replacement occupiers to occupy vacated space. By contrast, fragmented and 'orphaned' industrial precincts/sites can struggle to attract new occupiers if current occupiers vacant. This is due to challenges with access and land use conflicts.

3.5 NEED FOR THE PROPOSAL

The profile of Pittwater LGA's employment is changing. Since 2006, in healthcare, professional and technical services and other service based sectors have increased their share of total employment (and increased number of employees) while industries like manufacturing and wholesale trade have reduced their share of total employment.

Furthermore, employment projections show that the industries most likely to grow overtime include employment health care and social assistance (+1,275 or 48.8%), retail trade (+884 or 34.4%), education and training (+677 or 48.8%), accommodation and food services (+641 or 35.8%) and wholesale trade (+472 or 37.8%). This demonstrates that the nature and type of employment in Pittwater is changing.

As such, many industrial areas in a state of transition and will transform from providing purely industrial uses to accommodate a broader mix of business uses including retail, entertainment and leisure uses etc. Allowing for a mix of uses to occur in industrial areas allows it to become self-sustaining. Facilitating a broader mix commercial uses can ensures there are local jobs to support a vibrant precinct.

The change in zone to B7 Business Park and proposed development options will assist in meeting the changing employment needs of the Pittwater LGA by providing a range of uses including: industrial, commercial, retail and community uses.

4. WARRIEWOOD VALLEY PRECINCT TODAY

4.1 LOCATION

4.1.1 The Precinct

Warriewood Valley, located in the southern portion of the Pittwater LGA, is bordered by the Pittwater escarpment in the west, Warriewood Wetlands to the south, Warriewood Sewerage Treatment Plant (STP) and Warriewood itself to the east, and Mona Vale to the north. The Warriewood Valley Release Area (the Release Area) is around 190 hectares. The Release Area includes 27 hectares of industrial/commercial land and associated community facilities and infrastructure ("the Precinct"). Industrial and commercial developments adjoin the existing light industrial and office business area of Warriewood.

Businesses in the Precinct range from warehousing, wholesalers (e.g. MBT Shoes, Sydney Commercial Kitchens, Taymar International Pty Ltd) construction/building equipment suppliers (e.g. Comcivil Pty Ltd), transport/logistics (e.g. ASN Transfers) and retail (e.g. Chilli Surfboards).

4.1.2 The Site and Blackmores Owned Facilities

The Site (owned by Blackmores) is located at 15 Jubilee Avenue, Warriewood which is situated in the industrial section of the "Warriewood Valley Release Area" opposite the existing Blackmores processing facility at 20 Jubilee Avenue (located in the business park area), which itself has an area of 2.517ha. The Site has an area of approximately 4,560m with a frontage of 101m to Jubilee Avenue, and is currently a vacant lot.

Blackmores are a leading Australian natural health company, founded over 80 years ago by naturopath Maurice Blackmore. The company has been listed on the Australian Stock Exchange since 1985 and is one of the country's best known and most trusted brands in the field.

Internationally, the company employs more than 800 staff, and has its head facility located in the Pittwater LGA at 20 Jubilee Avenue, Warriewood (opposite the Site). This is known as the "Blackmores Campus", which was officially opened in 2009 although the organisation has been operating on the northern beaches since 1970's. The campus, which covers more than 25,000m, employs more than 441 employees and ships more than 4,800 orders to retail customers every week. Of 441 employees, 252 (78%) live on the Northern Beaches and approximately 60% are linked to Production and Warehouse operations.

The campus' on-site production and distribution facility allows for a streamlined process, ensuring an efficient system of handling, storing, picking and dispatching of goods. The facility is a modern and sustainable building and includes a number of features to minimise environmental impact, drive operational efficiencies, and create a healthy and enjoyable workplace.

4.2 EMPLOYMENT PROFILE

This section considers the employment profile of workers in the Warriewood Valley Precinct by analysing types of employment categorised under Australian and New Zealand Standard Industrial Classification (ANZSIC).

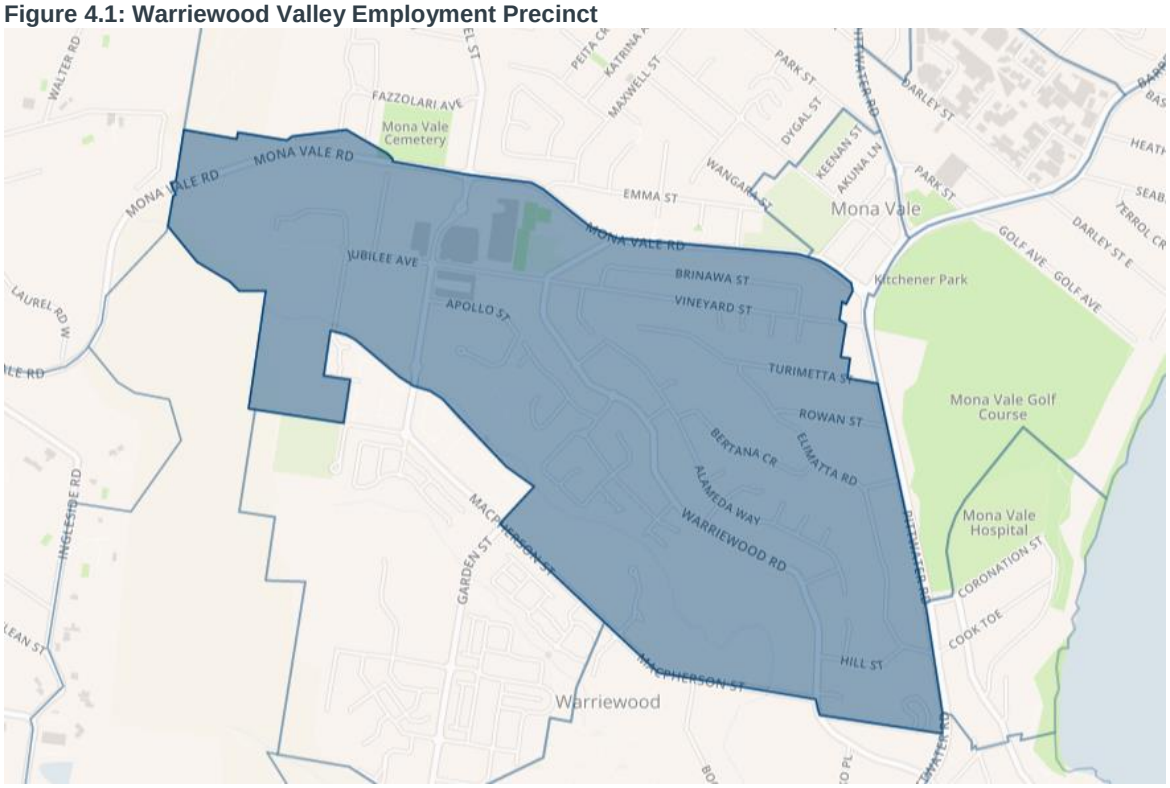
The ANZSIC has been developed jointly by the Australian Bureau of Statistics and Statistics New Zealand to improve the comparability of industry statistics between the two countries and the rest of the world. The ANZSIC is a hierarchical classification of industry with four levels, namely Divisions (the broadest level), Subdivisions, Groups and Classes (the finest level). At the Divisional level (referred to as 1-digit ANZSIC), the main purpose is to provide a limited number of categories which provide a broad overall picture of the economy. The Subdivision (2-digit ANZSIC), Group (3-digit ANZSIC) and Class (4-digit ANZSIC) levels provide increasingly detailed dissections of these categories to enable the compilation of more specific and detailed statistics (ABS, 2006).

In order to better understand employment activity occurring in the Warriewood Valley Precinct, Australian Bureau of Statistics Census data (ABS, 2012a) and Bureau of Transport Statistics data (BTS, 2014) was examined using statistical geographic boundaries of Transport Zone (TZ) area.

These boundaries do not map exactly to the boundary of the Warriewood Valley Precinct however, provide a greater study catchment area to assist in the analysis.

The Warriewood Valley Precinct is comprised of one TZ (2031) and is graphically represented in **Figure 4.1.**

Figure 4.1: Warriewood Valley Employment Precinct



Source: BTS (2014)

Table 4.1: Warriewood Valley Employment by Industry Profile Overview

Indicator	Outcome
Total Employment (Number)	
2011	3,669
2006	2,774
Key Sectors (2011, % of Total Employment)	
Manufacturing	24.4%
Wholesale Trade	17.4%
Construction	17.0%
Professional, Scientific and Technical Services	7.1%
Retail Trade	6.4%

Source: BTS (2014)

Table 4.2: Warriewood Valley Employment by Occupation Overview

Indicator	Outcome
Key Occupations (2011, % of total)	
Technicians and Trades Workers	19.3%
Managers	19.0%
Professionals	17.2%

Source: BTS (2014)

In 2011, the Precinct contributed to 16.8% of total employment in the Pittwater LGA. While manufacturing in the Precinct makes the highest contribution to the Precinct's total employment (24.4%), the broader LGA has approximately 8.6% of its employment in manufacturing.

