

Department of Planning, Industry and Environment

Draft Ingleside Place Strategy

A draft Place Strategy for a new
growth area on the Northern Beaches

May 2021

Acknowledgement of Country

The NSW Department of Planning, Industry and Environment acknowledges the Traditional Custodians of the land, the Gayamaygal and Garigal Aboriginal Clans, and pays respect to all Elders past, present and emerging.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

Aboriginal people take a holistic view of land, water and culture and see them as one, not in isolation to each other. The draft Ingleside Place Strategy is based on the premise upheld by Aboriginal people that if we care for Country, it will care for us.

Find out more:

www.dpie.nsw.gov.au

Title: Draft Ingleside Place Strategy

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Cover image: Bushland north of the Ingleside Scout Camp, Bloodwood Road. Image courtesy of Quentin Jones.

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Photography

Katandra Bushland Sanctuary, and bushland conservation. Image courtesy of Quentin Jones.

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Photography

Rural living on Wirreanda Road. Image courtesy of Quentin Jones.

Executive summary

About the Place Strategy

The draft Ingleside Place Strategy (draft Place Strategy) represents a new way of thinking for a well-loved area with outstanding potential for resilient, sustainable and well-managed growth. It looks to enhance the features and character that people love, while creating new homes, new opportunities for social connections and services and new supporting infrastructure.

The draft Place Strategy draws from the Greater Sydney Region Plan *A Metropolis of Three Cities*, the North District Plan and Council's Local Strategic Planning Statement, *Towards 2040*. It is the outcome of a process led by the Department of Planning, Industry and Environment (the Department) in collaboration with Northern Beaches Council, which has been guided by State agency inputs, and with feedback from the community and stakeholders. The Department will continue to lead the planning process for the finalisation of the Place Strategy and accompanying rezoning.

The draft Place Strategy reimagines Ingleside by:

- creating a community hub, based on a community centre, local shops and open space
- creating connections within the precinct and to adjoining places
- creating links to the surrounding areas of bushland, to help the movement of both people and wildlife
- identifying areas of significant vegetation and communities
- identifying areas that can safely and sustainably accommodate development
- developing land use and built form controls and guidelines that follow principles of resilience and ecologically sustainable development and achievement of a low carbon precinct.

Location

Ingleside is nestled between Bayview and Elanora Heights, Ku-ring-gai Chase and Garigal national parks, and Terrey Hills and Duffys Forest. It sits within a bushland landscape, and offers an elevated setting with sea views, and access to nearby retail and community facilities.

Ingleside was first identified as a potential future urban area in the mid-1960s. However, its variable topography, array of riparian corridors and watercourses, biodiversity conservation areas, access and servicing constraints, and bushfire risks create constraints to development.

Work to date

A draft Ingleside Land Use and Infrastructure Implementation Plan was released for public exhibition and consultation in late 2016. It envisaged 3,400 dwellings, and areas for biodiversity conservation, associated water-related services and urban amenities.

Feedback raised in submissions included concerns around traffic, public transport, bushfire safety, environmental conservation, density controls, and land acquisition.

Given the bushfire safety concerns arising from the 2016 public exhibition and consultation, a Bushfire Risk Assessment was undertaken in 2018 which showed the potential for Ingleside to be exposed to extreme catastrophic bushfire risk, and raised concerns about the ability to evacuate the area safely in a bushfire event. In response, the 2016 planning package was not continued and an alternative approach commenced, focused on building a safe community, resilient to bushfire risks.

The Department has been working with Northern Beaches Council, the community and State agencies on a new development framework for Ingleside. The draft Place Strategy identifies opportunities for residential and other land uses supported by infrastructure. It draws on previous findings, the prior community consultation, and new technical studies.

South side of Mona Vale Road

The draft Place Strategy defines a reduced area for development in direct response to bushfire impact issues, bushfire evacuation capacity and servicing requirements: approximately 980 additional dwellings south of Mona Vale Road in an area of about 180 ha.

This location and yield will safely accommodate risks from bushfires while meeting evacuation requirements. This is the result of the Department working closely with emergency services agencies to obtain endorsement of this new development framework.

The location also reflects the environmental values of the landscape, ensuring new development does not impact on the habitat of important native flora and fauna.

This draft Place Strategy will support decision-making around the right locations for new housing, as well as new or expanded facilities and services.

