



# **BAYSIDE WEST PRECINCTS 2036**

**ARNCLIFFE, BANKSIA AND COOKS COVE**

**NSW Department of Planning and Environment**

**August 2018**

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# INTRODUCTION

**Greater Sydney is Australia's global city; an economic powerhouse of 4.7 million people, endowed with the natural beauty of Sydney Harbour, bushland, beaches and the Blue Mountains. Greater Sydney's people have embraced this place for its opportunities and its potential.**

As Greater Sydney grows we must plan in a strategic way to ensure that our city is not only bigger but also better. We must plan to ensure that the necessary infrastructure is in place to support our growing communities. The Planned Precincts program is designed to achieve this.

## Planned Precincts

Planned Precincts are generally identified as areas with good access to existing or planned transport infrastructure and that have the potential to provide for significant growth in housing and jobs. The purpose of the Planned Precincts program is to ensure these important areas are strategically planned and infrastructure is delivered in a coordinated manner.

It is a NSW Government-led program based on collaboration with local councils and comprehensive community consultation.

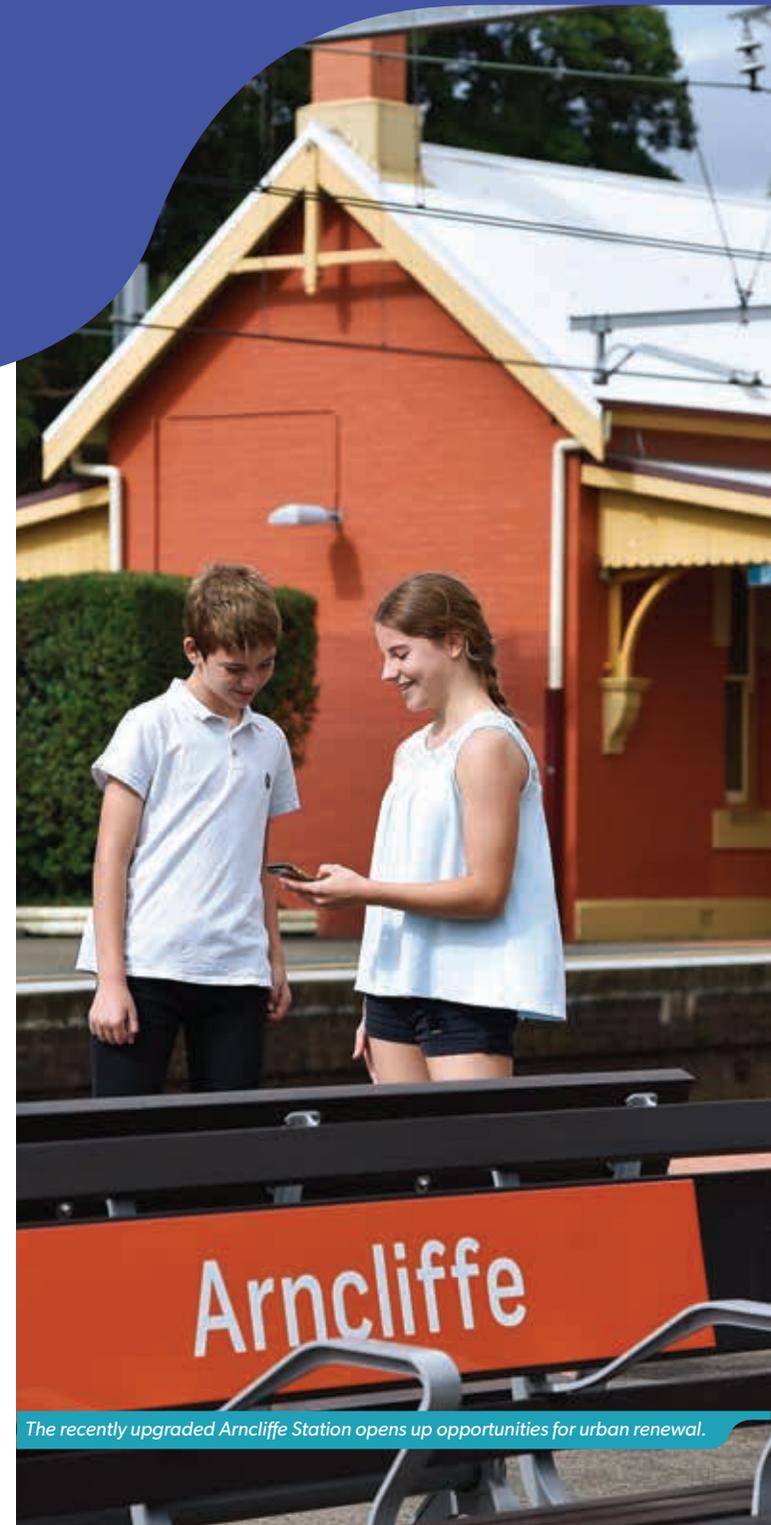
## The Precincts

The Bayside West Precincts (Arncliffe, Banksia and Cooks Cove) are located within the western part of the Bayside local government area, approximately 10–12 kilometres south of the Sydney CBD and immediately to the west of Sydney Airport (Figure 1).

Arncliffe, Banksia and Cooks Cove were nominated for the Planned Precincts program by the former Rockdale City Council (now Bayside Council). The NSW Government endorsed the nomination in July 2014 (Arncliffe and Banksia) and 2015 (Cooks Cove). The Bayside West Precincts present an opportunity for urban renewal to provide more open space, infrastructure, homes and jobs in accessible locations.

## Planning context

This Plan sets out strategic land use and infrastructure planning to guide the future transformation of the Bayside West Precincts. The Plan will inform future changes to the planning controls to enable the rezoning of the Arncliffe and Banksia Precincts, through future amendments to the *Rockdale Local Environmental Plan 2011* (LEP 2011).



The recently upgraded Arncliffe Station opens up opportunities for urban renewal.

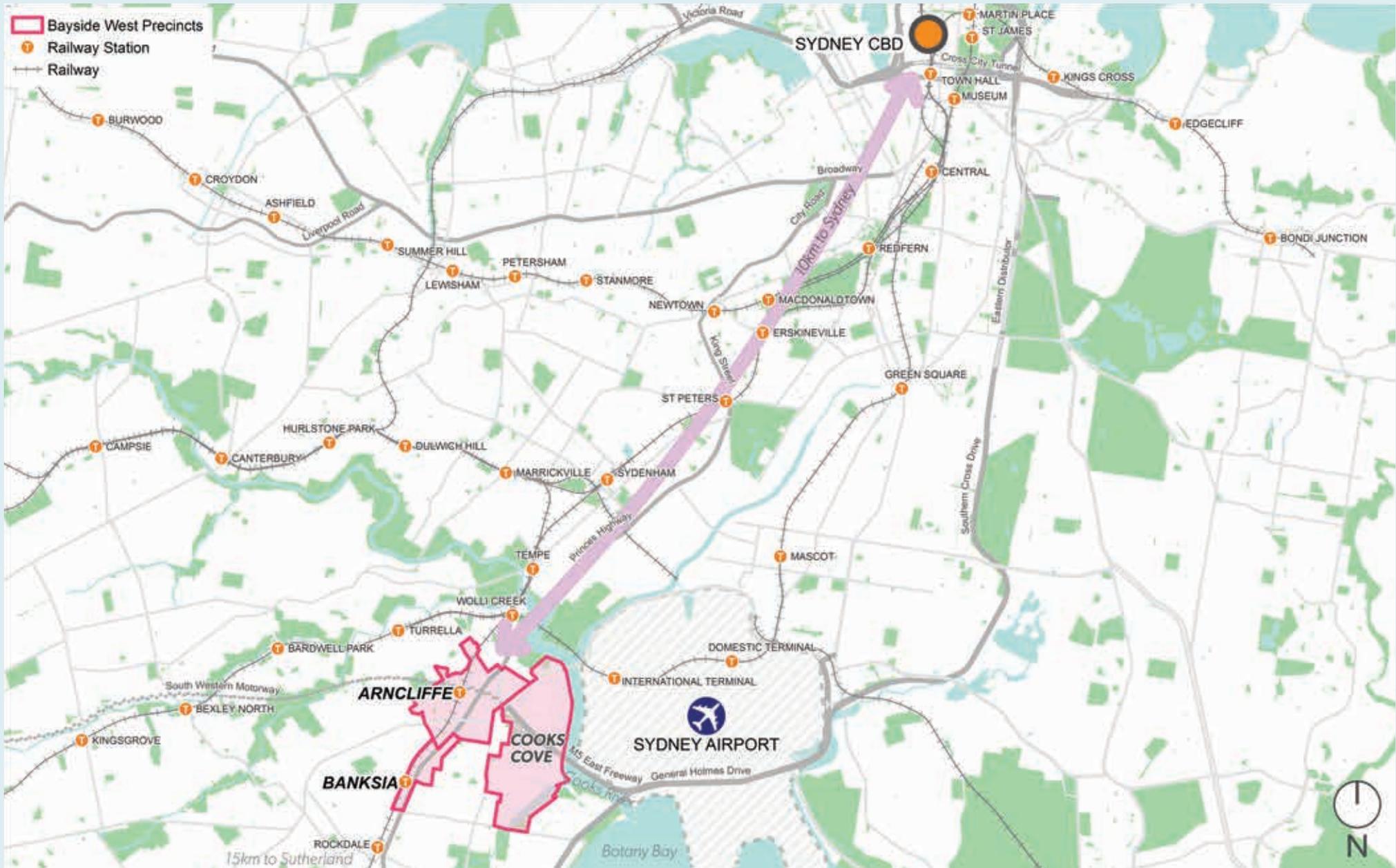


Figure 1: Bayside West Precincts location map

# CONSULTATION SNAPSHOT

**Community and stakeholder input is an important part of planning for the future of the Bayside West Precincts. The Department has worked closely with Bayside Council, government agencies, stakeholders and the community to prepare and finalise this Plan.**

## Submissions and survey results

A total of 198 formal submissions were received during the exhibition period. These submissions included:

**46** submissions were from developers or property owners who were seeking changes in proposed zoning or planning controls on specific sites