Manufacturing jobs in the Precinct are predominantly in the sub-sectors of basic chemical and chemical product manufacturing, transport equipment manufacturing and machinery and equipment manufacturing.

4.2.1 Employment by Industry

In 2011, the Warriewood Valley Precinct employed 3,669 employees. The top five industries of employment were: manufacturing (24.4%), wholesale trade (17.4%), construction (17%), professional, scientific and technical services (7.1%) and retail trade (6.4%).

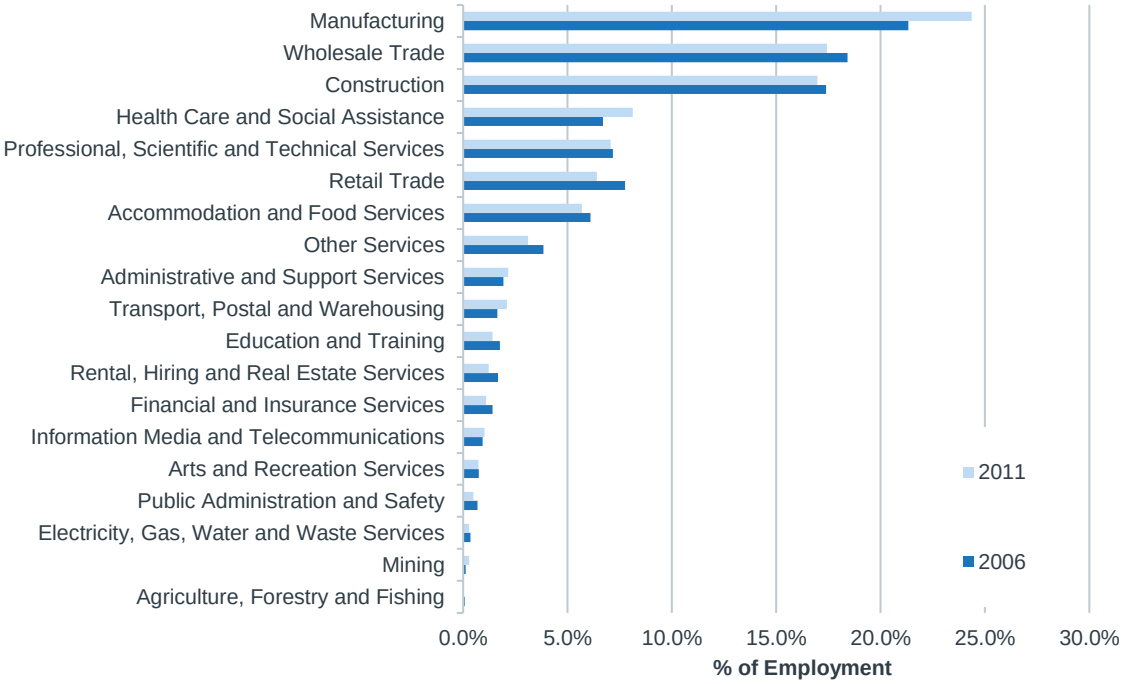
Table 4.3: Employment by Industry, 2006-2011 (19 Sector – 1 Digit ANZSIC)

Industry	Warriewood Valley			Pittwater LGA		
	2006	2011	Growth (%)	2006	2011	Growth (%)
Agriculture, Forestry and Fishing	2	1	-50%	87	81	-6.8%
Mining	3	10	217%	12	22	81.4%
Manufacturing	592	894	51%	1,592	1,872	17.6%
Electricity, Gas, Water and Waste Services	10	11	9%	67	78	16.4%
Construction	482	623	29%	2,483	3,209	29.2%
Wholesale Trade	511	639	25%	1,073	1,248	16.2%
Retail Trade	215	235	9%	2,410	2,567	6.5%
Accommodation and Food Services	169	209	23%	1,431	1,788	24.9%
Transport, Postal and Warehousing	45	77	70%	284	420	47.7%
Information Media and Telecommunications	26	38	45%	307	362	17.9%
Financial and Insurance Services	39	40	4%	500	477	-4.7%
Rental, Hiring and Real Estate Services	46	45	-2%	478	487	1.8%
Professional, Scientific and Technical Services	199	259	30%	1,642	2,132	29.8%
Administrative and Support Services	53	79	49%	540	834	54.4%
Public Administration and Safety	19	18	-6%	556	628	13.0%
Education and Training	49	51	6%	1,173	1,387	18.2%
Health Care and Social Assistance	186	298	60%	2,020	2,613	29.3%
Arts and Recreation Services	21	27	31%	390	525	34.8%
Other Services	107	114	7%	941	1,077	14.4%
Total	2,774	3,669	32%	17,988	21,806	21.2%

Source: BTS (2014)

Notable proportional increases in employment are observed in transport, postal and warehousing (70%), health care and social assistance (60%), manufacturing (51%) and information media and telecommunications (45%).

Figure 4.2: Employment by Industry, 2006-2011 (19 Sector – 1 Digit ANZSIC)



Source: BTS (2014)

Further disaggregation of the manufacturing industry which represents 50% of employment (refer to **Table 4.3**) shows that Basic Chemical and Chemical Product Manufacturing represents the highest proportion of Manufacturing at over 13% of manufacturing employment. This is not surprising given Blackmores presence in the Precinct.

Table 4.4: Employment by Industry 2011 (Manufacturing 2-Digit ANZSIC)

Industry	Employment by Industry		Industry % of Total Employment	
	Warriewood Valley	Pittwater LGA	Warriewood Valley	Pittwater LGA
Food Product Manufacturing	21	139	0.6%	0.6%
Beverage and Tobacco Product Manufacturing	0	6	0.0%	0.0%
Textile, Leather, Clothing and Footwear Manufacturing	30	101	0.8%	0.5%
Wood Product Manufacturing	22	68	0.6%	0.3%
Pulp, Paper and Converted Paper Product Manufacturing	0	16	0.0%	0.1%
Printing (including the Reproduction of Recorded Media)	47	110	1.3%	0.5%
Petroleum and Coal Product Manufacturing	5	5	0.1%	0.0%
Basic Chemical and Chemical Product Manufacturing	483	499	13.2%	2.3%
Polymer Product and Rubber Product Manufacturing	32	38	0.9%	0.2%
Non-Metallic Mineral Product Manufacturing	9	33	0.2%	0.1%
Primary Metal and Metal Product Manufacturing	11	30	0.3%	0.1%
Fabricated Metal Product Manufacturing	12	129	0.3%	0.6%
Transport Equipment Manufacturing	21	269	0.6%	1.2%
Machinery and Equipment Manufacturing	149	245	4.1%	1.1%
Furniture and Other Manufacturing	51	184	1.4%	0.8%
Total	894	1,872	24%	9%

Source: BTS (2014)

4.2.1 Journey to Work Analysis

The top 10 LGAs where workers in the Precinct travel are shown in Table 4.5. The Pittwater LGA provides 40.9% of workers to the Precinct followed by Warringah (30.2%). This demonstrates that the Precinct serves a local employment role.