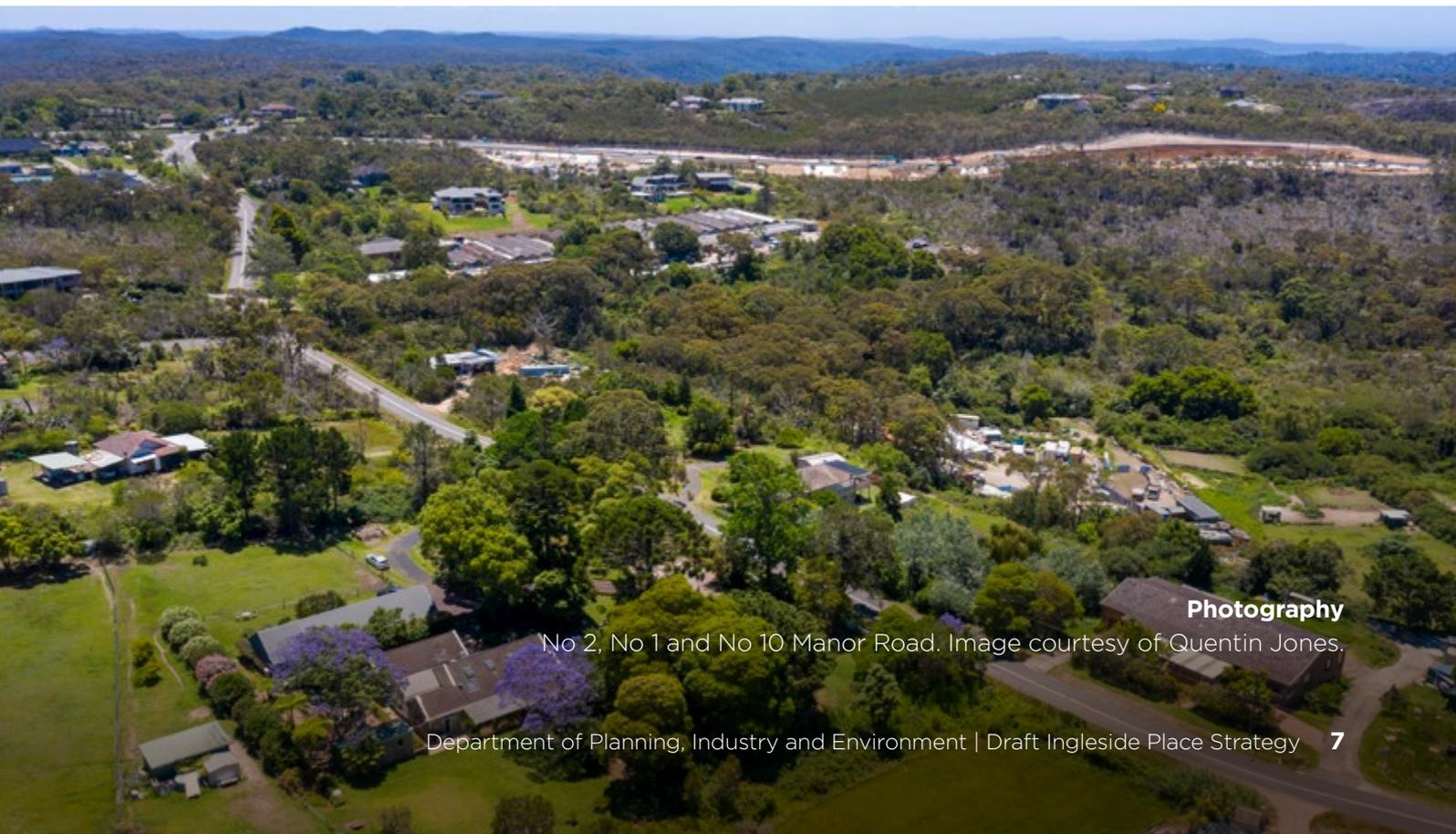
It recognises the opportunity to provide new homes in Sydney's North District in a semi-rural area with environmental and heritage values.

Of most relevance, the draft Place Strategy is geared towards a model resilient community planned around bushfire risk, evacuation and preparedness.

This draft Place Strategy envisages:

- 980 new dwellings, of a mix of types including:
 - houses on larger lots (1,500 m² and 2 ha)
 - houses on smaller semi-suburban-scaled lots (450 m²)
 - low-rise apartments and townhouses (on 225 m² minimum area lots)
- local shopping centre
- sports fields
- parks, open space, and places for biodiversity conservation and water cycle management
- a population increase of around 3,000 people.

The draft Place Strategy will require relatively minor upgrades to existing utilities; new connections and ancillary supporting infrastructure will provide service upgrades into the area to the south of Mona Vale Road.