**11** Submissions were received from Government agencies, Bayside Council and regulatory organisations

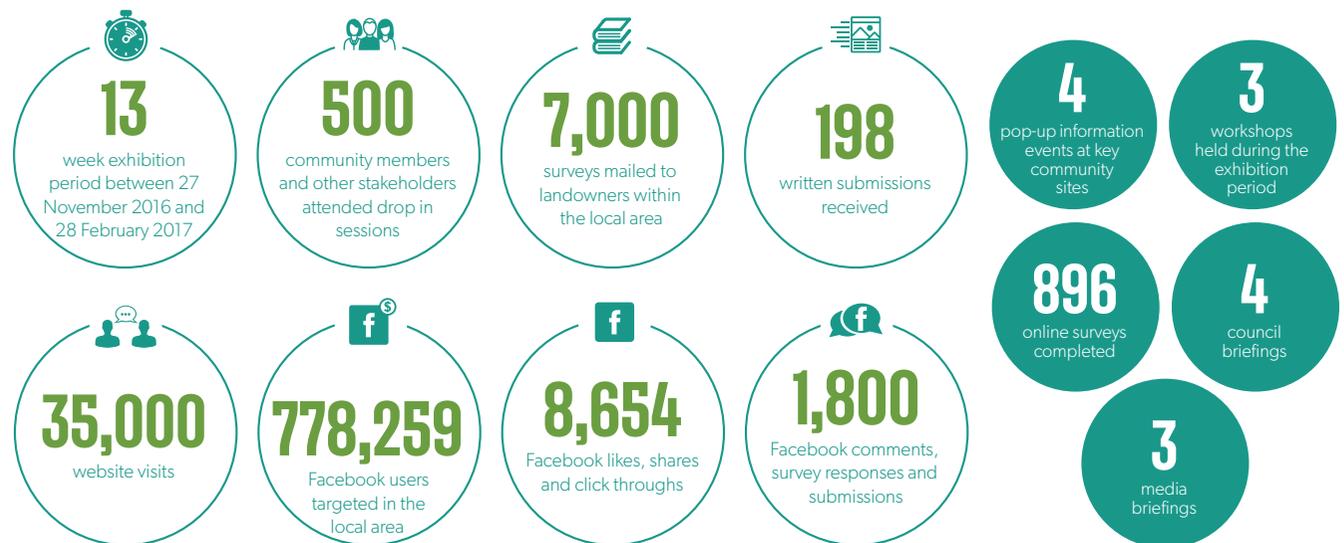
**38** submissions focussed specifically on issues regarding the Cooks Cove Precinct and associated developments (e.g. relocation of Kogarah Golf Course)

**103** submissions were received from individuals or community organisations.

An online survey was also run to seek community

feedback during the exhibition period. A total of 896 people responded to the survey. An analysis of the community feedback we received can be found in the *Bayside West Precincts Community Consultation Report* (April 2017) on the Department's website.

## Consultation in numbers



## What we heard

The most common issues raised by the community, Bayside Council and other government agencies in the submissions are summarised below. The issues raised during the community engagement and in the formal submissions have been at the forefront of the Department's review of the Plan and were considered in the finalisation of the Precinct planning.

A detailed response to the 198 submissions received can be found in the *Bayside West Precincts Finalisation Report* (August 2018) on the Department's website.

### Movement

#### Traffic generation and congestion

One of the most common concerns was the impact of the increased population resulting in a rise in traffic volumes on the local and regional road network, and the impact on the already congested roads.

#### Inadequate car parking

Parking was raised in submissions in conjunction with traffic impacts. The key concern was that existing parking issues would be exacerbated by the population growth and that there was insufficient on-street parking to cater for current demand.

#### Public transport capacity

Limited bus options and the existing overcrowding of peak train services were raised by many respondents as reasons for not increasing the density of development in the Precincts.

### Inadequate cycle and pedestrian paths and links

Many submissions identified that existing pedestrian and cyclist facilities and routes were inadequate and identified that new or improved facilities were required.

### Built form

#### Excessive heights and scale of proposed development

A number of submissions considered the proposed heights and density to be excessive and inconsistent with the character of the surrounding area.

#### Princes Highway

Submissions were received from developers and property owners seeking an increase in maximum building height and/or floor space ratio for specific sites along the Princes Highway.

### Land use

#### Loss of open space

A number of submissions raised concerns that there would be insufficient open space to cater for the new population.

### Schools

A number of submissions raised the issue that local schools and particularly Arncliffe Public School are already at capacity and cannot cope with an increased population.

### Rezoning of Arncliffe and Banksia

There was a range of views expressed in community submissions with some property owners and residents supporting the rezoning, while others were against the rezoning citing concerns about road and public transport capacity, loss of local character, loss of views, urban design quality of new development, school capacity and lack of open space.

#### Council's submission

Bayside Council provided a detailed submission that raised issues relating to roads, public transport, open space and infrastructure provision. Bayside Council was largely supportive of the Plan, subject to the main issues identified being addressed.

### Cooks Cove

A number of submissions commented on the future redevelopment of Cooks Cove, including concerns that existing areas of open space, wetlands and the heritage listed market gardens would be impacted by any future development of the Cooks Cove Precinct.

These matters are not part of the Department's precinct planning. While the draft Plan included Cooks Cove, the future of Cooks Cove will be subject to further planning investigations and approvals which will be required to address the planning principles outlined on page 10. Any rezoning of Cooks Cove will be subject to assessment by Bayside Council and determined by the Greater Sydney Commission.

# VISION

## Objectives

- 1** Create vibrant and connected town centres at Arncliffe and Banksia.
- 2** Improve accessibility for pedestrians, cyclists and vehicles; and connect homes, jobs and local families across the Precincts to make it easier to get around.
- 3** Provide more homes and improve and increase housing choice.
- 4** Revitalise and activate the Princes Highway Corridor and make it a safe place for pedestrians.
- 5** Improve existing and provide new areas of open space.

### Vision for 2036

*The Bayside West Precincts are vibrant, attractive and connected communities, where people live and work. Located 10kms to the south of the CBD and adjacent to the Sydney Airport, the Precincts have been built on great access to public transport, community facilities, new open spaces, shops and local services.*



*The vision seeks to improve connectivity to the riverfront for pedestrians and cyclists. Artists impression of the Cooks Cove foreshore path.*



Figure 2: Bayside West Precincts 2036 Plan

# ABOUT THIS PLAN

## **This Plan is based on the five Planned Precinct themes: Place, Land use, Movement, Landscape and Built Form.**

This Plan provides more open space, infrastructure, homes and jobs in accessible locations in a co-ordinated manner to support growth occurring across greater Sydney.

The Department has developed this Plan based on a suite of technical studies, ongoing community engagement, submissions received during the exhibition period and collaboration with Bayside Council and other key government agencies throughout the project.

This Plan has been prepared to provide a framework to guide the development within the Bayside West Precincts and identify the infrastructure needs to support this growth.

## **Planning for Arncliffe and Banksia**

The Plan for Arncliffe and Banksia is underpinned by the planning vision (page 8) and is set out under the five key themes explored in this report.

## **Planning for Cooks Cove**

Cooks Cove is one of the three Bayside West Precincts. Precinct planning for Cooks Cove is limited to improvements to pedestrian, cycling and vehicle connections and public access to the riverfront. This Plan will ensure Cooks Cove is well connected to the local catchment to support this Precinct for any future planning. The planning for Cooks Cove does not include a rezoning stage and future development at Cooks Cove is subject to assessment by Bayside Council.

The following planning principles have been developed to ensure future development at Cooks Cove meets Government objectives, including:

- Enable the environmental repair of the site and provide for new recreation opportunities.
- Not compromise future transport links (such as the South-East Mass Transit link identified in Future Transport 2056 and the Greater Sydney Region Plan) that will include the consideration of the preserved surface infrastructure corridor, noting constraints, including the Cooks River, geology, Sydney airport and existing infrastructure will likely necessitate consideration of future sub-surface solutions and potential surface support uses.
- Create a highly liveable community that provides

choice for the needs of residents, workers and visitors to Cooks Cove.

- Ensure best practice design and a high-quality amenity with reference to the NSW design policy Better Placed.
- Deliver an enhanced, attractive, connected and publicly accessible foreshore and public open space network and protect and enhance the existing market garden.
- Safeguard the ongoing operation of Sydney Airport.
- Enhance walking and cycling connectivity and the use of public transport to encourage and support a healthy and diverse community and help deliver a 30-minute city.
- Deliver a safe road network that balances movement and place, provides connections to the immediate and surrounding areas, and is cognisant of the traffic conditions in this area.
- Enhance the environmental attributes of the site, including protected flora and fauna, riparian areas and wetlands and heritage.

## Special Infrastructure Contribution Scheme

The Department proposes to implement a Special Infrastructure Contribution (SIC) scheme for the Bayside West Planned Precincts. The Department has identified the State and regional infrastructure needs for the Arncliffe, Banksia and Cooks Cove areas to support new and growing communities.

*The Draft SIC for Bayside West will include funding towards new open space, local schools, new pedestrian and cycle facilities, and improvements to public transport and road upgrades.*

## Specialist technical studies

This Plan has been informed by specialist technical studies. These technical studies are available on the Bayside West Planned Precincts webpage.

The scope of each of the technical studies is summarised below.

### Urban Design Report

Reviewed the existing built form, constraints and opportunities in the Arncliffe and Banksia precincts and provided a structure plan to respond to considerations of place and good design.

### Economic and Feasibility Analysis

Assessed built form and land use options with a focus on employment uses. Forecast future demand for residential and employment land uses, having consideration to future rezoning.

### Social Infrastructure Study

Reviewed existing demographic data and future population projections to recommend recreational and community facilities for future residents and workers.

### Arncliffe and Banksia Green Plan

Prepared a guide to planning and design of open space and tree canopy in a coordinated manner across the Arncliffe and Banksia precincts.

### Public Domain Study

Reviewed the existing public domain to identify opportunities to improve open space, walking and cycling connections and streetscape.

## Transport Plan

Prepared an analysis of the existing and future movement within, to and from the Precincts and made recommendations to improve transport infrastructure.

### Heritage Analysis

Assessed the existing heritage items and made planning recommendations to respect heritage items, including transitions and interfaces.

### Utilities

Carried out an audit of the existing utilities and services were considered in the Plan (in consultation with utilities providers), and made recommendations to accommodate any future population growth.

### Aeronautical Impact Assessment

Reviewed the building height limitations and impacts of proposed development within the precincts on the Sydney Airport prescribed airspaces.