Table 4.5: Journey to Work Analysis

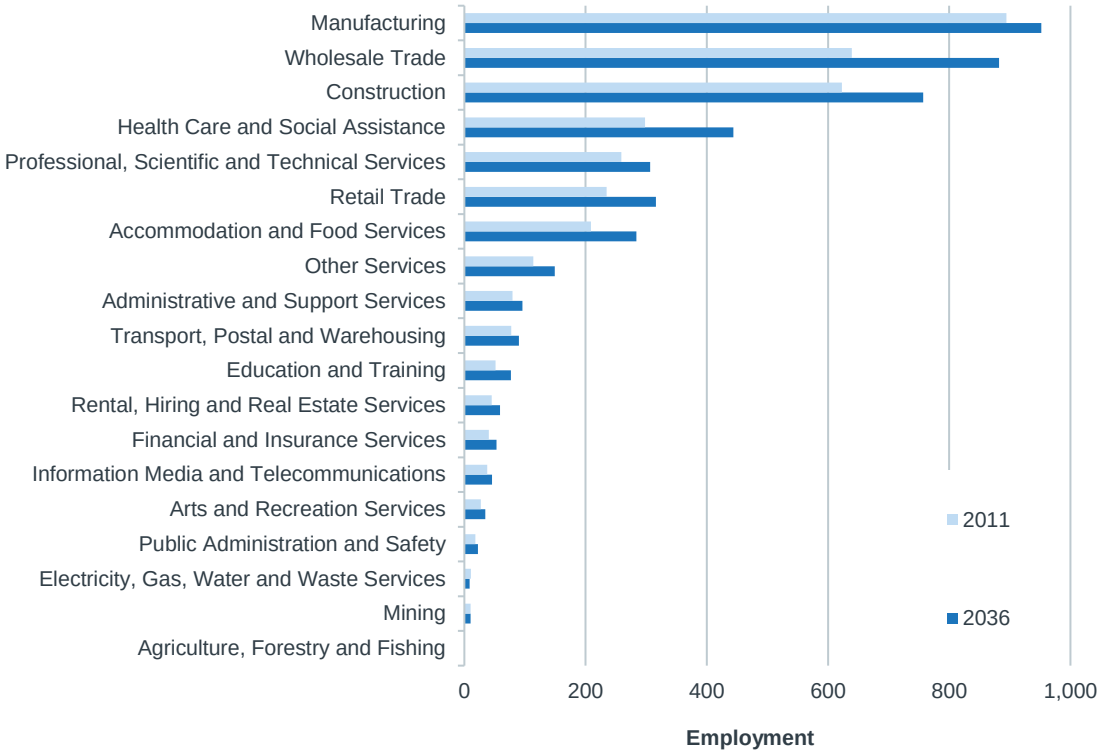
LGA	Workers	% of Workers
Pittwater	1,499	40.9%
Warringah	1,109	30.2%
Manly	118	3.2%
Hornsby	103	2.8%
Ku-ring-gai	91	2.5%
Ryde	56	1.5%
North Sydney	56	1.5%
Parramatta	54	1.5%
Gosford	46	1.2%
Willoughby	43	1.2%
Rest of NSW	459	12.5%
From outside NSW	34	0.9%
Total	3,669	100.0%

Source: BTS (2014)

4.2.2 Employment Projections

Employment projections for the Precinct indicate strong growth from a number of key industries from 2011 to 2036. The industries of Wholesale Trade, Health Care and Social Assistance, Accommodation and Food Services and Education and Training are projected to experience strong growth.

Figure 4.3: Employment Projections by Industry, 2011-2036 (19 Sector – 1 Digit ANZSIC)



Source: BTS (2014)

4.3 INDUSTRY SPECIFIC ECONOMIC TRENDS

Pharmaceutical Industry

Given that Basic Chemical and Chemical Product Manufacturing represents the highest proportion of Manufacturing at over 13% of manufacturing employment, it is necessary to explore trends across the pharmaceutical industry (as the pharmaceutical industry comes under the Basic Chemical and Chemical Product Manufacturing umbrella).

Businesses in Australia's pharmaceutical product manufacturing industry are increasing limiting their involvement to the latter stages of the manufacturing process, i.e. packaging and dispensing. Over the five years through 2014-2015, a number of players have closed down manufacturing plant capacity in favour of locations in China and Singapore. One of the latest closures was GlaxoSmithKline's tablet facility in Boronia, VIC in 2013 (IBISWorld, 2014). Pharmaceutical companies located in the Precinct include: PharmaCare, LINK Healthcare and Blackmores.

The industry in Australia is a net importer of completed product, given the globally competitive industry and cuts to local manufacturing base capacity. As with its global counterparts, the Australian pharmaceutical industry is contending with the fallout associated with the patent cliff, where some of the world's highest selling drugs have lost or are due to lose patent protection.

In the short term, the industry is expected to continue its gradual transformation process, shaped in part by the ongoing rationalisation currently characterising the global pharmaceutical sector. Further regulatory changes will also dominate the local operating environment, as per the new PBS Access and Sustainability Package that will lead to further changes in the PBS and the medicines supply chain. Industry revenue is expected to grow by an annualised 0.8% over the five years through 2020- 21, to reach $7.8 billion as underlying favourable demand variables help offset the effect of further regulatory changes.

As the pharmaceutical industry transforms, so too does the floorspace requirements. An example of this is the Melrose Park Industrial Precinct. The Melrose Park Industrial Precinct is largely made up of pharmaceutical companies, some of these companies have transitioned of the Site (i.e. GlaxoSmithKline).

A Structure Plan and Planning Proposal has been lodged with Council to seek a rezoning of the industrial precinct to a mixed use precinct. Those pharmaceutical businesses remaining in the Precinct (i.e. Pfizer and Reckitt Benckiser) will be housed in new office facilities to suit the changing needs of their respective businesses.

Australian manufacturing is currently under considerable pressure from numerous global factors, which is resulting in employment declining across Australia. These trends are well established and likely to continue.

Specifically for the Precinct, the key industries (i.e. pharmaceutical, related health) are expected to continue to face growing pressures in regards to their competitiveness in Australia. The challenges faced by these industry sectors and the businesses in Precinct specifically will raise the threat of their viability in the precinct into the future and the sustainability of the jobs within this precinct.

Vitamin and Supplement Industry

The Vitamin and Supplement Manufacturing industry has recovered following years of stagnancy during and after the global financial crisis. Over the five years through 2015-16, the industry has steadily grown through increased consumer expenditure on vitamins and supplements, and growing export opportunities. During the economic lows prior to 2010-11, consumers sought cheaper, low value-added alternatives, or stopped taking vitamins and supplements altogether. However, as the economy bounced back and demand conditions improved both at home and abroad, industry revenue has returned to strong growth.

The top two players, Swisse and Blackmores, are Australian owned, with locally made products having a strong reputation both locally and overseas.

Asian demand led to growth in vitamins and dietary supplements in Australia in 2015, with Blackmores attributing positive sales to increasing demand from Asian customers. Furthermore, health and wellness trends continue to drive sales in vitamins and dietary supplements in 2015, with consumers looking to supplement their diet and prevent illness with vitamins and dietary supplements. According to the Australian Institute of Health and Welfare's

2014 health report, more than 90% of Australians do not eat the recommended five servings of vegetables a day, with consumers looking to make up lost nutrients through the consumption of vitamins and dietary supplements.

4.4 NEED FOR THE PROPOSAL

The Site is currently unimproved. Redeveloping the Site to accommodate a traditional industrial manufacturing/warehousing facility does not align with evolving industrial land requirements (as detailed in Chapter 3).

While a large proportion of the Precinct is comprised of businesses in the manufacturing sector, growth in health care and social assistance and information media and telecommunications signals that the Precinct is transforming to include more than typical industrial uses (i.e. manufacturing and warehousing).

As such, many industrial areas in a state of transition and will transform from providing purely industrial uses to accommodate a range of uses i.e. a mix of business including office, retail, entertainment, leisure uses, housing etc.

Allowing for a mix of uses to an industrial area allows it to become more self-sustaining. Facilitating a land use change to allow for a business park use with ensure there are more local jobs to support a vibrant precinct. As traditional manufacturing is on the decline an increasingly off-shored, evolving manufacturing trends can still be accommodated within the local planning framework.

The proposed Planning Proposal will assist in meeting the changing employment needs of the Pittwater LGA as well as meet the requirements of evolving business park trends by ensuring Blackmores can operate in a facility that allows the business to accommodate more office-type functions, in line with its (the business) transition into a higher knowledge-based sector. This transition is in line with the broader pharmaceutical and vitamin supplement manufacturing industry wherein traditional manufacturing functions are in decline in favour of higher technology and knowledge-based functions.

5. ECONOMIC IMPACT ASSESSMENT

After establishing the need for the Proposal, this chapter seeks to quantify the economic impacts of the Proposal.

This chapter assesses the economic impacts of redeveloping the Site under Option 1 and Option 2 by investigating three cases, these include:

- The Base Case: the economic impacts of the Site if it were developed under the current planning controls for comparison with the Option 1 and Option 2.
- Option 1: this scenario assumes that the Site's planning controls are amended and the Site is redeveloped as envisaged in Option 1.
- Option 2: this scenario assumes that the Site's planning controls are amended and the Site is redeveloped as envisaged in Option 2.

5.1 INTRODUCTION AND APPROACH

Economic modelling in this section estimates the economic activity supported by construction and operational activity of the project options. Input-Output modelling is used to examine the direct and flow-on activity expected to be supported within the Pittwater Local Government Area (LGA) economy. Modelling drivers used in the assessment are described section 5.2. A description of the Input-Output modelling framework used is provided in Appendix A.