No 2, No 1 and No 10 Manor Road. Image courtesy of Quentin Jones.

Photography

North side of Mona Vale Road

The northern portion of Ingleside, to the north of Mona Vale Road is an area that will retain its existing rural-residential character following detailed consideration of a range of bushfire, evacuation, environmental, and servicing constraints that make intensification of development unsuitable. The existing land use zoning and development controls under Pittwater Local Environmental Plan (LEP) 2014 are retained to enable the broad range of permissible uses to continue.

The key reasons for not pursuing change to the north of Mona Vale Road are:

- bushfire risk is acute and population growth cannot be supported due to evacuation limitations and concerns
- the area is generally un-serviced or under-serviced. The costs of servicing will be prohibitive in the context of any change likely to be accepted on the basis of the bushfire risk and evacuation limitations
- highly variable topography
- adjacent national parks
- increased heritage impacts
- biodiversity and environmental impacts
- visual impacts and reduction in established scenic and cultural landscapes.

The Department undertook an analysis of the existing zone and compared it to the range of land uses permissible in other zones under Pittwater LEP 2014. A broad range of dwelling types, as well as agricultural, industrial and commercial uses are permissible in the existing RU2 – Rural Landscape zone north of Mona Vale Road. The RU2 zone, provides flexibility while respecting the environmental, heritage and scenic values of the area. Amending the zoning to one of the other zones permissible under Pittwater LEP 2014 would reduce the range of currently permissible land uses or, permit land uses that would intensify the number of dwellings in this area.

Council will also review existing planning controls, appropriate uses and development opportunities to the north of Mona Vale Road as part of its

comprehensive planning processes for a new Northern Beaches Local Environmental Plan (LEP). Any new development in this area would need to be serviced and any additional population growth acceptable due to the area's acute bushfire evacuation limitations.

Implementing the Place Strategy

Proposed planning control changes will facilitate approximately 980 new homes and new local jobs and ensure development is compatible with the surrounding area. The proposed controls will require:

- a range of open space areas that allow opportunities for recreation and communities to gather, the retention of trees and planting of new trees to enhance the tree canopy and seek to reduce the urban heat island effect
- a diversity of housing, including low-rise apartments and townhouses to improve housing choice on the Northern Beaches
- up to 100 affordable housing dwellings (a 10 per cent affordable housing target), subject to feasibility
- a mix of commercial and retail uses to support the community and provide jobs near where people live
- a new local centre, meeting place and hub for the community
- careful consideration of placement of development to ensure a resilient and safe community
- biodiversity and water management outcomes such as protection and enhancement of habitat and managing water flows and stream health
- new road, pedestrian and bicycle connections within Ingleside and to adjoining places
- protection for areas of significant vegetation and ecological communities and links to the surrounding areas of bushland, including a new and significant connection to the Ingleside Chase Reserve through rezoning of government-owned lands to Environmental Conservation, enabling contiguous and consistent conservation values and effective expansion of the reserve up the escarpment.



Photography

Major road works on Mona Vale Road. Image courtesy of Quentin Jones.

Planning for infrastructure

Planning for infrastructure is to be provided as the population grows and draws from the findings of detailed technical studies such as an Infrastructure Delivery Plan, Demographic and Social Infrastructure Assessment, and inputs from State agencies and Northern Beaches Council.

Sydney Water advises that the area south of Mona Vale Road could be serviced with potable water supply via capacity at the existing Elanora Heights Reservoir. Booster pumps will be needed for higher elevated areas. Similarly, the area is able to use existing gravity-drained sewer infrastructure.