### Site Contamination Investigation

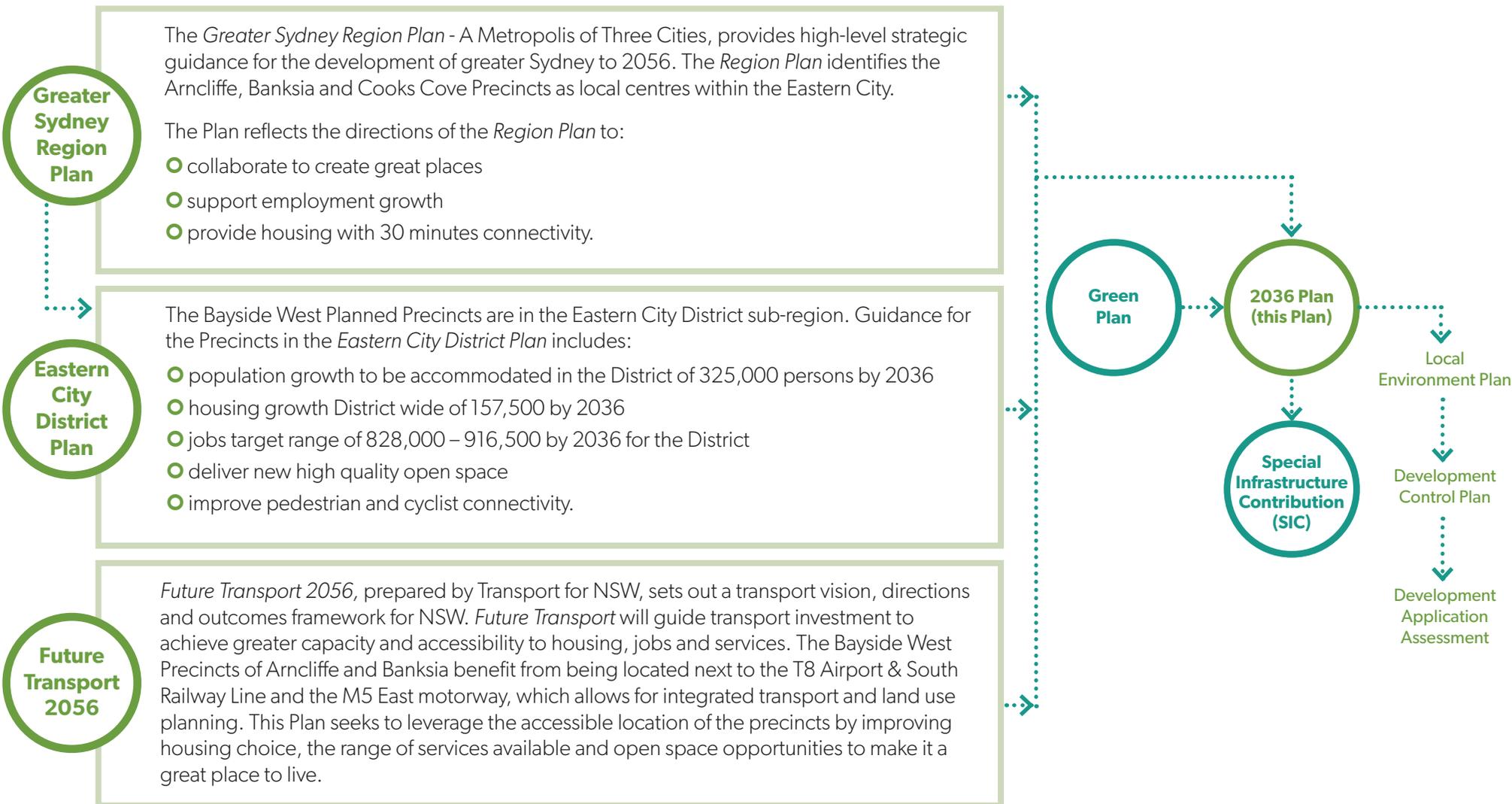
Reviewed the existing contamination of the precincts, based on site history land use, and provided recommendations to enable future development.

### Flooding and Drainage Review

Considered existing flooding and drainage conditions, and identified improvements required to the current drainage infrastructure to support the future population growth.

## Supporting the Plan

The objectives contained in the Plan are consistent with the housing and employment targets expressed in the *Greater Sydney Region Plan* and the *Eastern City District Plan* and the direction of *Future Transport 2056*.



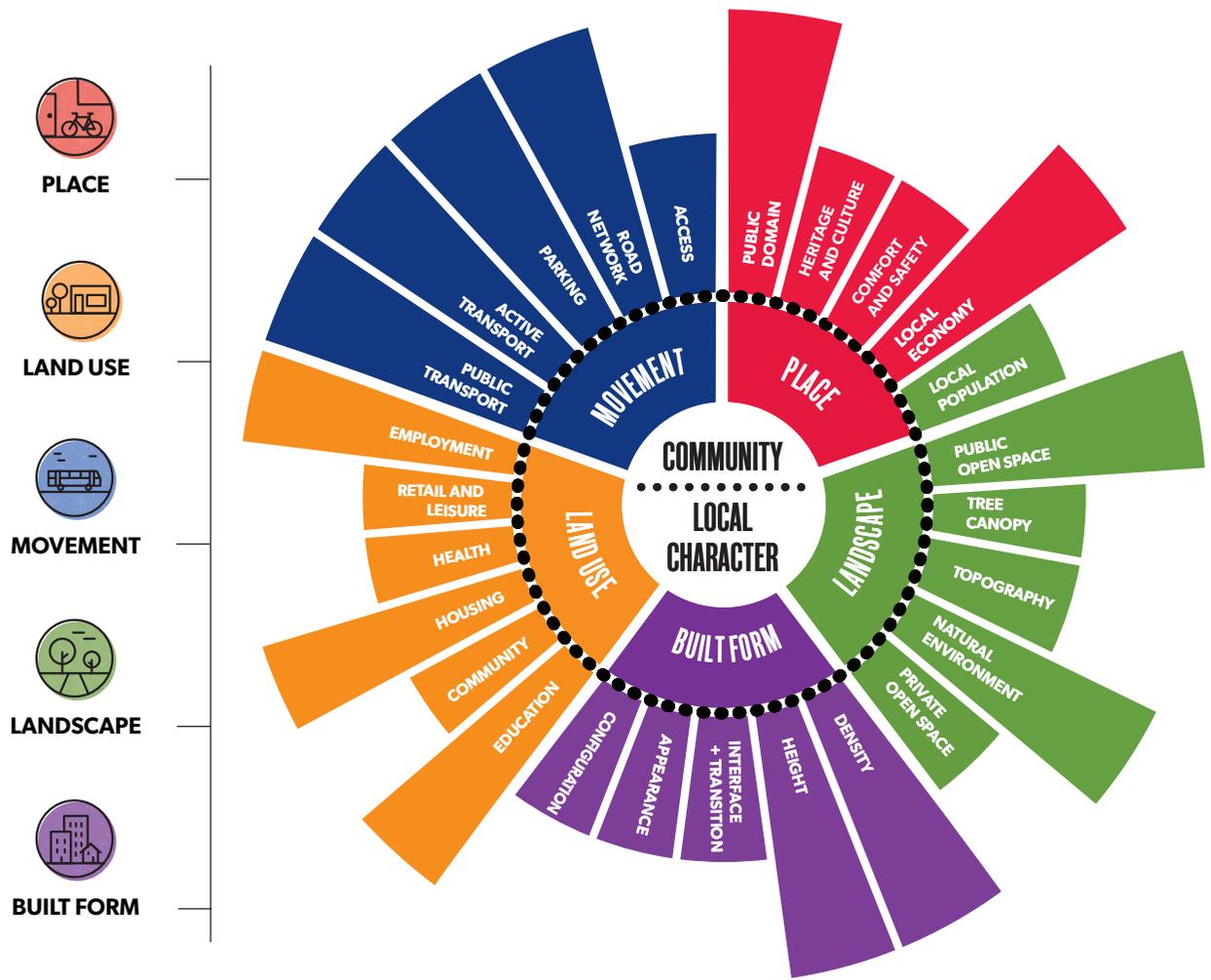


# THE BAYSIDE WEST PRECINCTS

## The analysis of the Precincts is presented under **Five Themes**

This analysis has informed land use and infrastructure recommendations in the Plan.

Longer spokes on the local character and community wheel (right) represent those elements that are most valued by the community based on community submissions and consultation undertaken.





## PLACE

### Heritage and culture

For over 5,000 years, the northern shore of Botany Bay has been home to the Kameygal clan, people of the Eora Aboriginal group. Both Arncliffe and Gardiner parks are of high Aboriginal archaeological sensitivity. This Plan acknowledges opportunities to explore and celebrate the Precincts' Aboriginal history as part of the plan for Bayside West's future.

In the late 18th century during European settlement, the area was used for open orcharding and farming and there are three State heritage items located within the Precincts:

1. The Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) – an original section of one of Sydney's oldest main sewers, built in the 1890s to end the discharge of sewage into Sydney Harbour.
2. Arncliffe Railway Station – one of three remaining stations with 1880s 'second class' brick platform buildings on the Illawarra Rail Line.
3. The Chinese market garden (Cooks Cove) – a commercial garden which played a pivotal role in the late 19th and early to mid-20th century providing the majority of Sydney's fresh fruit and vegetables.

New developments will be subject to Council's existing heritage conservation guidelines in Section 4.1.2 of the *Rockdale Development Control Plan 2011*. These guidelines aim to conserve significant fabric and settings and to ensure that new development will be sympathetic and not adversely impact on the significance of heritage items.

### Local population

The Arncliffe and Banksia Precincts are home to a wide mix of people.

Arncliffe and Banksia are established residential suburbs, providing homes to over 4,254 residents (2016 ABS Census data).

It is a diverse community, home to a high proportion of people born overseas and people who speak a language other than English at home. Overall 75.6% of the population of Arncliffe and 74.8% of the population of Banksia had at least one parent born overseas. The main countries of origin of those born overseas include Lebanon, China, Former Yugoslav Republic of Macedonia, Greece, Philippines, New Zealand and Nepal. As a result of this cultural diversity, a wide variety of languages other than English are spoken within the community.

It is an important area for young families and those in the working age bracket. In the 2016 census, Arncliffe and Banksia had a lower median age than Sydney overall (33.2 years in Arncliffe and 34.9 years in Banksia compared to 32 in Rockdale and 35.9 in Sydney as a whole) and a higher proportion of children under 15 years.

It is also a community with a high proportion of families experiencing housing stress and low average household incomes compared to Greater Sydney.