Input-output modelling describes economic activity by examining four types of impacts:

- **Output**: Refers to the gross value of goods and services transacted, including the costs of goods and services used in the development and provision of the final product. Output typically overstates the economic impacts as it counts all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.
- **Gross Product**: Refers to the value of output after deducting the cost of goods and services inputs in the production process. Gross product defines the true net contribution and is subsequently the preferred measure for assessing economic impacts.
- **Income**: Measures the level of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the project.
- **Employment**: Refers to the part-time and full-time employment positions generated by the economic stimulus, both directly and indirectly through flow-on activity, expressed in full-time equivalent (FTE) positions[1].

5.2 MODEL DRIVERS

5.2.1 Construction Phase

Construction costs for project options 1 or 2 were disaggregated into relevant industry sectors represented in the Input-Output model, based on Australia and New Zealand Standard Industrial Classification (ANZSIC) categories. This breakdown was developed based on assumptions by AEC regarding the most appropriate ANZSIC industries for each activity as highlighted in the table below.

[1] Where one FTE is equivalent to one person working full time for a period of one year.

Table 5.1. Construction Costs by Industry (Incl. Contingency)

Capital Item/ANZSIC Allocation	Cost ($M)	ANZSIC Allocation
Option 1		
Retail	$7.2	Non-Residential Building Construction
Commercial	$0.4	Non-Residential Building Construction
Community	$0.9	Non-Residential Building Construction
Car Parking		Non-Residential Building Construction
Excavation works, landscaping, external gardens, internal finishes, etc.		Construction Services
Professional Fees		Professional, Scientific and Technical Services
Total	**$29.4**	**n.a.**
Option 2		
Retail	$1.2	Non-Residential Building Construction
Commercial	$19.6	Non-Residential Building Construction
Community	$1.5	Non-Residential Building Construction
Car Parking	$14.1	Non-Residential Building Construction
Excavation works, landscaping, internal finishes, etc.	$2.1	Construction Services
Professional Fees	$4.4	Professional, Scientific and Technical Services
Total	**$42.9**	**n.a.**

Note: Totals may not sum due to rounding.
Source: HPG (unpublished), AEC.

Of the above capital outlay, not all activity will be undertaken within the Pittwater LGA economy. For example, some professional services activities are likely to be sourced locally from other centres.

The following table outlines the assumptions used in the modelling to identify where relevant activity is anticipated to occur.

Table 5.2. Location of Construction Phase Activity by Industry

Industry	% Pittwater LGA
Non-Residential Building Construction	100%
Construction Services	100%
Professional, Scientific and Technical Services	50%

Source: AEC.

In interpreting the above table, it is important to recognise the location of where activity occurs can differ from where the labour or services used to undertake the activity are sourced from. For example, construction activity will (effectively) all occur on site. However, it may be that some labour and services will reside outside of the local economy.

The following table outlines the assumptions used in the modelling regarding the location where goods and services are sourced.

Table 5.3. Source of Construction Phase Activity by Industry

Industry	% Pittwater LGA
Non-Residential Building Construction	50%
Construction Services	50%
Professional, Scientific and Technical Services	50%

Source: AEC.

In undertaking economic modelling, the direct activity associated with the construction phase is based on where activity occurs (Table 5.2) rather than strictly where labour for these services is sourced from (Table 5.3). However, the amount of activity that is retained in the local economy is best considered in terms of where labour, goods and

services are sourced, rather than where the activities they undertake are located. This refers to a 'retention' of incomes and profits within an economy, and reflects that labour and companies sourced from outside the Pittwater LGA economy are more likely to spend incomes earned within their local area than within Pittwater LGA.

For the purposes of modelling, it has been assumed construction companies and sub-contractors sourced from outside Pittwater LGA will contribute approximately one-quarter (25%) of the level of Type I (production induced) flow-on activity within the economy that a locally sourced company does, and approximately 5% of Type II (consumption induced) flow-on activity. This reflects that construction companies working on site but sourced from outside Pittwater LGA will contribute to local supply chains in terms of sourcing some goods and services they require locally (Type I), as well as spending some wages and salaries locally on items such as food and drink (Type II).

5.2.2 Operational Phase

Estimates of direct operational phase activity have been developed using Gross Floor Area (GFA) and employment density ratios for each of the site options as per the assumptions in the table below. For modelling purposes, operational activities were allocated to ANZSIC categories.

Based on these employment levels, estimates for direct output were developed using the output to employment ratios outlined in the Input-Output transaction table developed for Pittwater LGA as part of this project (see Appendix A).

It should be noted that in developing these estimates of activity a 'steady state' of operations (whereby all facilities have been developed and long-term average utilisation rates prevail) has been assumed.

Table 5.4. Operational Phase Model Drivers

Floorspace Type/ANZSIC Allocation	GFA (sqm)	FTE Employees/sqm	FTE Employees	Estimated Turnover ($M)
Base Case				
Wholesale Trade	2,280	70	33	$11.6
Human Pharmaceutical and Medicinal Product Manufacturing	2,280	70	33	$20.3
Total	**4,560**	**70**	**66**	**$31.9**
Option 1				
Office and Meeting (Wholesale Trade 35%, Professional, Scientific and Technical Services 35%, Administrative and Support Services 30%)	4,014	15	268	$89.5
Café (Food and Beverage Services)	135	25	5	$0.6
Library (Library and Other Information Services)	180	40	5	$0.8
Wellness Centre (Sport and Recreation)	225	30	8	$1.6
Total	**4,554**	**16**	**285**	**$92.5**
Option 2				
Office and Meeting (Wholesale Trade 35%, Professional, Scientific and Technical Services 35%, Administrative and Support Services 30%)	5,796	15	386	$128.9
Café (Food and Beverage Services)	360	25	14	$1.8
Library (Library and Other Information Services)	270	40	7	$1.1

Floorspace Type/ANZSIC Allocation	GFA (sqm)	FTE Employees/sqm	FTE Employees	Estimated Turnover ($M)
Wellness Centre (Sport and Recreation)	270	30	9	$1.8
Total	**6,696**	**16**	**417**	**$133.6**

Source: AEC

5.3 INDUSTRY CLASSIFACTIONS AND ASSUMPTIONS

5.3.1 Australian Bureau of Statistics (ABS) ANZSIC Industry Classifications

In accordance with the ABS ANZSIC Industry Classifications, a business is classified according to the largest single income earning activity of that business (ABS, 2006). In some cases a business may derive its income from numerous sources. For example:

- 60% of its income is derived from activities of wholesaling motor vehicle parts;
- 20% of its income is derived from retailing motor vehicles; and
- 20% of its income is derived from retailing motor vehicle parts.

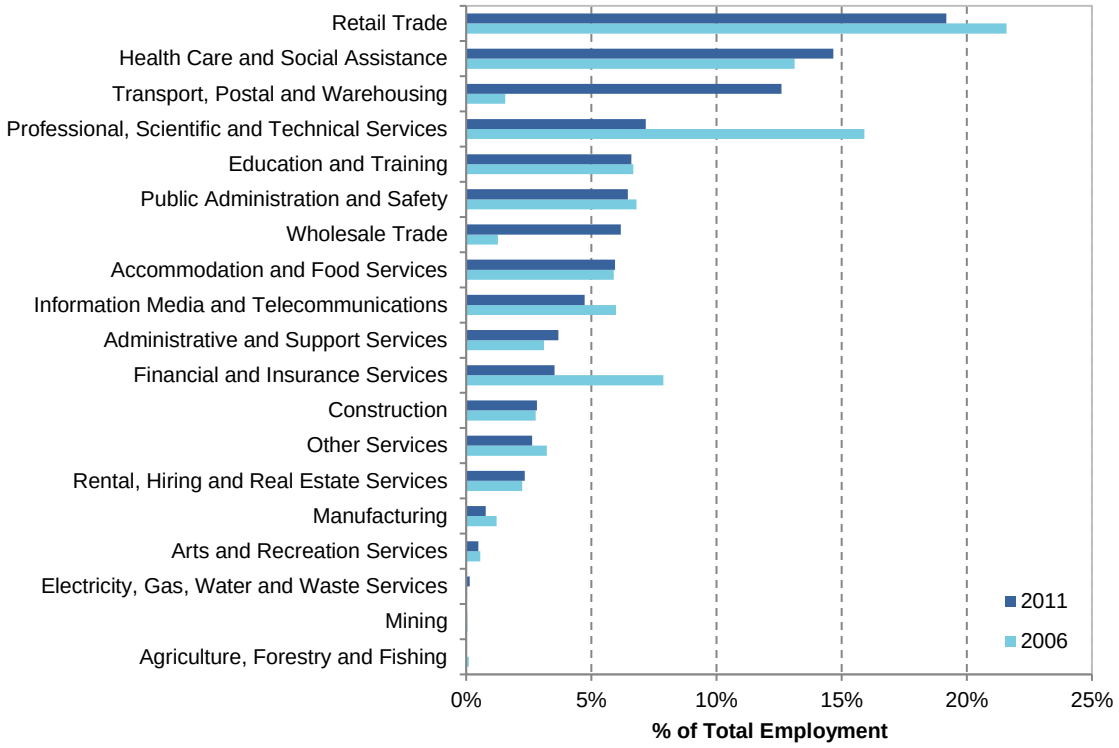
In this case the business would be classified to Wholesale Trade, as this is the Division where most activity occurs (i.e. 60% of the business's income is derived from its wholesaling activities, compared with 40% from retail activities).