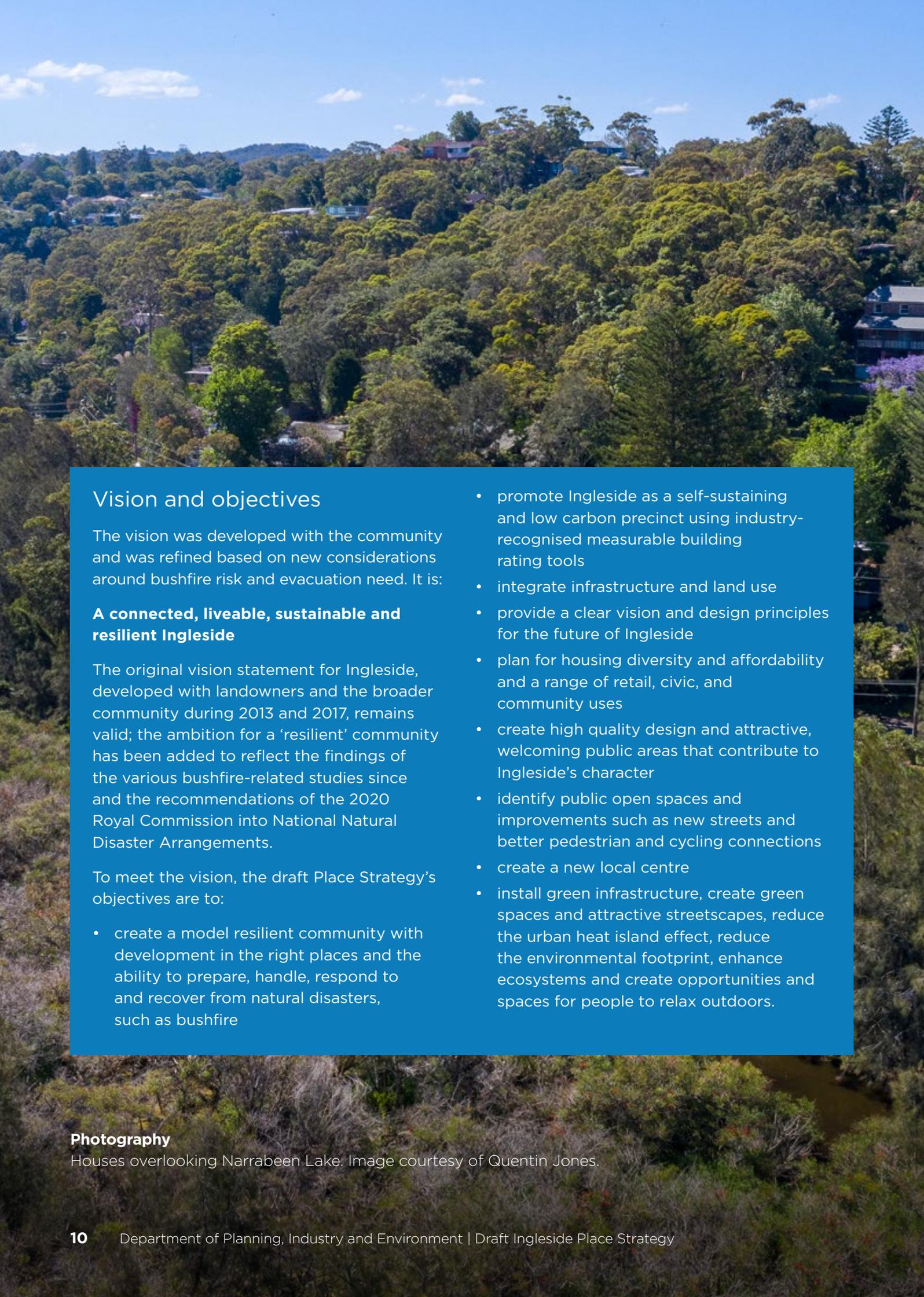
Ausgrid confirms that the area south of Mona Vale Road can be supplied by two new 11kV feeders from the Mona Vale Zone Substation. Incremental supply improvements and augmentation will be needed to enable gas supply. Telecommunications networks (Telstra and the NBN) are not yet planned but will need to be expanded into the area.

It is proposed to amend the *Environmental Planning and Assessment Regulation 2000* so development applications for development (other than minor works), are not approved until a local contributions plan is in force for the Ingleside Urban Release Area.

It is also proposed to allow Council to require local infrastructure contributions for new residential development in the Ingleside Urban Release Area of up to \$30,000 per dwelling or per residential lot. Currently, contributions are capped at \$20,000 per dwelling or per residential lot.

A local contributions plan is being prepared by Northern Beaches Council. The local contributions plan will set out infrastructure (works) and service requirements, the location of works, proposed staging, and proposed costs per item.

The balance of the broader Ingleside Precinct will remain subject to existing planning controls; any development will need to be serviced to match population growth.



Vision and objectives

The vision was developed with the community and was refined based on new considerations around bushfire risk and evacuation need. It is:

A connected, liveable, sustainable and resilient Ingleside

The original vision statement for Ingleside, developed with landowners and the broader community during 2013 and 2017, remains valid; the ambition for a ‘resilient’ community has been added to reflect the findings of the various bushfire-related studies since and the recommendations of the 2020 Royal Commission into National Natural Disaster Arrangements.