*The State heritage listed SWSOOS, one of Sydney's oldest main sewers, runs through the Precincts*



## LAND USE

### Housing

Sydney's population is continuing to grow and there is a need to provide additional housing to accommodate this growth. The *Eastern City District Plan* identifies the need to provide housing supply, choice and affordability with access to jobs services and public transport.

The Eastern City is expected to experience a population growth of 325,000 persons by 2036 (19% of the total growth projected for Greater Sydney). This equates to providing 22% of Greater Sydney's total housing growth, requiring 157,500 homes by 2036 within the Eastern District. The future planning for Bayside West will contribute to the targets for the wider Eastern District.

The planning for Arncliffe and Banksia Precincts provides the opportunity for around 5,000 new homes over the next 20 years. Housing requirements differ across household types so it is necessary to provide a range of housing types including detached dwellings, townhouses and apartments/units to meet varied needs. These sentiments on housing choice and accessibility to key services and transport were also expressed by the local community through planning for the Precincts.

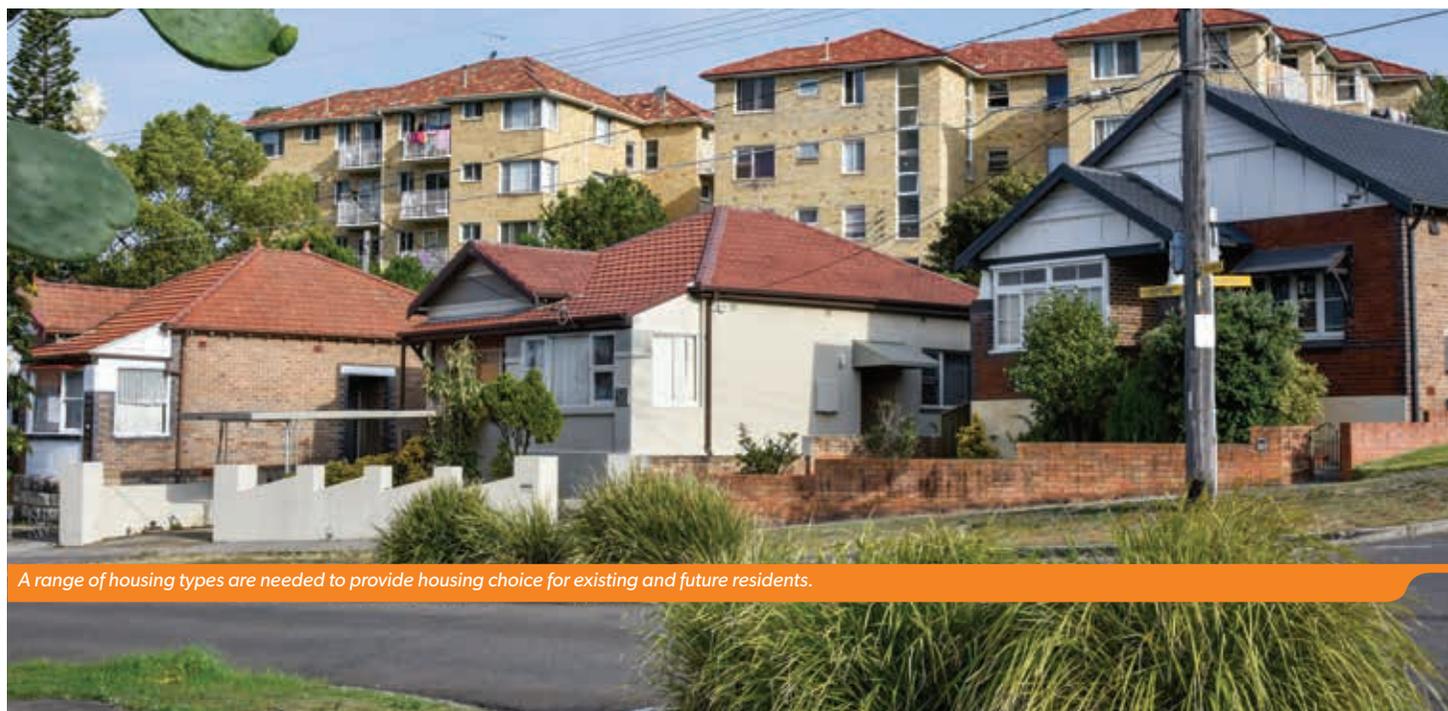
An analysis of housing stress data indicates that a high proportion of families are experiencing housing stress and low average household incomes compared to Greater Sydney. The NSW Land and Housing Corporation site on Eden Street, within

the Arncliffe Precinct, also presents an opportunity for the significant renewal of the social housing and to provide affordable housing on this site to better meet the needs of the community. Council will also undertake affordable housing investigations as part of the strategic review of its Local Environmental Plan to align with the priorities of the Eastern City District Plan.

The need for residential development must be balanced with the need to maintain and support the role of the Princes Highway in providing employment opportunities. Meeting jobs targets and ensuring adequate infrastructure can be provided to meet the needs of any new local population are also high priorities in the Sydney Region Plan (see *Local economy* section on page 18).

The Plan includes the following key changes for housing in the Precincts:

- Providing for increased housing choice in the expanded Arncliffe and Banksia centres to encourage the viability of renewal, promote vibrant and active areas and get people living in convenient locations, close to transport, jobs and the shops and services they need.
- Introducing shop top housing into well serviced and accessible areas on the Princes Highway to encourage revitalisation of these areas and foster public domain improvements.
- Increase housing choice in existing low-density areas within Arncliffe and Banksia which are within easy walking distance to the railway stations and town centres to encourage activation of these



A range of housing types are needed to provide housing choice for existing and future residents.

centres, healthy lifestyles and sustainable transport initiatives.

- Encourage an appropriate transition in built form and character adjoining established areas of high density living. This includes the northern parts of the Arncliffe Precinct adjoining the Wolli Creek Precinct.
- Plan for medium density, low rise residential development adjoining existing areas of low density to ensure an appropriate transition in building height that is respectful of the local character.
- Exclude housing from the southern extent of the Banksia Precinct due to the mapped high incidence aircraft and operational noise from Sydney Airport, subject to the +25 Australian Noise Exposure Forecast (ANEF).
- Recognise the additional acoustic attenuation measures required for housing located within the 20–25 ANEF contour (set out in the *Rockdale LEP 2011*).

The area west of Arncliffe Station will be the subject of further investigation to consider opportunities for greater master planning and high quality design outcomes.

The increases in housing supply and choice have been balanced with the need to maintain employment generating land, environmental constraints; such as topography and airport restrictions, and provide supporting infrastructure for the existing and future communities to live in the Precincts. Refer to the *Local economy* and *Infrastructure* sections of the Plan.

### Social infrastructure

An audit of the available social infrastructure for the Bayside West Precinct suggests it is currently well serviced. Regional health, tertiary education, cultural and emergency services at Kogarah and district level services in Rockdale are all within the catchment. This includes St Georges Hospital, the Kogarah Ambulance Station, the Kogarah Police Station and the St George campus of the Sydney Institute of TAFE. Additional district level services are provided in Rockdale, including the refurbished Rockdale central library and town hall.

Locally, Arncliffe houses a good range of community facilities that support both Arncliffe and Banksia residents including a branch library, a council community centre and a YMCA centre.

To accommodate the growing communities of the Bayside West Precincts, additional social infrastructure is required to support the population needs. Future local community facilities can be accommodated in the increased development capacity of sites throughout the Precincts and will be subject to future planning by Bayside Council.

More information regarding future social infrastructure needs can be found at Appendix A.

### Education

The Precincts are currently serviced by six local schools:

- Arncliffe Public School (primary), located within the Arncliffe Precinct
- Francis Xaviers Catholic Primary School, located within the Arncliffe Precinct
- Kyeemagh Infants School, located south of Cooks Cove
- Arncliffe West Infants School, located approximately 1 kilometre northwest of Arncliffe
- Cairnsfoot Special School, located approximately 1 kilometre northwest of Arncliffe
- Athelstand Public school (primary), located along Wollongong Road, west of Arncliffe.

The Draft SIC provides funding for the Department of Education to provide for additional student spaces to support the growing population.

### Local economy

This plan aligns with Bayside Council's *Princes Highway Corridor Strategy 2013* (the *2013 Strategy*) and has developed a flexible and balanced planning framework that responds to the changing structure of employment uses and the demand for new residential and mixed-use areas.

Importantly, consistent with the more recent *Greater Sydney Region Plan* and *Eastern City District Plan*, the *2013 Strategy* also emphasises the importance of revitalising the Princes Highway enterprise corridor and promoting the employment function of the corridor through broadening the mix of land uses along the Princes Highway in suitable areas. This will set up the evolution of the economic and employment profile for the corridor to better meet the needs of a growing community.

This Plan will contribute to the employment targets for the wider Eastern District. A review of the employment uses within the Precincts shows that automotive, retail, construction and textiles are the key industries in the study area in terms of land area. The automotive industry also dominates employment, accounting for an estimated 50% of the workforce. The automotive industry is dominant on the Princes Highway in the form of car showrooms; comprising sales, finance, administration and car servicing.

The proximity of Sydney Airport also presents an opportunity for providing supporting services and land uses within Bayside West. This could include airport logistics and freight industries as well as housing and services to support airport workers and short-term accommodation and services for visitors.

This Plan identifies the following key employment changes for the Bayside West Precincts:

- Expansion of the Arncliffe and Banksia centres to allow for increased commercial activity around these transport hubs. The Plan will encourage these centres to become vibrant and active and provide for the growing community.
- A greater mix of land uses, including residential, are appropriate within sections of the Princes Highway around Arncliffe and Banksia. In these locations, the new resident population can easily access public transport services and local shops and services. This wider range of commercial uses will encourage revitalisation and boost economic opportunities along the corridor.
- Aligned with State policy and Council's *2013 Strategy*, the employment opportunities along the Princes Highway will continue to be valued and supported. Building heights and floor space controls along the highway have been increased to encourage revitalisation and renewal.
- In May 2018 Council resolved to undertake a further review of the B6 corridor along Princes Highway as part of a strategic review of its Local Environmental Plan to align with the priorities of the Eastern City District Plan. In the interim, landowners can progress any proposed changes to planning controls through a planning proposal with Council.



The Plan will revitalise the Arncliffe and Banksia centres with a mix of housing, shopping and day-to-day needs for the community (Image of Banksia centre).