A business doesn't necessarily need to perform an activity i.e. wholesaling (which from a land use perspective traditionally takes the form of large storage facilities and distribution centres) on a site in order to generate income from that classification. It may perform a function which is office-based, however, is part of an organisation that generates income from the classification of a particular industry i.e. Wholesale Trade.

5.3.2 ABS ANZSIC Industry Classifactions vs LEP Land Use Definitions

ABS ANZSIC Industry definitions are not necessarily aligned with the Standard LEP Instrument land definitions. For example, the ABS industry profile of Burwood Strategic Centre which is entirely zoned B4 Mixed Use, demonstrates industries like Transport, Postal & Warehousing and Wholesale Trade are prevalent.

Figure 5.1: Burwood Strategic Centre Employment Profile



Note: Place of Work Data.
Source: ABS (2012)

The 'typical' land use implication for "Wholesale Trade" is warehousing and storage space. Yet, among the prohibited uses in the B4 land use zone are "warehouse or distribution centres" as well as "wholesale supplies". The reason for this is the ABS ANZSIC Industry definitions don't differentiate between land use and built form types like the Standard LEP Instrument does. For example, there could be an office in the Burwood CBD that generates its income from Warehousing or Wholesaling activities.

Industry Classifications and Development Land Use Assumptions

Table 5.4 depicts the assumptions used in determining the operational turnover estimates of the redeveloped Site.

Once the Site is redeveloped and operational it has been assumed that Blackmore's income will be generated from the following industry classifications: Wholesale Trade, Professional, Scientific and Technical Services, Administrative and Support Services, Food and Beverage Services, Library and Other Information Services and Sport and Recreation.

This is not to say that Blackmore's operations on Site will take the form of what is traditionally considered Wholesale Trade from a land use zoning perspective i.e. built form that is ordinarily accommodated in an IN1 or IN2 zone. It is more likely their on-site operations will take the form of an office based activity which is permissible in accordance with the B7 Business Park zone in the Pittwater LEP, however, the above mentioned industry classifications have been apportioned to Blackmore's operations due to the consequent income and economic activity which will result from their activities.

5.4 MODEL RESULTS

5.4.1 Construction Phase

The proposed construction activities are expected to deliver a significant impact to the Pittwater LGA economy. The construction of development Option 1 is estimated to provide the following economic impacts:

- Output of $35.7 million (including $14.7 million directly injected into the economy).
- A $15.5 million contribution to Gross Regional Product (GRP) (including $4.6 million in direct impacts).
- Wages and salaries of $8.4 million (including $2.3 million paid to labour directly associated with the construction activity).
- FTE employment of 112 positions (including 28 direct FTE jobs associated with construction activity).

The construction of development Option 2 is estimated to deliver the following economic impacts:

- Output of $52.0 million (including $21.5 million directly injected into the economy).
- A $22.6 million contribution to GRP (including $6.7 million in direct impacts).
- Wages and salaries of $12.3 million (including $3.4 million paid to labour directly associated with the construction activity).
- FTE employment of 163 positions (including 40 direct FTE jobs associated with construction activity).

Table 5.5. Construction Phase Impacts (Development Option 1 and Option 2)

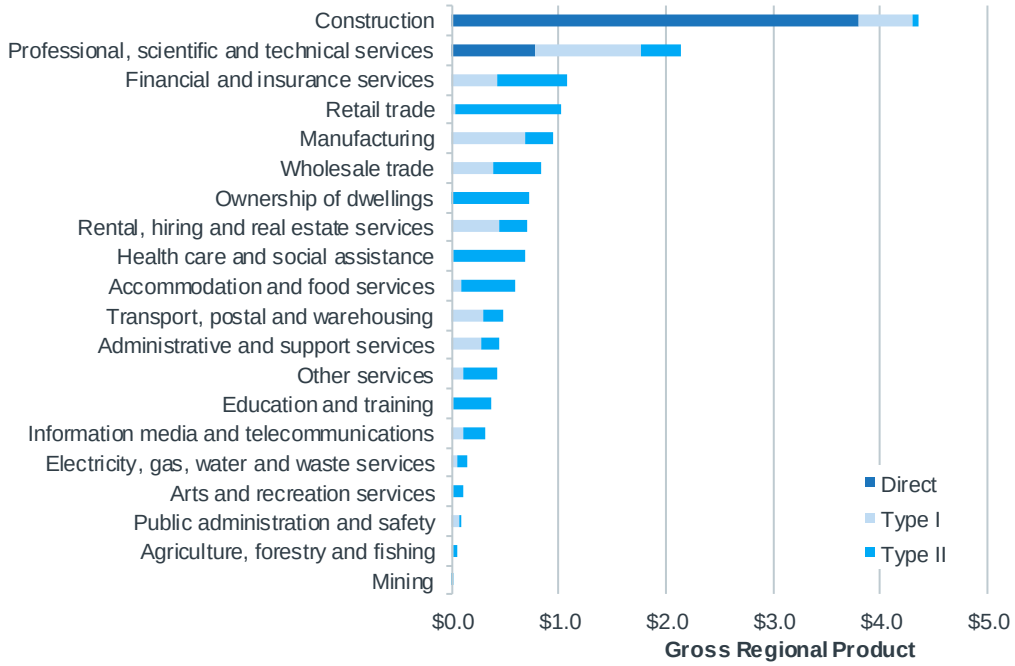
Impact	Output ($M)	GRP ($M)	Income ($M)	Employment (FTE)
Option 1				
Direct Impact	$14.7	$4.6	$2.3	28
Indirect Impact (Type I)	$9.7	$4.5	$2.6	32
Indirect Impact (Type II)	$11.2	$6.4	$3.5	53
Total Impact	**$35.7**	**$15.5**	**$8.4**	**112**
Option 2				
Direct Impact	$21.5	$6.7	$3.4	40
Indirect Impact (Type I)	$14.2	$6.5	$3.8	46
Indirect Impact (Type II)	$16.4	$9.4	$5.1	77
Total Impact	**$52.0**	**$22.6**	**$12.3**	**163**

Note: Totals may not sum due to rounding.
Source: AEC

GRP impacts by industry throughout the construction phase are presented in the figures below. Major industry beneficiaries of the construction phase of the redevelopment within the Pittwater LGA include:

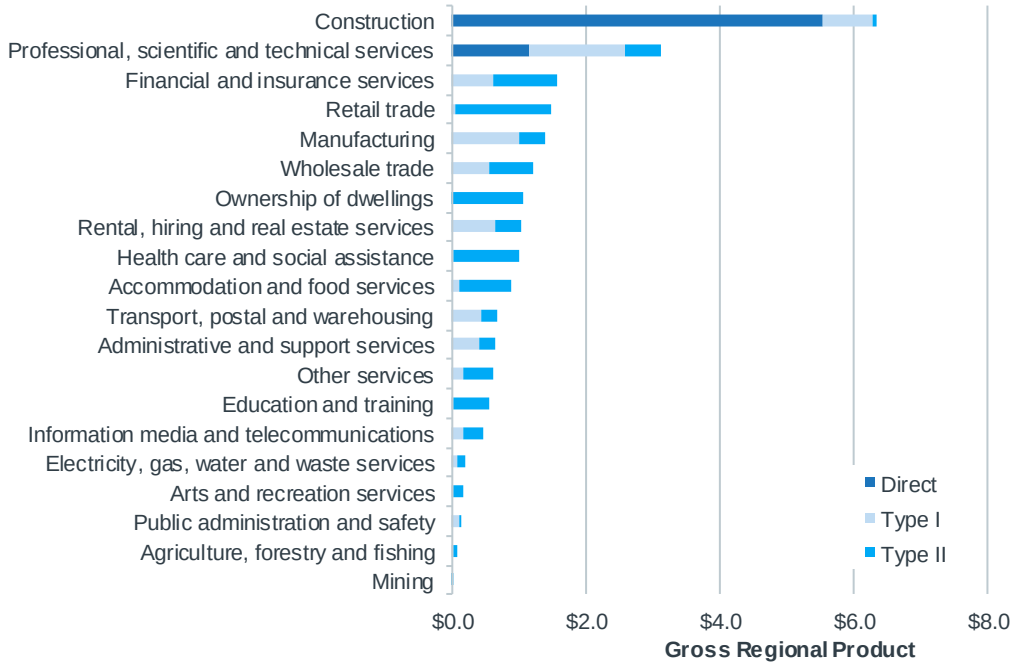
- Construction.
- Professional, scientific and technical services.
- Financial and insurance services.
- Retail trade.