To meet the vision, the draft Place Strategy’s objectives are to:

- create a model resilient community with development in the right places and the ability to prepare, handle, respond to and recover from natural disasters, such as bushfire
- promote Ingleside as a self-sustaining and low carbon precinct using industry-recognised measurable building rating tools
- integrate infrastructure and land use
- provide a clear vision and design principles for the future of Ingleside
- plan for housing diversity and affordability and a range of retail, civic, and community uses
- create high quality design and attractive, welcoming public areas that contribute to Ingleside’s character
- identify public open spaces and improvements such as new streets and better pedestrian and cycling connections
- create a new local centre
- install green infrastructure, create green spaces and attractive streetscapes, reduce the urban heat island effect, reduce the environmental footprint, enhance ecosystems and create opportunities and spaces for people to relax outdoors.

Photography

Houses overlooking Narrabeen Lake. Image courtesy of Quentin Jones.

Introduction

About Ingleside

Ingleside is located in the Northern Beaches Local Government Area (LGA). It comprises approximately 700 ha of land between Ku-ring-gai Chase National Park, Garigal National Park and Ingleside Chase Reserve. It is a predominately rural-residential area, interspersed with areas of small-scale agricultural, commercial and industrial uses and expanses of natural bushland.

Located in the north-west of the Northern Beaches LGA, Ingleside sits at the crossroads of higher connecting points, offering broad views to the coast and sea as well as adjacent national parks and bushland.

The Gayamaygal and Garigal people are the traditional custodians of the Northern Beaches region. Cultural knowledge, historical records and the archaeological record each provide an understanding of the material cultural and customs of the Aboriginal people of the Northern Beaches region. The rich natural resources of the flooded valleys and coastal parts of the region would have been an important subsistence resource for Aboriginal people.

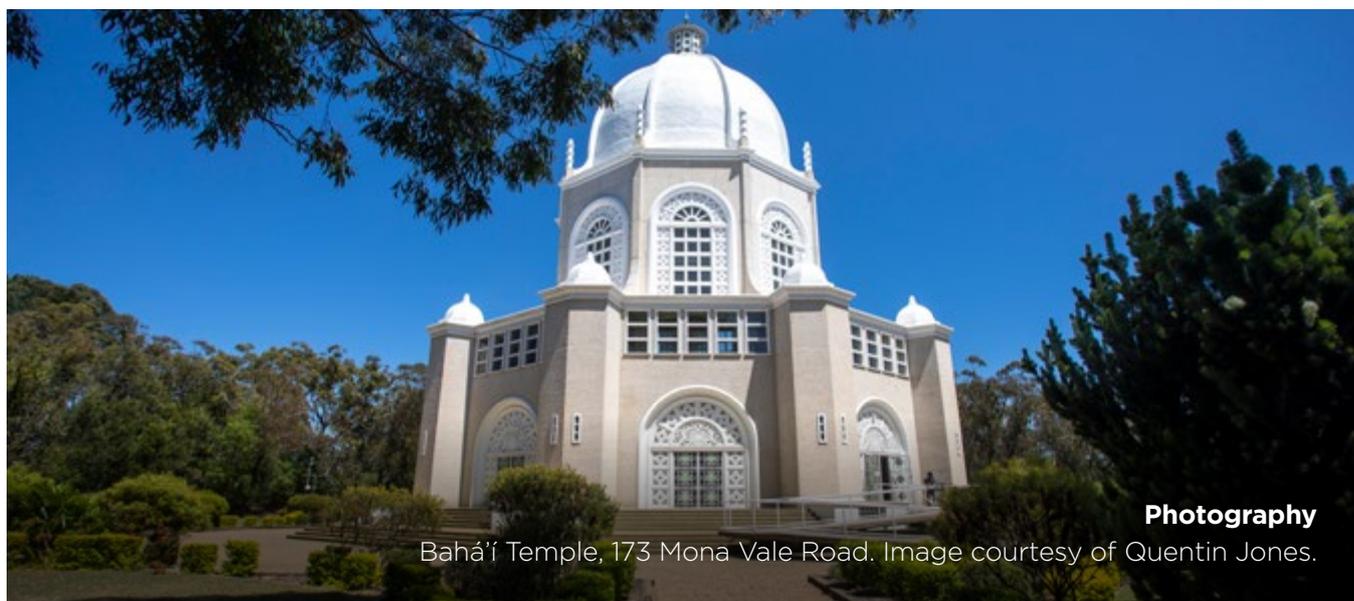
The various micro-environments of the Northern Beaches and hinterland provided a wide range of resources and were likely used by Aboriginal groups year-round.