The broadened land use zones will allow the market to respond to the changing demands of an increasing residential population and the increasing importance of industries such as the service industry, retail and bulky goods. It will also improve opportunities for people to work close to home and close to public transport. The growth of local jobs should also promote greater self containment and less reliance on private cars and the road network.

### Contamination

A preliminary contamination review has been undertaken to identify both existing and potential contamination sources throughout the Precincts. Historical uses that have led to potential contamination of sites include market gardening, quarrying for road materials, refuse disposal, vehicle sales and maintenance operations, metal fabrication and manufacturing and textile purposes.

The preliminary review concluded that the past uses identified in the Precincts are considered representative of potentially contaminating land use activities can be readily dealt with during later development application stages.

The Department's *Managing Land Contamination – Planning Guidelines – SEPP 55 Remediation of Land* will manage the assessment of the potential for contamination and suitability of the land uses through the development application stage.

### Utilities

An assessment of utility services, in consultation with local service providers, found a full range of services are available across the Precincts. Augmentation for development sites will be assessed through the development application stage as required.

### Hazards

APA Group, the operator of the Moomba to Sydney Ethane Pipeline, identified that small areas of Arncliffe were in a rupture zone. A safety management study concluded that rezoning would not result in any additional risk to the pipeline and that the pipeline operator is identifying and managing the risks appropriately.

An assessment of individual and societal risks associated with rezoning was undertaken using *Hazardous Industry Planning Paper Number 10 – Land Use Safety Planning*. This assessment concluded that the risks posed by the ethane pipeline were acceptable and did not exceed recommended risk criteria.



The Plan includes opportunities for a greater mix of land uses along the Princes Highway and to revitalise the public domain.



## MOVEMENT

### Road network

The Precinct is traversed by a number of State roads, including the Princes Highway and the M5 Motorway; and a number of key regional connectors, including Marsh Street, Forest/Wickham Road and West Botany Street. Strategic traffic and transport studies undertaken as part of the planning indicate the current road network is already at capacity in several key locations.

The F6 extension (Stage 1), a southern connection from Arncliffe to President Avenue at Kogarah, is currently being investigated by the NSW Government to connect the M5 to the southern suburbs of Sydney and the Illawarra.

The precinct planning for Bayside West includes identified transport infrastructure upgrades to support the future growth in the Plan. These are detailed at Appendix A, and include both State, regional and local upgrades such as intersection works, road extensions and realignments.

The F6 extension and the recommended road infrastructure upgrades will improve traffic conditions in the Bayside West Precincts, reducing through-traffic along key corridors, including the Princes Highway, at key intersections.

### Public transport

The Arncliffe and Banksia Precincts have good access to public transport infrastructure, with the majority of the sites within a 10 minute (800 metre) walk to railway stations on the T4 Illawarra and T2 Airport railway lines. The area is also well serviced by bus routes, including services east of the railway connecting to Central Sydney, Bondi Junction and Randwick (routes 442,400 and 410) and a local bus route west of the railway line (route 473).

As part of the Precinct planning for Bayside West, the capacity of the existing public transport services for the Precincts has been reviewed with regard to State future planning for public transport (*NSW Future Transport 2056*). This Plan identifies that a review of current public transport services, operating procedures and potential upgrades to rail infrastructure is a key requirement to support growth.

The Plan includes recommendations for further investigations and improvements to the public transport network to support the future growth of Bayside West at Appendix A.



*The Plan seeks to improve connections across the Precincts to make it easier and safer to get around.*

## Pedestrians and cycling

Pedestrian connections between major destinations in the Precinct are limited due to topography and physical barriers. The rail corridor, the Princes Highway corridor and Marsh Street form barriers to east-west pedestrian movement and there are limited crossing points on these major roads, with traffic signals set to prioritise vehicular traffic.

A new pedestrian tunnel adjacent to the Wollongong Road underpass provides a safe path for pedestrians away from traffic and a new cycleway is provided on the southern side of Marsh Street to improve connectivity for cyclists across Cooks River.

Dedicated cyclist facilities within the area include a mix of on- and off-road facilities. Cycle routes radiate out from Wolli Creek and on-road cycle lanes are provided along the western side of the rail corridor. The route includes parts of Arncliffe Street, Firth Street, Somerville Street, Gore Street, Roach Street and Railway Street. While a level of north-south connectivity is provided at the train stations, there is limited east-west connectivity across the Precincts.

The Plan seeks to improve connections for pedestrians and cyclists through the following initiatives:

1. The Department has contributed \$3 million to Bayside Council through the Precinct Support Scheme funding to develop a Public Domain Plan and Technical Manual that will deliver street works and guide any future development applications in Arncliffe town centre and along the Princes Highway.
2. Funding towards a new shared pedestrian and cycle path following the Cooks River, through the Cooks Cove area. This link will provide the missing link to the Botany Bay to Homebush Bay regional cycle network. The location for this path will be subject to detailed design as part of future investigations.
3. Funding towards improved pedestrian and cycling crossings across Marsh Street and Princes Highway to provide better access between Cooks Cove and the Wolli Creek railway station.
4. Footpath connections throughout the Precincts so that they are safe, well-lit and have pedestrian crossings at key locations.
5. Funding towards a new pedestrian and cycling connection along a section of the heritage listed Southern and Western Suburbs Ocean Outfall Sewer.
6. New on-road cycleways connecting the railway stations to the Eve Street Cycleway and Wolli Creek to form part of a new east-west cross regional route.
7. Funding towards the construction of a new pedestrian and cycling connection across the Cooks River between Cahill Park and Tempe Recreation Reserve.
8. Improving the existing north-south on-road cycleway between Banksia and Arncliffe stations.

The Plan will inform updates to the *Rockdale Development Control Plan 2011* and relevant *Section 7.11 Development Contributions Plan* by Bayside Council to ensure the upgrades proposed for pedestrian and cycling infrastructure are provided for as the area develops. Funding will be provided towards those items identified above that are included in the Draft SIC.

More information regarding the implementation of the future pedestrian and cycling network improvements can be found at Appendix A.



## LANDSCAPE

### Open space

Open space within the Precincts is primarily used for passive recreation and playgrounds. Smaller pocket parks can be found on residual sites, at the edge of major infrastructure – these are underutilised due to their marginal location. Access to open space is limited by major roads, making walkability difficult and unsafe in places.

As part of the precinct planning a *Green Plan* has been prepared. The *Green Plan* documents an audit of the open space available to the Precincts with recommendations for future open space planning across the Precincts to meet key community needs. The *Green Plan* tells us that the Precincts are currently served by 22 hectares of open space at:

- Arncliffe Park – a 4 hectare area of open space within a 9 minute (700m) walk to the Arncliffe Station. It is used for both passive and active recreation and includes an oval and playground.
- Gardiner Park – a 3.6 hectare area of open space approximately a 10 minute walk from the Banksia Station.
- Wooroona Reserve – 0.15 hectares with a playground, adjoining Arncliffe Station.

- Belmore Street Reserve, Almond Street Reserve, Empress Reserve, Hattersley Street Reserve and 46 Princes Highway – small pocket parks all less than 0.15 hectares in size.
- Marinea Street Reserve – 0.2 hectares, located at the north-eastern boundary of the Banksia Precinct. It provides local open space for surrounding residents and includes a small playground.
- Cahill Park – north of the Precincts facing the Cooks River.
- Large parks at the Barton Park Wetlands, Marsh Street Reserve, Eve Street Reserve and Riverine Park in Cooks Cove.

Community feedback highlighted the importance of open space that is accessible, functional and adaptable to different stages of life for the local residents. This Plan seeks to achieve equitable access to open space for all existing and future residents in Bayside West as follows:

- Improve pedestrian and cycle links to the network of open spaces to enhance connectivity towards district and regional open space facilities.
- Upgrade local parks and playgrounds to maximise the usage of existing open spaces.
- Plant more trees and 'green' the area.
- Protect natural habitat and acquire recreational spaces.

Based on feedback from the community and Bayside Council these are the key open space moves that have been incorporated into the Plan:

- The Department is delivering a new park next to Arncliffe Station on the corner of Arncliffe Street and Burrows Street. This park will be at least 7,000 square metres in size and includes recreation space, childrens play areas, an off-leash dog area and opportunities for community facilities. The park will be masterplanned in collaboration with Bayside Council and the local community to ensure it meets local needs. It is proposed that Special Infrastructure Contribution (SIC) funds will contribute towards land acquisition and embellishment of the new park.
- The Department has committed to upgrading two parks and a revamp of the Arncliffe town centre through the Precinct Support Scheme funding. The funding will see a \$4.5 million upgrade to Arncliffe Park and \$2.5 million allocated for Gardiner Park improvements, these include the installation of synthetic playing fields which are much needed by the local sporting community and lighting and safety upgrades.
- Wooroona Reserve, Marinea Reserve and Marsh Street Reserve have been identified as parks to be improved.
- The Department (through the Draft SIC) will provide funding towards the integration of the heritage Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS) into the pedestrian network which could include the creation of a linear park.

- The Plan has also identified opportunities to improve physical and visual connections to these new and existing open space areas. This includes planning for new pedestrian connections throughout the Precincts and implementing improvements to existing walking and cycling links.

Further detail regarding the implementation of the open space projects is included in Appendix A.

In addition, the redevelopment of areas within the Precincts provides an opportunity to open up private sites for public open space as large sites redevelop. The following potential sites have been identified and are subject to further investigation through the development assessment process:

- Eden Street Park – a new park (up to 0.4ha) could be provided close to the Arncliffe town centre, to the east of the railway station, between Eden Street and the Princes Highway as part of any future redevelopment of the social housing estate.
- Allen Street Park – a new park (up to 0.5ha) could be located adjoining the boundary with Wollie Creek incorporating the heritage listed SWSOOS as part of any future development of the Ford Service Centre. This park could provide playground facilities and passive recreation opportunities.



The new park to be delivered adjacent to Arncliffe Station will include an off-leash dog park for the community to enjoy.



Provide opportunities for new open space areas throughout the Precincts. Artists impression of new Arncliffe Station Park, Burrows Street.



*The Department is delivering a new park next to Arncliffe Station on the corner of Arncliffe Street and Burrows Street. This park will be masterplanned in collaboration with Bayside Council and the local community to ensure it meets local needs.*

### Flooding

Arncliffe and Banksia straddle a ridgeline that slopes down towards Cooks Cove and the Cooks River. The top of the ridge generally follows Forest Road with the lower, flatter areas located to the east of the rail corridor. The geology is sandstone slope formations and alluvial floodplains.