Figure 5.2. Construction GRP Impacts by Industry ($M) Option 1



Source: AEC

Figure 5.3. Construction GRP Impacts by Industry ($M) Option 2



Source: AEC

5.4.2 Operational Phase

The proposed rezoning of the Site has the potential to unlock significant economic activity for Pittwater LGA. Currently under the base case planning scenario, the Site has the potential to support on an ongoing annual basis:

- Output of $64.7 million (including $31.9 million directly injected into the economy).
- A $29.5 million contribution to GRP (including $11.8 million in direct impacts).

- Wages and salaries of $15.4 million (including $5.7 million paid to labour as a result of direct impacts).
- FTE employment of 202 positions (including 66 direct FTE jobs).

Under redevelopment Option 1 the potential economic activity supported by the subject Site increases to:

- Output of $237.2 million (including $92.5 million directly injected into the economy).
- A $128.7 million contribution to GRP (including $48.5 million in direct impacts).
- Wages and salaries of $68.4 million (including $24.1 million paid to labour as a result of direct impacts).
- FTE employment of 908 positions (including 286 direct FTE jobs).

Under redevelopment Option 2 the potential economic activity supported by the subject Site increases to:

- Output of $342.2 million (including $133.6 million directly injected into the economy).
- A $185.8 million contribution to GRP (including $70.1 million in direct impacts).
- Wages and salaries of $100.0 million (including $36.1 million paid to labour as a result of direct impacts).
- FTE employment of 1,312 positions (including 416 direct FTE jobs).

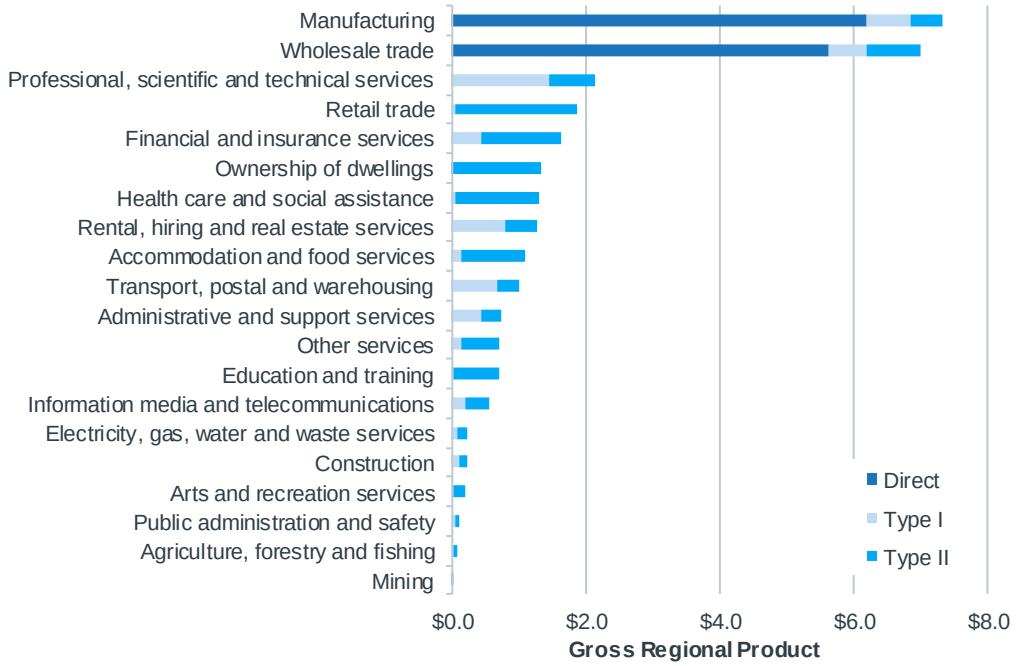
Table 5.6. Operational Phase Impacts

Impact	Output ($M)	GRP ($M)	Income ($M)	Employment (FTE)
Base Case				
Direct Impact	$31.9	$11.8	$5.7	66
Indirect Impact (Type I)	$12.2	$5.9	$3.3	39
Indirect Impact (Type II)	$20.6	$11.8	$6.4	96
Total Impact	**$64.7**	**$29.5**	**$15.4**	**202**
Option 1				
Direct Impact	$92.5	$48.5	$24.1	286
Indirect Impact (Type I)	$45.3	$23.6	$13.4	158
Indirect Impact (Type II)	$99.4	$56.6	$30.9	464
Total Impact	**$237.2**	**$128.7**	**$68.4**	**908**
Option 2				
Direct Impact	$133.6	$70.1	$36.1	416
Indirect Impact (Type I)	$65.2	$33.9	$19.3	227
Indirect Impact (Type II)	$143.4	$81.7	$44.6	670
Total Impact	**$342.2**	**$185.8**	**$100.0**	**1,312**

Note: Totals may not sum due to rounding
Source: AEC

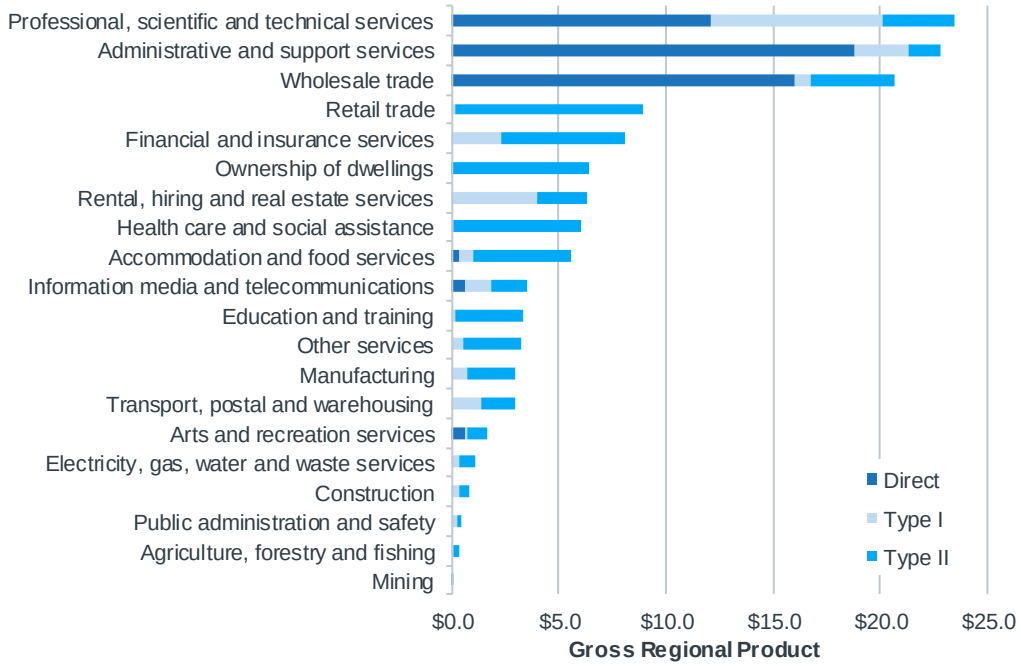
A breakdown of GRP supported by industry under each of the development scenarios is presented in the figures below.