Aboriginal people moved throughout the landscape for a variety of reasons. Some of these were related to resource procurement and seasonal availability of food and raw materials in different areas, while some were related to social interactions such as initiation rites, exchanges and other ceremonial activities.

The Ingleside area contains numerous rock engraving sites with various motifs and it is possible they were used by Aboriginal for these purposes. The traditional and spiritual associations of Aboriginal people with such ceremonial areas remain present in the contemporary Aboriginal community, with the engraving sites providing a direct physical link with the landscape and with their heritage.

A 2016 Aboriginal heritage assessment identified 25 Aboriginal archaeological sites—mainly rock engravings, some grinding groove sites (including one with an associated water hole) and a rock shelter with art and archaeological deposit.

European settlement in the area was limited—by the 1880s Ingleside was a sparsely settled area as the cost of land closer to the Sydney CBD increased. Prominent landholders included Gustave Lix, whose 640-acre property included the land east of Mona Vale Road and north of Powderworks Road; and James Jones, who was granted several portions of land north of Mona Vale Road.



Photography
Bahá'í Temple, 173 Mona Vale Road. Image courtesy of Quentin Jones.

Subdivision of these parcels saw a slow increase in population, with land mainly used for rural and agricultural purposes. The remainder of the land at Ingleside was not subdivided until the 1950s and 1960s; again, this was into small farm lots.

The semi-rural feel attracted people wanting small farm holdings; migrant families who often established market gardens; and people seeking larger homes within a semi-secluded area. Ingleside also accommodated church groups, specialised schools, animal welfare groups and nurseries.

Ingleside has largely retained its rural character due to a 1951 NSW Government restriction that disallowed lots less than two acres. Ingleside today is largely unchanged with semi-rural and bushland lots, plant nurseries, equine uses, and small-scale commercial agriculture.

The main heritage, archaeological and geological sites in Ingleside are:

- Cicada Glen Nursery (1 Chiltern Road)
- Smoky Dawson's ranch gates (5 Chiltern Road)
- Katandra Bushland Sanctuary (84 Lane Cove Road)
- Ingleside House and its surrounds, including a front fence, stone gate posts and garden plantings (1 Manor Road, and 12 King Road)
- Laterite geological site (next to public cycleway, south from Baha'i House of Worship grounds, parallel to 173 Mona Vale Road)
- group of Monterey Pines *Pinus radiata* (169 and 169A Mona Vale Road)
- ruins of Powder Works (2 and 10 Manor Road)
- carving - survey mark (opposite 158 Mona Vale Road (southern side))
- Baha'i House of Worship (173 Mona Vale Road).

The Sydney Baha'i House of Worship is a key landmark visible in all directions. The temple was constructed between 1957 and 1961 and was the third Baha'i House of Worship built worldwide by the Baha'i faith.

Why Ingleside needs a Place Strategy

A Place Strategy is an essential component for the future of Ingleside and represents the culmination of many years of planning and consultation with the community. It represents a cohesive plan for a resilient and sustainable growth of the area.

Ingleside is already home to more than 130 homes south of Mona Vale Road, and employment opportunities in diverse industry sectors. It offers the potential to be a place where people live in new homes and can access social infrastructure, planned for in a way that conserves important areas of biodiversity and heritage, and transforms Ingleside into a new model resilient and sustainable suburb for the Northern Beaches.

This draft Place Strategy will guide the decisions that will shape this growth and the planning for new land uses, development and infrastructure. Importantly, the draft Place Strategy will bring certainty to the long running discussions about the future development and environmental potentials of the area.

Prepared by the Department of Planning, Industry and Environment in collaboration with Northern Beaches Council, the draft Place Strategy looks at the area as it is now and establishes a vision for the future. It plans for new homes, close to open space, appropriately located to avoid bushfire risk.

Past precinct planning

The draft Place Strategy builds on previous precinct planning for Ingleside, since it was identified as a potential future release area in the mid 1960s. Planning for the area has had a contentious past, with its capacity to accommodate further residential development debated around environmental, accessibility, and natural hazards constraints.

Timeline

2013

The Department has led planning for Ingleside in collaboration with Council since July 2013. It has held community workshops, released community newsletters, and consulted with State agencies and other stakeholders.

2016

This culminated in the release of a draft Ingleside Land Use and Infrastructure Implementation Plan for public exhibition in late 2016. The Plan envisaged 3,400 dwellings, and areas for biodiversity conservation, associated water-related services and urban amenities.