The Precincts overlay the Wolli Creek, Bonnie Doon, Spring Street and Eve Street drainage catchments. As Arncliffe and Banksia are existing urban areas, the majority of the stormwater flows are managed through the existing drainage infrastructure.

The flood studies undertaken for the area demonstrate both of these areas are subject to some local flooding following significant rainfall events, and upgrades to the existing drainage infrastructure will be required as development occurs to support future growth. The works generally include improvements to the existing piped drainage systems, works to improve run off flows and modifications to the riverbank levee to improve drainage capacity.

More information regarding future drainage upgrades and flood proofing to be delivered to accommodate new development can be found in Appendix A.

The properties within the Precincts subject to flooding hazards are identified on the *Rockdale LEP 2011 Flood Planning* map. Any redevelopment of these properties will continue to be subject to these controls and future development will continue to be subject to water sensitive urban design controls in the *Rockdale Development Control Plan 2011*.

### Views

The significant ground level changes across the Precincts result in district wide views from high points. Views towards the Sydney CBD can be achieved from the northern and eastern parts of Arncliffe and Banksia and towards the Cooks River and Botany Bay from the Forest Road ridgeline.

The Plan recognises that the steepness of the land allows the definition of view corridors toward the city centre skyline and the nearby Cooks River. This is reflected in the built form opportunities recognised for the Precincts and shown in the changes to building heights set out in the rezoning plan (pages 30–37). The green infrastructure strategy for open space and pedestrian and cycling connections has also taken into account these corridors to further enhance their value.

The *Rockdale Development Control Plan 2011* also includes guidelines requiring view corridors to landmarks and significant heritage items to be protected. This specifically identifies the views of the St Francis Xaviers Church and St David's Church spires on Forest Road as key landmarks and identifies other significant views towards the Cooks River, CBD and Botany Bay.

These views will continue to be key considerations for future planning and appropriate view protection will be addressed in future development to encourage the protection of and sharing of views.

## Vegetation and ecology

Due to the urban nature of Arncliffe and Banksia, vegetation in these areas is limited. It includes remnants of the original vegetation communities (Swamp Oak Floodplain Forest and Sandstone Woodland) alongside introduced native and exotic tree species. A well-distributed tree canopy characterises the residential areas on the west side of the railway line. These zones have a higher coverage due to generous building setbacks from street frontages allowing for trees in private and public land. To the east of the railway line, the tree canopy is inconsistent and very limited in places where change has already occurred, including along the Princes Highway corridor.

The Department's planning acknowledges that the integration of green infrastructure and tree canopy in our urban environments provides benefits such as:

- Contributing to an area's character and sense of place.
- Creating comfortable environments for walking and cycling.
- Improvements to habitat and biodiversity.
- Improve perceived noise and smell aesthetics of streets.
- Better shade and thermal comfort (from trees rather than shade structures).
- Increased privacy and buffering to adjacent properties.

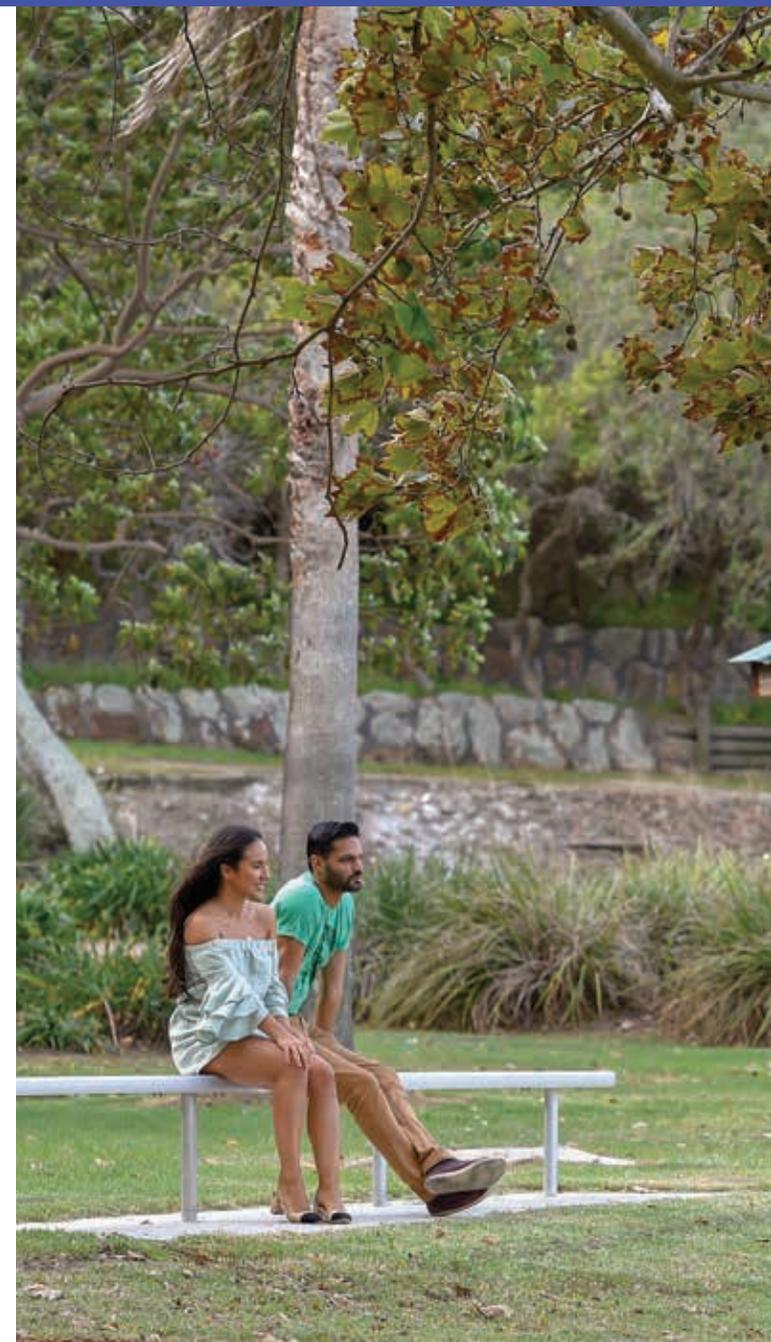
This Plan identifies tree planting priorities throughout the Precincts, these include:

- Increased tree planting on larger road corridors along Princes Highway and near commercial areas.
- Enhance the tree canopy in the public domain to maximise comfort and enhance the liveability, health and well-being of both the community and the environment.
- Plant tree species that support the local character and deliver an increased tree canopy.

The Green Plan prepared for Arncliffe and Banksia maps the existing tree canopy coverage, proposes a target percentage tree canopy coverage and has developed a tree canopy plan to achieve this target. The current tree canopy cover is 18.2% in the urban areas of the precincts and 20.6% in the suburban areas, shown in Figure 3. The Green Plan proposes a 25% target for tree canopy coverage across the precincts.

The Department will work with Council to provide funding as part of the *5 Million Trees for Greater Sydney* program to increase tree canopy coverage in the precincts.

The opportunities for tree planting will also be realised through the development of private sites and adjoining public domain works, the Department's committed funding for open space and public domain upgrades and Council's future green planning.



*The Plan will maximise the green infrastructure available to the community with new tree planting priorities (Image of Gardiner Park).*

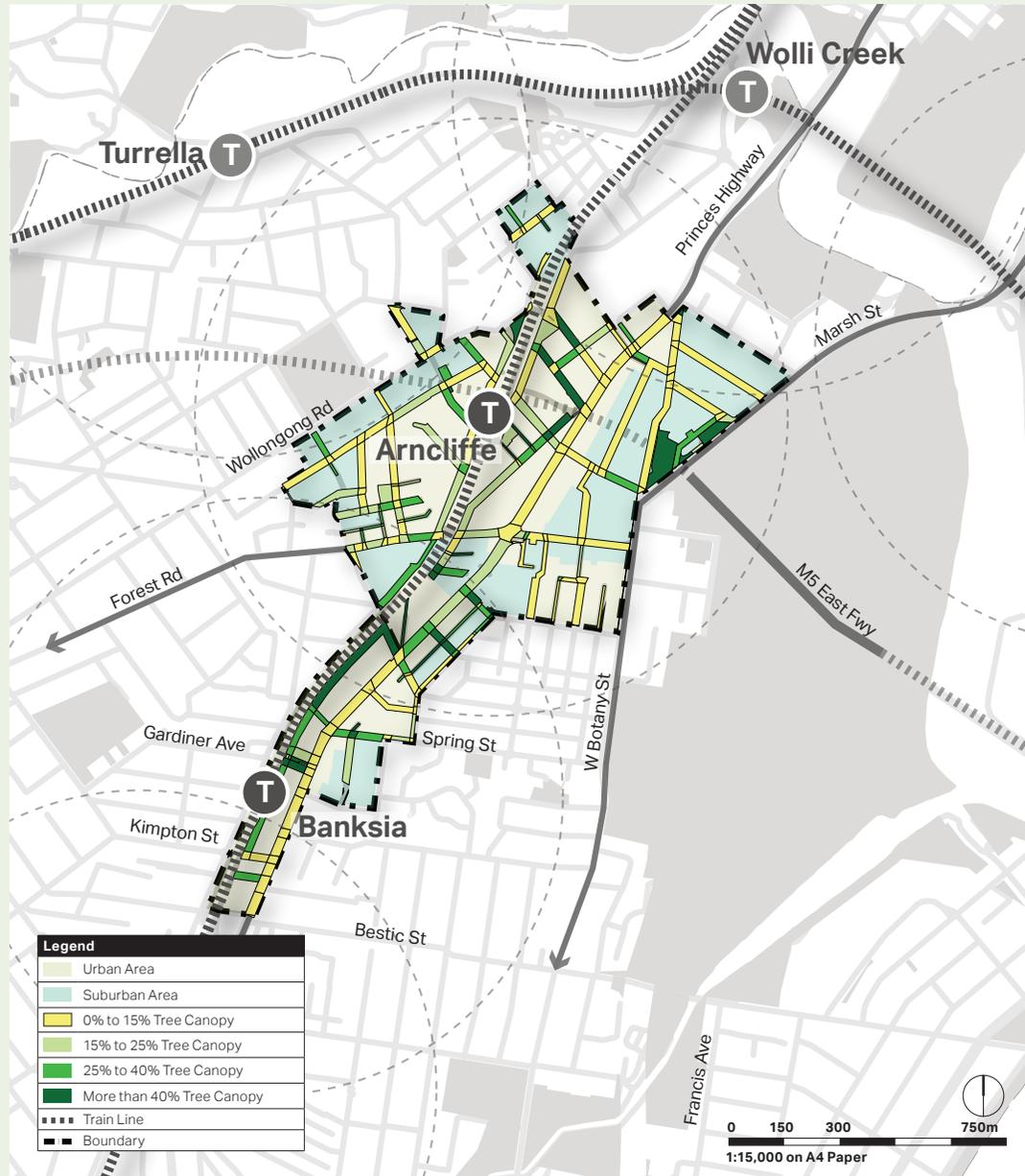


Figure 3: Map showing existing tree canopy coverage in the Arncliffe and Banksia Precincts (Green Plan, 2018)



## BUILT FORM

### Building massing

This Plan uses the following key principles to determine the relevant built form controls for heights across the Precincts:

#### 1. Ensure Sydney Airport height restrictions are met

Sydney Airport height restrictions are a key consideration in determining appropriate heights within the Precinct. The proximity to Sydney Airport requires development to meet air space restrictions for building heights.