Figure 5.4. Operational GRP Impacts by Industry (Base Case, $M)



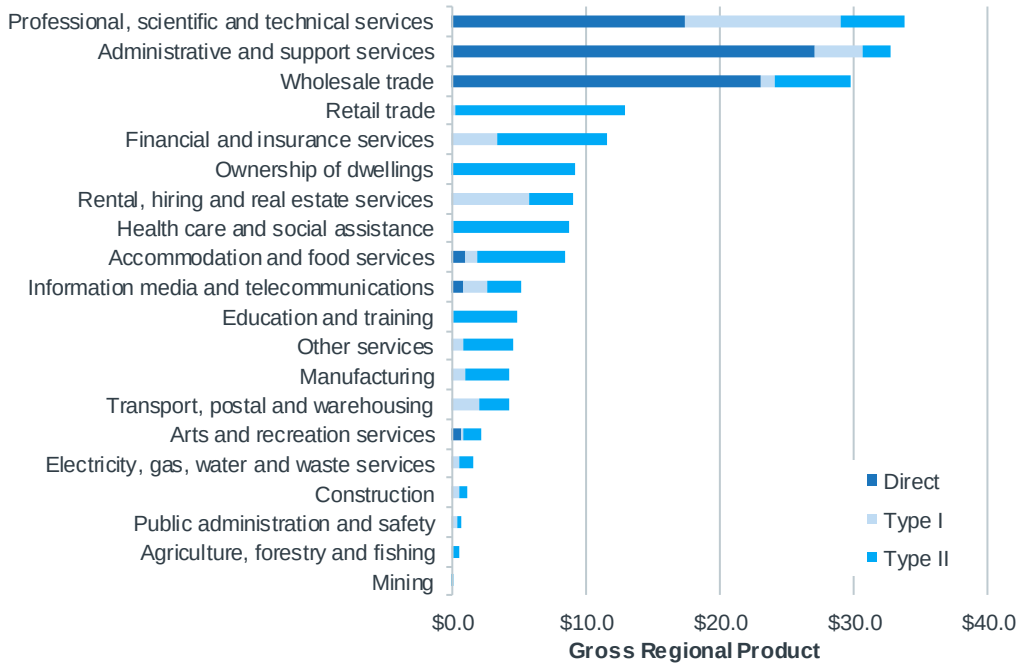
Source: AEC

Figure 5.5. Operational GRP Impacts by Industry (Option 1, $M)



Source: AEC

Figure 5.6. Operational GRP Impacts by Industry (Option 2, $M)



Source: AEC

5.5 SUMMARY OF KEY FINDINGS

The modelling conducted for this study indicates that the proposed redevelopment will make a significant contribution to the Pittwater LGA economy through its construction phase and the ongoing activities of the redeveloped Site.

The construction of development Option 1 is estimated to provide the following economic impacts:

- Output of $35.7 million (including $14.7 million directly injected into the economy).
- A $15.5 million contribution to Gross Regional Product (GRP) (including $4.6 million in direct impacts).
- Wages and salaries of $8.4 million (including $2.3 million paid to labour directly associated with the construction activity).
- FTE employment of 112 positions (including 28 direct FTE jobs associated with construction activity).

The construction of development Option 2 is estimated to deliver the following economic impacts:

- Output of $52.0 million (including $21.5 million directly injected into the economy).
- A $22.6 million contribution to GRP (including $6.7 million in direct impacts).
- Wages and salaries of $12.3 million (including $3.4 million paid to labour directly associated with the construction activity).
- FTE employment of 163 positions (including 40 direct FTE jobs associated with construction activity).

Once the redevelopment is completed and fully operational, the Site will continue to provide a strong ongoing contribution to the local economy. When fully developed and operational, the redeveloped Site is estimated to support on an ongoing annual basis:

Under redevelopment Option 1 the potential economic activity supported by the subject Site increases to:

- Output of $237.2 million (including $92.5 million directly injected into the economy).
- A $128.7 million contribution to GRP (including $48.5 million in direct impacts).
- Wages and salaries of $68.4 million (including $24.1 million paid to labour as a result of direct impacts).

- FTE employment of 908 positions (including 286 direct FTE jobs).

Under redevelopment Option 2 the potential economic activity supported by the subject Site increases to:

- Output of $342.2 million (including $133.6 million directly injected into the economy).
- A $185.8 million contribution to GRP (including $70.1 million in direct impacts).
- Wages and salaries of $100.0 million (including $36.1 million paid to labour as a result of direct impacts).
- FTE employment of 1,312 positions (including 416 direct FTE jobs).

The redevelopment project represents a significant development for the LGA. The proposed development has been identified as providing significant economic benefits both during construction and once fully operational.

Responding to Industry Changing Floorspace Requirements

Owing to structural changes and economic trends in the pharmaceutical industry there are implications to floorpsace requirements for their facilities.

The Proposal will facilitate the development of floorspace that not only responds to the changing requirements of the pharmaceutical industry (by providing contemporary office floorspace and amenties) but also responds to Pittwater's key industries of growth.

The Proposal will facilitate an intensification of employment uses in the Precinct, ensuring that the Precinct can contribute meaningfully to the Pittwater economy.

6. POLICY ASSESSMENT

This chapter considers the policy analysed in Chapter 2 and assesses the Proposal (both Option 1 and Option 2) against it. Policy considerations of particular relevance to the EIA are: Section 117 Direction and Strategic Checklist for Employment Lands. Each of these is considered below in the context of the Proposal Case.

6.1 SECTION 117

The Section 117(2) of Environmental Planning and Assessment Act 1979 provides directions to planning authorities regarding proposals, Section 1.1 Business and Industrial Zones identified as being relevant. The objectives are identified below together with their consideration in the context of the Proposal (both Option 1 and Option 2).

Table 6.1. Consistency with Section 117(2) Objectives

No.	Objective	Rezoning Scenario
1	Encourage employment growth in suitable locations	The Site is currently unimproved. If the Site was redevelopment under the existing controls, it is estimated that the Site could accommodate 66 jobs. The Proposal (Option 1) envisages development of the Site to accommodate: office/meeting floorspace (4,014sqm), cafe (135sqm), library (180sqm) and wellness centre (225sqm). This floorspace combined could accommodate 286 direct jobs on Site. The Proposal (Option 1) complies with this objective. The Proposal (Option 2) envisages development of the Site to accommodate: of office/meeting floorspace (5,796sqm), cafe (360sqm), library (270sqm) and wellness centre (270sqm). This floorspace combined could accommodate 416 direct jobs on Site. The Proposal (Option 2) complies with this objective.
2	Protect employment land in business and industrial zones	The planning amendment sought would lead to an increase in the quantum of land zoned for employment generating land uses in the Pittwater LGA. The total number of jobs generated on the Site is estimated at 286-416 jobs, representing an intensification of land use, compared to 66 jobs that could be accommodated in the IN2 base case. The Proposal Case complies with this Objective.
3	Support the viability of identified strategic centres	The Proposal (both Option 1 and Option 2) would consolidate new jobs and investment in Pittwater in accordance with *A Plan for Growing Sydney*. In particular the Proposal (both Option 1 and Option 2) is in line with Goal 1 “a competitive economy with world class-services and transport”. One of the key directions/actions of this goal is Direction 1.9: Support priority economic sectors. The Plan states that the growth of priority industries (i.e. professional services etc.) has to be supported by planning for their land use needs. Benefits can flow from the emergence of industry clusters in cost-effective locations. The Proposal (both Option 1 and Option 2) would increase the quantum of retail expenditure generated by workers and provide a net positive addition to the pool of expenditure available to be captured by local businesses. For these reasons, the Proposal (both Option 1 and Option 2) would fulfil this Objective.

Section 117 Directions set out five requirements for planning authorities to consider when preparing a planning proposal that will affect land within an existing or proposed business or industrial zone. This are considered below in relation to the Rezoning Scenario.

Table 6.2. Planning Authority Considerations

Consideration	Achieved?	Explanation
Give effect to the objectives of this direction	Yes	**Table 6.1** has established that the objectives of the direction would be achieved via the Proposal (both Option 1 and Option 2).
Retain the areas and locations of existing business and industrial zones	Yes	The Proposal (both Option 1 and Option 2) would increase the quantum of land used for employment uses in Pittwater LGA, and as identified in this EIA, the proposed uses on the Site would respond to the changing employment and floorspace requirements of industry. In order for development to occur in the Precinct, contemporary office-type floorspace that meets with changing requirements of the pharmaceutical and vitamin supplement industry is needed.
Not reduce the total potential floor space area for employment uses and related public services in business zones	Yes	The Proposal (Option 1) envisages development of the Site to accommodate: office/meeting floorspace (4,014sqm), cafe (135sqm), library (180sqm) and wellness centre (225sqm). This floorspace combined could accommodate 286 direct jobs on Site. The Proposal (Option 1) complies with this objective. The Proposal (Option 2) envisages development of the Site to accommodate: of office/meeting floorspace (5,796sqm), cafe (360sqm), library (270sqm) and wellness centre (270sqm). This floorspace combined could accommodate 416 direct jobs on Site. The Proposal (both Option 1 and Option 2) would result in a greater intensification of employment uses on the Site.
Not reduce the total potential floor space area for industrial uses in industrial zones	No	The Site is currently unimproved. If the Site was redevelopment under the existing controls, it is estimated that the Site could accommodate 66 jobs. The Proposal (Option 1) envisages development of the Site to accommodate: of office/meeting floorspace (4,014sqm), cafe (135sqm), library (180sqm) and wellness centre (225sqm). This floorspace combined could accommodate 286 direct jobs on Site. The Proposal (Option 2) envisages development of the Site to accommodate: of office/meeting floorspace (5,796sqm), cafe (360sqm), library (270sqm) and wellness centre (270sqm). This floorspace combined could accommodate 416 direct jobs on Site. It should also be noted that the rezoning sought is from IN2 to B7 Business Park. The B7 Business Park zone does accommodate some industrial uses as well as business uses.
Ensure that proposed new employment areas are in accordance with a strategy that is approved by the Director-General of the Department of Planning	Yes	As established in this EIA, the Proposal (both Option 1 and Option 2) is consistent with State and local government objectives to support jobs, economic development, efficient and effective use of land in suitable locations. It complies with this condition.