The 2016 exhibition received 425 submissions. Key issues raised in those submissions were:

- transport, traffic and travel
- biodiversity and environmental conservation
- residential density, height, urban design
- change of land use
- water cycle management
- social infrastructure
- utilities and serviced areas
- land acquisition and rates
- bushfire management
- planning and consultation processes
- visual impacts
- sustainability
- heritage
- affordable housing
- noise impacts.



2018

Among the key issues raised in submissions included bushfire safety and evacuation. In 2018, in response to community submissions and to comply with the draft *Planning for Bush fire Protection 2018*, a Bush Fire Risk Assessment was completed. The assessment identified the potential for the Ingleside Precinct to be exposed to extreme to catastrophic bushfire risk, and raised concerns about the ability to evacuate the precinct safely in a bushfire event.

2019

In November 2018, the-then Planning Minister announced the 2016 work would not be implemented. A detailed bush fire evacuation study was subsequently prepared, and the findings of the 2016 work is now subject to the revised planning set out in this draft Place Strategy.

Where are we now

Our planning for Ingleside has refocused earlier attempts to rezone land by rigorously reviewing and revisiting bushfire risk, evacuation capacity and servicing requirements. This process considered and addressed bush fire risk mitigation techniques (applying the updated *Planning for Bush Fire Protection 2019*), undertook evacuation traffic modelling, and investigated environmental and infrastructure servicing constraints.

The response is a reduced developable area and development yield. Development will now be focused south of Mona Vale Road where effective evacuation is possible. The yield has accordingly dropped from the previous 3,400 homes to approximately 980 new homes. The area to the north of Mona Vale Road has been identified as an area to retain its existing rural-residential character following detailed consideration of a range of bushfire and evacuation, environmental, and servicing constraints that make intensification of development unsuitable.

A revised structure plan has been translated into draft planning controls that are on exhibition alongside this draft Place Strategy. To support the Structure Plan, the Department has provided funding to Council to prepare a complementary local infrastructure contributions plan.

The draft Place Strategy meets the strategic planning objectives for Ingleside set out in the Greater Sydney Region Plan *A Metropolis of Three Cities*, the North District Plan, and Council's Local Strategic Planning Statement—*Towards 2040*, as well as other NSW Government and Council-related strategic planning documents.



Photography

No 1 Manor Road. Image courtesy of Quentin Jones.

About this exhibition

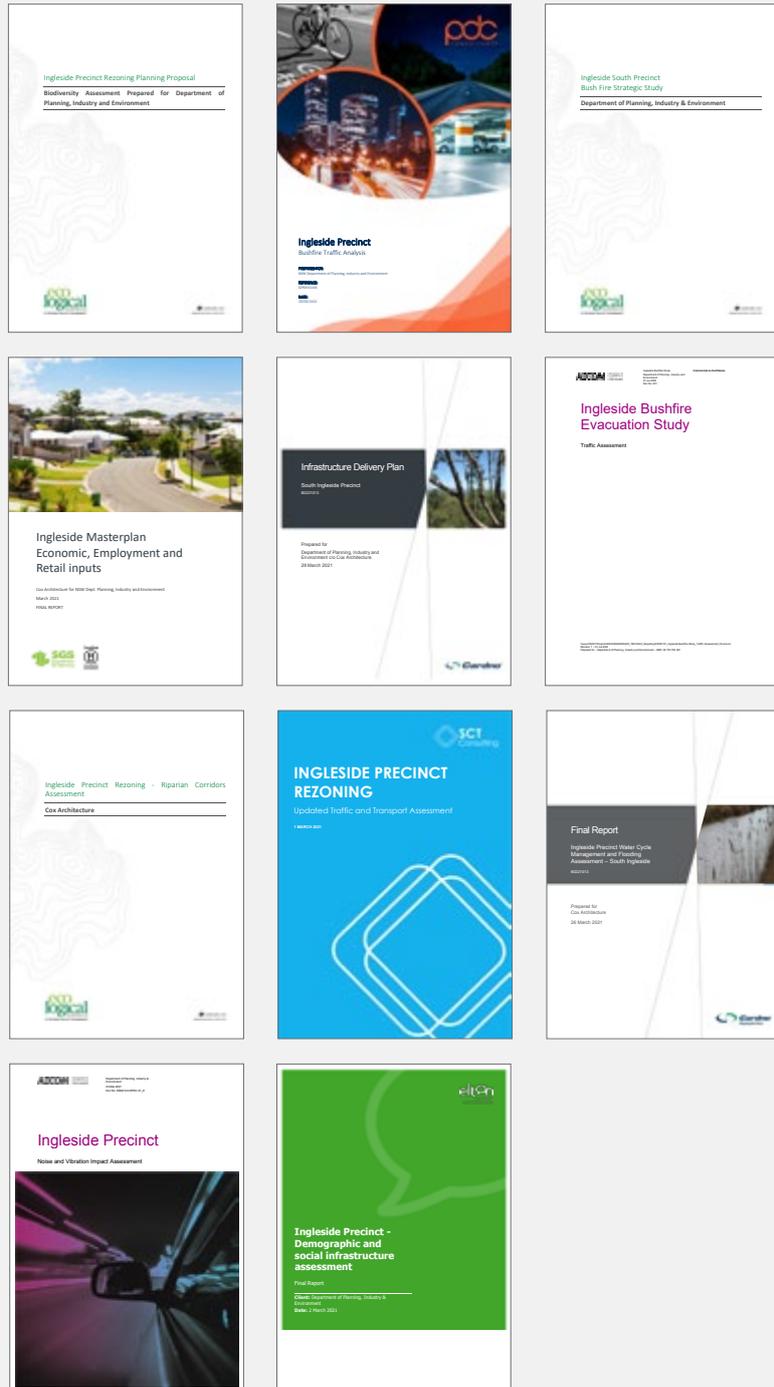
The package of information on exhibition will inform a subsequent rezoning of Ingleside to enable the area to sustainably develop in accordance with the precinct vision and Structure Plan.