There are two air space controls that apply:

1. Obstacle Limitation Surface (OLS) – defining the airspace in proximity to the airport which should be kept free of obstacles that may cause danger during visual operations.
2. PANS-OPS surface – is the upper height limit which should be kept free of obstacles at all times. The PANS-OPS surface varies across the Precincts. All new buildings are required to be below the PANS-OPS heights.

#### 2. Density increases in accessible locations

Taller buildings are located closest to the town centres and public transport connections to encourage the greatest densities in accessible locations. This move leverages off existing and planned transport infrastructure and bring people closer to homes, jobs and the services they need. Increased building height and density in the

Arncliffe and Banksia town centres will encourage the redevelopment of the centres and reinforce the role and function of the centres as key activity nodes.

#### 3. Tallest buildings on key opportunity sites

The tallest buildings in the Precinct are planned on larger sites in single ownership which have the potential to provide new areas of public open space, achieve improved design outcomes and may deliver other government objectives such as provision of social and affordable housing.

#### 4. Increased density on the Princes Highway

An increase to building height and density is implemented along the Princes Highway to encourage revitalisation and redevelopment within this highly accessible corridor and achieve pedestrian activation and public domain improvement outcomes.

#### 5. Increased density in areas adjoining existing high density

Increases to building heights and densities are located close to areas of existing high density residential development including the Wollli Creek development area.

#### 6. Low density building form is maintained in areas adjoining existing low density

Low rise development is located adjoining existing low density residential areas to provide a transition in heights and to ensure development is in keeping with local character.

#### 7. Maintain identified views

The significant ground level changes across the Precincts result in district wide views from high points. Views towards the Sydney CBD can be achieved from the northern and eastern parts of Arncliffe and Banksia and towards the Cooks River and Botany Bay from the Forest Road ridgeline.

The Plan recognises that the steepness of the land allows the definition of view corridors toward the city centre skyline and the nearby Cooks River. This is reflected in the built form opportunities recognised for the Precincts.

#### Feasibility testing

Development feasibility is a key planning consideration to ensure planning outcomes can be realised and positive renewal outcomes can be achieved.

The viability of proposed land uses in the Precincts has been tested to determine appropriate built form controls. The analysis took into consideration existing land values, unit sales and size of comparable developments, construction costs, council fees and charges and additional costs.

The findings of the testing confirmed minimum density thresholds for land uses. The minimum density thresholds will be used to inform any future rezoning plan for the Arncliffe and Banksia Precincts to ensure feasible development can be achieved.



*The tallest buildings are planned on larger sites in single ownership which have the potential to provide new areas of public open space, achieve improved design outcomes and may deliver other government objectives such as provision of social housing.*

*The Plan will enable a new built form across the precincts to provide for a growing community.*

# DELIVERING THE PLAN

## The key steps to deliver the Plan are:

- Implementing new planning controls to support the Plan.
- Supporting Bayside Council to undertake a review of its local environmental plan (LEP).
- Identifying the infrastructure needs to support future growth in the Plan
- Identifying the responsibility for delivery and funding sources for the infrastructure.

## Future Rezoning of Arncliffe and Banksia

The future rezoning of the Arncliffe and Banksia Precincts is proposed to implement the Vision of the Plan. The Plan will inform changes to the land use zoning, built form and supporting controls in the *Rockdale LEP 2011* applicable to development within the Arncliffe and Banksia Precincts. The key elements of a future rezoning will include:

### Changes to land use zoning in the Precincts to support:

- expansion of the Arncliffe and Banksia centres to allow for increased commercial activity and residential living around these transport hubs
- a new park adjacent to Arncliffe Station

- increased housing supply in convenient locations, close to transport, jobs and services
- a greater mix of land uses, including residential, within sections of the Princes Highway in accessible locations around Arncliffe and Banksia
- the continued growth of employment opportunities along the Princes Highway.

### New building heights and floor space controls that:

- support intensification of the new land use zoning and incentivise renewal of these areas
- support the renewal of key sites that can provide public areas of open space and realise key government objectives towards social and affordable housing
- are sensitive to areas of built form transition, low rise interfaces, heritage considerations, view protection and airport restrictions.

**Controls to implement active frontages** in mixed use areas to promote passive surveillance, activation and good design outcomes.

## Accelerated Council LEP Review

The area west of Arncliffe Station will be the subject of further investigation to consider opportunities for greater masterplanning and high quality urban design outcomes. The planning framework for this area will be finalised before or at the same time as Bayside Council adopts its comprehensive LEP in 2020.

The NSW Government has provided Bayside Council \$2.5 million as part of the Accelerated Councils Program to assist with Council's comprehensive review of its LEP within two years. The Department will continue to work with Council to achieve the best planning outcomes for the area.

In the interim, landowners can progress any proposed changes to planning controls through a planning proposal with Council.

## Precinct Support Scheme

Under the Precinct Support Scheme, the NSW Government has provided funding for local infrastructure projects that will directly benefit the community. Bayside Council's application of allocation of \$10 million has been awarded and includes:

- a \$4.5 million upgrade to Arncliffe Park
- a \$2.5 million upgrade to Gardiner Park
- \$3 million to develop a Public Domain Plan and Technical Manual for the Arncliffe town centre and along the Princes Highway.

## New park at Arncliffe

The Department is delivering a new park next to Arncliffe Station on the corner of Arncliffe Street and Burrows Street. This park will be at least 7,000 square metres in size and includes recreation space, childrens play areas, an off-leash dog area and opportunities for community facilities. The park will be masterplanned in collaboration with Bayside Council and the local community to ensure it meets local needs. It is proposed that Special Infrastructure Contribution (SIC) funds will contribute towards land acquisition and embellishment of the new park.

## Infrastructure Funding and Delivery

The infrastructure schedule at Appendix A has been developed to set out the State, regional and local infrastructure required to support the growth that is identified in the precinct planning for Bayside West,

and nominates the body responsible for the delivery and the funding source. The infrastructure schedule has been developed through technical consultant input, community engagement and collaboration with Bayside Council and other government agencies.

## Special Infrastructure Contribution

The Department will exhibit a draft Special Infrastructure Contribution (SIC) scheme for the Bayside West Precincts to provide funding for State and regional infrastructure demands required to support growth from precinct planning. The draft SIC is a levy that developers will be required to pay to contribute to the cost of providing regional infrastructure upgrades. The SIC rate has been determined through an analysis of the Precincts' growth patterns, infrastructure needs and costs, and development feasibility to ensure any change does not impact on the development feasibility.

## Local infrastructure upgrades

A number of upgrades to local infrastructure have also been identified. These include local road upgrades, upgrades to the local drainage infrastructure and provision of additional community infrastructure, such as upgrades to open space and community facilities.

Bayside Council are responsible for undertaking a review of the relevant local infrastructure contribution plans developed under Section 7.11 of the *Environmental Planning and Assessment Act 1979* to obtain the relevant funding for additional local works.



# FUTURE PLANNING

## Development applications

New land use zoning, built form and supporting controls for the Arncliffe and Banksia Precincts within the *Rockdale LEP 2011* will be implemented to provide a framework for development applications to be prepared and assessed under.

## Development Control Plan

Bayside Council are responsible for preparing a Development Control Plan (DCP) for the Arncliffe and Banksia Precincts. The DCP will provide clear design guidelines for new developments within the Precincts, such as urban design principles for the street network, through-site links, active frontages, building and landscape setbacks, street wall heights and the open space network.

Bayside Council will generally be the consent authority for the majority of development applications in Arncliffe and Banksia, with the following exceptions:

- Where development exceeds a value of \$5 million and up to \$30 million, Bayside Council will refer a development application to a Local Planning Panel, an independent body established by Council.
- Other development with a value exceeding \$30 million will be determined by the Sydney Eastern

City Planning Panel.

- Where development on the Land and Housing Corporation site (Eden Street, Arncliffe) exceeds a value of \$30 million, it is State Significant Development and the Minister for Planning is the consent authority.

## Design Excellence

The rezoning of Arncliffe and Banksia Precincts will include a design excellence provision to ensure new buildings achieve the highest standard of architectural, urban and landscape design. All new buildings will be assessed against design excellence principles, buildings over 3 storeys will be subject to review by an independent design review panel, and all buildings over 12 storeys will undergo a design competition process. Council's DCP will also include further design guidance.

## Monitoring

While the speed of development will depend on market forces, the Department anticipates this will occur gradually over the 20 year life of the Plan. To provide a valuable evidence base to inform service and infrastructure delivery, the Department will monitor and report annually on the rate of development activity.





# APPENDIX A

The following tables provide an overview of the infrastructure projects that have been identified to support growth in the Bayside West Precincts.

**TABLE 1: CURRENT PROJECTS**

Item	Delivery	Status
New M5 motorway, to link the upgraded King Georges Road Interchange on the existing M5 East Motorway at Beverly Hills and run via twin tunnels to St Peters	TfNSW	The new M5 is currently under construction and will be open to traffic early 2020.
Upgrade rail infrastructure to increase capacity and services	TfNSW	Rail network planning to increase services to Southern Sydney is underway.
Upgrade to Banksia and Arncliffe Stations	TfNSW	The Arncliffe Station upgrade was completed in 2016. TfNSW to undertake scoping investigations for Banksia Station upgrade.
Improvements to bus services to provide better connectivity through the precincts and links to surrounding key centres.	TfNSW	Need for improvements to be investigated by TfNSW as part of regular monitoring and planning program.
F6 extension (Stage 1) to connect the new M5 to Sydney south and the Illawarra.	TfNSW	Stage 1, a southern connection from Arncliffe to President Avenue, Kogarah, was announced in October 2017. Detailed planning by TfNSW Council is underway.