6.2 STRATEGIC CHECKLIST OF EMPLOYMENT LANDS

The Industrial Lands Strategic Assessment Checklist sits within the previous Draft Metropolitan Strategy for Sydney 2031 (NSW DP&I, 2013). The checklist provides some guidance for assessing the impact of a rezoning on the subregional or regional supply of employment land.

The checklist is set out below and the Proposal Case has been assessed against it.

Table 6.3. Strategic Checklist for Employment Lands

Checklist	Consistency
Consistency with State or Council Strategies	The Proposal (both Option 1 and Option 2) would consolidate new jobs and investment in Pittwater in accordance with A Plan for Growing Sydney. In particular, the Proposal (both Option 1 and Option 2) is in line with Goal 1 “a competitive economy with world class-services and transport”. One of the key directions/actions of this goal is Direction 1.9: Support priority economic sectors. The Plan states that the growth of priority industries (i.e. professional services etc.) has to be supported by planning for their land use needs. Benefits can flow from the emergence of industry clusters in cost-effective locations.
Location of the Precinct close to key economic infrastructure contributing to a significant industry cluster	The Site is located in a well-occupied business precinct. The Site is currently unimproved. In order for redevelopment to occur a change of land use zoning is critical to ensuring that the industries which are forecast to growth the most overtime are adequately catered for.
Impacts to industrial land stock in the Subregion / Region and ability to meet future demand for industrial lands?	The Proposal (both Option 1 and Option 2) will result in a reduction to industrial stock in the Subregion, however, the employment projections demonstrate that major growth industries in the Precinct include: wholesale trade, health care and social assistance, accommodation and food services and education and training. As such, the demand for floorspace type will shift away from industrial in time. Furthermore, the Proposal (both Option 1 and Option 2) will provide a significant increase in employment foorspace. As such, the LGA and Subregion will be able to well cater to employment land demand in the future.
Impact to Subregional / Regional employment targets and objectives?	The Proposal (Option 1) will result in 286 direct jobs. The Proposal (Option 2) will result in 416 direct jobs. As such, both Option 1 and Option 2 will be more favourable with regard to meeting employment targets.
Compelling argument that the industrial land cannot be used for industrial purposes now or in the foreseeable future? Are there opportunities to redevelop the land for high tech or creative industries?	Chapter 3 demonstrates that over the past number of decades, business parks have transitioned from accommodating warehousing and light manufacturing uses to include office uses in greater proportions. As the proportion of office space provided in business parks increases and further to their location outside or on the fringe of the city, there is a growing need to provide a greater range of amenities for workers. This includes, inter alia, shops, restaurants, childcare centres, medical services, retail facilities and recreational space as well as housing in close proximity. Business parks are beginning to resemble a CBD in many ways, combining a retail offer of shops, restaurants, banks and travel agencies as well as a recreational offer of gyms, swimming pool and playing fields. It is apparent from the analysis that employment uses that are ‘population driven’ are those most likely to grow overtime. The Proposal (Option 1 and Option 2) will assist in meeting the changing employment needs of the Pittwater LGA by providing a range of uses including: retail, commercial and community uses.
Is the Precinct critical to meeting the need for land for an alternative purpose identified in other NSW	Rezoning the Site will be critical to ensuring that the industries which are forecast to growth the most overtime are adequately catered for.

Government or endorsed Council Strategies?	

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APPENDIX A: INPUT-OUTPUT METHODOLOGY

INPUT-OUTPUT MODEL OVERVIEW

Input-Output analysis demonstrates inter-industry relationships in an economy, depicting how the output of one industry is purchased by other industries, households, the government and external parties (i.e. exports), as well as expenditure on other factors of production such as labour, capital and imports. Input-Output analysis shows the direct and indirect (flow-on) effects of one sector on other sectors and the general economy. As such, Input-Output modelling can be used to demonstrate the economic contribution of a sector on the overall economy and how much the economy relies on this sector or to examine a change in final demand of any one sector and the resultant change in activity of its supporting sectors.

The economic contribution can be traced through the economic system via:

- **Direct impacts**, which are the first round of effects from direct operational expenditure on goods and services.
- **Flow-on impacts**, which comprise the second and subsequent round effects of increased purchases by suppliers in response to increased sales. Flow-on impacts can be disaggregated to:
    - **Industry Support Effects (Type I)**, which represent the production induced support activity as a result of additional expenditure by the industry experiencing the stimulus on goods and services in the intermediate usage quadrant, and subsequent round effects of increased purchases by suppliers in response to increased sales.
    - **Household Consumption Effects (Type II)**, which represent the consumption induced activity from additional household expenditure on goods and services resulting from additional wages and salaries being paid within the economic system.

These effects can be identified through the examination of four types of impacts:

- **Output**: Refers to the gross value of goods and services transacted, including the costs of goods and services used in the development and provision of the final product. Output typically overstates the economic impacts as it counts all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.
- **Gross Product**: Refers to the value of output after deducting the cost of goods and services inputs in the production process. Gross product defines the true net contribution and is subsequently the preferred measure for assessing economic impacts.
- **Income**: Measures the level of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the project.
- **Employment**: Refers to the part-time and full-time employment positions generated by the economic shock, both directly and indirectly through flow-on activity, and is expressed in terms of full-time equivalent (FTE) positions.

Input-Output multipliers can be derived from open (Type I) Input-Output models or closed (Type II) models. Open models show the direct effects of spending in a particular industry as well as the indirect or flow-on (industrial support) effects of additional activities undertaken by industries increasing their activity in response to the direct spending.

Closed models re-circulate the labour income earned as a result of the initial spending through other industry and commodity groups to estimate consumption induced effects (or impacts from increased household consumption).

MODEL DEVELOPMENT

Multipliers used in this assessment are derived from sub-regional transaction tables developed specifically for this project. The process of developing a sub-regional transaction table involves developing regional estimates of gross production and purchasing patterns based on a parent table, in this case, the 2012-13 Australian transaction table (ABS, 2015).

Estimates of gross production (by industry) in the study area were developed based on the percent contribution to employment (by place of work) of the study area to the Australian economy (ABS, 2012), and applied to Australian gross output identified in the 2012-13 Australian table.

Industry purchasing patterns within the study area were estimated using a process of cross-industry location quotients and demand-supply pool production functions as described in West (1993).

Where appropriate, values were rebased from 2012-13 (as used in the Australian national Input-Output transaction tables) to 2016 values using the Consumer Price Index (ABS, 2016).

MODELLING ASSUMPTIONS

The key assumptions and limitations of Input-Output analysis include:

- **Lack of supply-side constraints**: The most significant limitation of economic impact analysis using Input-Output multipliers is the implicit assumption that the economy has no supply-side constraints, so the supply of each good is perfectly elastic. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- **Fixed prices**: Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using Input-Output multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. The system is in equilibrium at given prices, and prices are assumed to be unaffected by policy and any crowding out effects are not captured. This is not the case in an economic system subject to external influences.
- **Fixed ratios for intermediate inputs and production (linear production function)**: Economic impact analysis using Input-Output multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. That is, the input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs). As such, impact analysis using Input-Output multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount. Further, it is assumed each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies there is only one method used to produce each commodity and that each sector has only one primary output.
- **No allowance for economies of scope**: The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the “additivity assumption”. This generally does not reflect real world operations.
- **No allowance for purchasers’ marginal responses to change**: Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints**: Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.

Despite these limitations, Input-Output techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and provide useful insight into the quantum of final demand for goods and services, both directly and indirectly, likely to be generated by a project.

In addition to the general limitations of Input-Output Analysis, there are two other factors that need to be considered when assessing the outputs of sub-regional transaction table developed using this approach, namely:

- It is assumed the sub-region has similar technology and demand/ consumption patterns as the parent (Australia) table (e.g. the ratio of employee compensation to employees for each industry is held constant).

- Intra-regional cross-industry purchasing patterns for a given sector vary from the national tables depending on the prominence of the sector in the regional economy compared to its input sectors. Typically, sectors that are more prominent in the region (compared to the national economy) will be assessed as purchasing a higher proportion of imports from input sectors than at the national level, and vice versa.

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