**TABLE 2: REGIONAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions	
<b>OPEN SPACE</b>				
O1	New park next to Arncliffe Station on the corner of Arncliffe Street and Burrows Street.	DPE in collaboration with Council	To be partially funded by Special Infrastructure Contribution or satisfactory arrangements.	This park will be at least 7,000sqm and masterplanned in collaboration with Bayside Council and the local community to ensure it meets local needs (Green Plan, 2018).
<b>PUBLIC TRANSPORT</b>				
P1	New bus stops on Marsh Street	Cooks Cove developer & TfNSW/Council	Bus stops to be provided prior to construction certificate for first dwelling at Cooks Cove. To be partly funded by Special Infrastructure Contribution or satisfactory arrangements.	New bus stops are required on Marsh Street to accommodate access from Cooks Cove to the bus network (AECOM, 2016).
<b>REGIONAL / STATE ROAD NETWORK</b>				

**TABLE 2: REGIONAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions	
R1	Improvements to Marsh Street and Airport Drive. Including improved pedestrian connections to the Giovanni Bridge and upgraded pedestrian crossing of Marsh Street (potential pedestrian over pass).	RMS/TfNSW/ Cooks Cove developer	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Improvements to Marsh Street and Airport Drive will be required to support the growth in traffic volumes from Cooks Cove precinct (AECOM, 2016).
R2	Upgrades to the Kyle Street / West Botany Street intersection	RMS/TfNSW	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Upgrades to the Kyle Street / West Botany Street intersection to allow left turn from Kyle Street onto West Botany is required. Priorities for infrastructure delivery will be monitored in consultation with delivery agencies. (AECOM, 2015).
R3	Upgrades to the existing signalised intersection at Princes Highway / Burrows Street	RMS/TfNSW	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Upgrades to the Princes Highway / Burrows Street intersection are required to permit movements from Kyle Street (AECOM, 2015).
R4	Review the configuration of the Duncan/ West Botany Streets intersection.	Council/RMS/TfNSW	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Review of the configuration of the Duncan and West Botany Streets intersection to accommodate growth (AECOM, 2015).
R5	Upgrades to the Allen Street / Princes Highway intersection.	Council/RMS/TfNSW	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Upgrades to the Princes Highway/Allen Street intersection are required to accommodate growth (AECOM, 2015).
R6	Upgrades to the intersection of Forest Road at Firth and Eden Streets.	Council/RMS/TfNSW	Priorities for infrastructure delivery will be monitored in consultation with delivery agencies.  To be funded by Special Infrastructure Contribution or satisfactory arrangements	Review of the intersections of Forest Road with Firth and Eden Streets are required with consideration of constraints posed by nearby rail overpass bridge. (AECOM, 2015).
R7	Upgrade to the Spring Street / Princes Highway intersection.	Council/RMS/TfNSW	Detailed planning, timing and thresholds to be investigated by RMS and TfNSW as precincts develop.  To be partly funded by Special Infrastructure Contribution or satisfactory arrangements.	Upgrades to Spring Street / Princes Highway intersection are required to accommodate growth (AECOM, 2015).

**TABLE 2: REGIONAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions	
<b>IMPROVEMENTS FOR PEDESTRIAN AND CYCLISTS</b>				
P1	Cahill Park to Tempe Recreation Reserve - new pedestrian and cycling bridge over the Cooks River.	Developer/ Council	To be funded by Special Infrastructure Contribution or satisfactory arrangements.	Opportunities exist to provide a new walking and cycling connection across the Cooks River, from Cahill Park to Tempe Recreation Reserve to link key open space areas and provide access to a broader range of recreation. (Green Plan, 2018).
P2	Princes Highway to Arncliffe West - new pedestrian and cycling path following a section of the SWSOOS.	Developer/ Council	To be funded by Special Infrastructure Contribution or satisfactory arrangements.	The linear connection is an opportunity to enhance and utilise the currently neglected SWSOOS and surrounds and can improve access by providing connections to the wider neighbourhood (Green Plan, 2018).
P3	A foreshore pedestrian and cycling path along the Cooks River.	Cooks Cove Developer/ Council	Construction of path to commence prior to construction certificate for first dwelling at Cooks Cove.  To be funded by Special Infrastructure Contribution or satisfactory arrangements.	A direct foreshore bicycle path along Cooks River with improved connectivity across Muddy Creek should be provided (AECOM, 2016).
P4	New pedestrian and cycling crossing of the Princes Highway from Cahill park to Brodie Spark Drive.	Developer/ Council	To be funded by Special Infrastructure Contribution or satisfactory arrangements.	An upgrade to the Princes Highway crossing from Cahill Park is required to improve access to Woolli Creek Station, consider a pedestrian/ cycling overpass (AECOM, 2015).
<b>EDUCATION</b>				
E1 and E2	New school infrastructure.	Department of Education	Provision for additional school infrastructure is to be allowed for, as agreed to by Department of Education.  Contribution towards additional student spaces to be partly funded by Special Infrastructure Contribution or satisfactory arrangements.	Subject to detailed review and asset planning by the Department of Education.

**TABLE 3: LOCAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions
<b>ROADS</b>			
Upgrade to rail underpass at Railway Street and Subway Road	Council/ Developer	Council to undertake preliminary design and costings of upgrades in consultation with TfNSW and RailCorp for inclusion in the Development Control Plan and Section 7.11 Plan review.	Upgrades to the rail underpass at Railway Street and Subway Road are required to accommodate growth (AECOM, 2015).

**TABLE 3: LOCAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions
<b>ROADS</b>			
Charles Street realignment	Council/ Developer	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	Upgrades to the local road network required to support anticipated growth (AECOM, 2015).
Gertrude Street extension	Council/ Developer		
Intersection upgrades at: <ul style="list-style-type: none"> <li>• Wolli Creek Road / Wollongong Road</li> <li>• Fripp Street / Wollongong Road</li> <li>• Dowling Street / Wollongong Road</li> <li>• Wickham Road / Charles Street</li> </ul>	Council/ Developer		
<b>OPEN SPACE</b>			
Upgrade to existing parks at Wooroona Reserve, Marinea Reserve and Marsh Street Reserve	Council/ Developer	To be partly funded by Section 7.11 Contributions or satisfactory arrangements.	Opportunities to upgrade existing open space and provide new areas of well-designed and functional open space should be considered in future planning (Council, 2014).
Upgrades to Gardiner Park and Arncliffe Park, including the installation of synthetic playing fields and lighting and safety improvements.	Council/ Developer	Precinct Support Scheme (PSS) funding approved.	To be undertaken in accordance with Council's application for PSS approval.
Investigate new local parks as part of redevelopment of sites on Eden Street (Land and Housing Corporation Site) and Allen Street site (Ford Service Centre).	Developer	To be partly funded by Section 7.11 Contributions or satisfactory arrangements.	Investigations into new parks to be incorporated into any development application for these sites.
<b>IMPROVEMENTS FOR PEDESTRIANS AND CYCLISTS</b>			
New on-road cycle paths along: <ul style="list-style-type: none"> <li>• Wollongong Road and Allen Street</li> <li>• Wollongong Road to Bonar Street via Wardell Street / Avenal Street / Marinea Street</li> <li>• Burrows Street / Kyle Street</li> <li>• Duncan to Allen Street</li> <li>• Spring Street (including improved crossing of West Botany Street).</li> </ul>	Council/ Developer	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	Upgrades required to the local road network to support anticipated growth (AECOM, 2015).
Upgrades to the existing cycle network including: <ul style="list-style-type: none"> <li>• North-south route between Arncliffe Station and Banksia Station: Arncliffe Street / Burrows St / Eden Street north</li> </ul>	Council/ Developers	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	Upgrades recommended to the local cycle network to support anticipated growth (AECOM, 2015).

**TABLE 3: LOCAL INFRASTRUCTURE UPGRADES**

Measure	Delivery	Implementation and actions	Assumptions
<b>IMPROVEMENTS FOR PEDESTRIANS AND CYCLISTS – CONTINUED</b>			
Improvements to pedestrian crossings at: <ul style="list-style-type: none"> <li>Forest Way at Eden Street / Wardell Street / Arncliffe Street / Allen Street roundabout</li> <li>Wollongong Road / Firth Street roundabout</li> </ul>	Council/ Developers	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	Upgrades recommended to pedestrian facilities on the local road network to support anticipated growth (AECOM, 2015).
Improved pedestrian facilities, on new and existing streets at key locations, including along: <ul style="list-style-type: none"> <li>Wollongong Road close to Arncliffe Park Burrows Road, Godfrey Street and Gardiner Avenue</li> <li>Spring Street</li> </ul>	Council/ Developers	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	
<b>DRAINAGE AND FLOODING</b>			
Upgrade trunk drainage across the catchment and upgrade existing drainage network, including: <ul style="list-style-type: none"> <li>Drainage network along Wollongong Road from Dowling Street to Bonar Street, and under the railway line</li> <li>Additional inlets and drainage works at Valda Avenue</li> <li>Pipe upgrades at Eve Street Brick arch openings under sewer carrier</li> <li>Modifications to Bonnie Doon Channel</li> <li>Dedicated overland flow paths</li> </ul>	Council/ Developers	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	Arncliffe and Banksia subject to some areas of flooding following significant rainfall events and require upgrades to the existing drainage infrastructure to accommodate future growth (Mott MacDonald, 2015).
New flood storage and detention basins to mitigate future flooding			
New levee to provide additional drainage capacity and reduce inundation from the Cooks River			
<b>COMMUNITY INFRASTRUCTURE</b>			
A new district level branch library and community centre at Arncliffe	Council/ Developers	Council to undertake preliminary design and costings of upgrades for inclusion in the Development Control Plan and Section 7.11 Plan review.	New population anticipated requires a new district level branch library and community centre at Arncliffe (Eltons, 2015).
Provision of new active recreation facilities and community facilities at Cooks Cove		Construction of recreation areas to commence prior to construction certificate for first dwelling at Cooks Cove.  To be partly funded by Section 7.11 Contributions or satisfactory arrangements.	