The draft Place Strategy is on exhibition alongside:

Draft Explanation of Intended Effect (EIE) that explains the proposed changes to the area's land use planning controls



The suite of technical studies.



Northern Beaches Council’s draft development control plan will be separately prepared and exhibited in 2021 along with a proposed development contributions plan for proposed local infrastructure. The Department has provided Council with funding assistance to take on this work.

Council is also undertaking a detailed review of planning controls throughout the local government area to support the first comprehensive LEP for the Northern Beaches.

While no change to the character of the area to the north of Mona Vale Road is contemplated as part of this Place Strategy, Council will further investigate the appropriate land uses as part of the comprehensive LEP process.

The exhibition runs from 25 May 2021 to 6 July 2021.

Make a submission at www.planningportal.nsw.gov.au/ingleside

Next Steps

The final Place Strategy will inform statutory planning mechanisms including a draft state environmental planning policy (SEPP) proposed to amend the *Pittwater Local Environmental Plan 2014* (Pittwater LEP 2014). The Place Strategy also informs the development of finer-grained development controls through a Council-led development control plan process, along with preparation of a development contributions plan to provide the framework for delivery of new supporting infrastructure.



Planning for Ingleside

Vision

The vision for Ingleside draws on the strategic planning context, community aspirations and the findings of a broad suite of supporting technical studies. It was updated from that exhibited in 2016 to meet bushfire planning requirements.

The vision is a guiding statement about the future character of Ingleside that informs this draft Place Strategy and the detailed planning and development controls.

A connected, liveable, sustainable and resilient Ingleside

The original vision for Ingleside was developed with landowners and the broader community in 2013 when planning and community engagement commenced. Given the amount of interest in, and submissions on, bushfire risk and mitigation and subsequent studies to better define the bushfire risk and evacuation capacity parameters, it is timely to reconsider and enhance the vision.

National Disaster Royal Commission

The Royal Commission into National Natural Disaster Arrangements made 80 recommendations in relation to natural disaster management and resilience. Those relevant to this draft Place Strategy are:

- Recommendation 12.2 Evacuation planning—Evacuation routes and seasonal populations
 - roles and responsibilities of state and territory governments, local governments and local communities
 - education and signage about evacuations and evacuation routes, including education of seasonal populations
 - the adequacy of evacuation routes; including contingencies if evacuation routes or centres are assessed as not being able to cope
 - the potential inability to evacuate, either by reason of circumstances or personal characteristics.
- Recommendation 12.3 Evacuation planning—Essential services and supplies
 - key risks that essential service outages have on communities during a severe or catastrophic natural disaster (particularly communications and power)
 - availability of essential supplies, including food and water
 - consequence management and compounding events such as the loss of essential services or health impacts.
- Recommendation 19.3 Mandatory consideration of natural disaster risk in land-use planning decisions
 - State, territory and local governments should be required to consider present and future natural disaster risk when making land-use planning decisions for new developments.

From these recommendations of the Royal Commission, other bushfire-related studies, community feedback and broader findings from the planning process, an ambition for a 'resilient' Ingleside has been added to the vision.

To meet the vision, the draft Place Strategy's objectives are to:

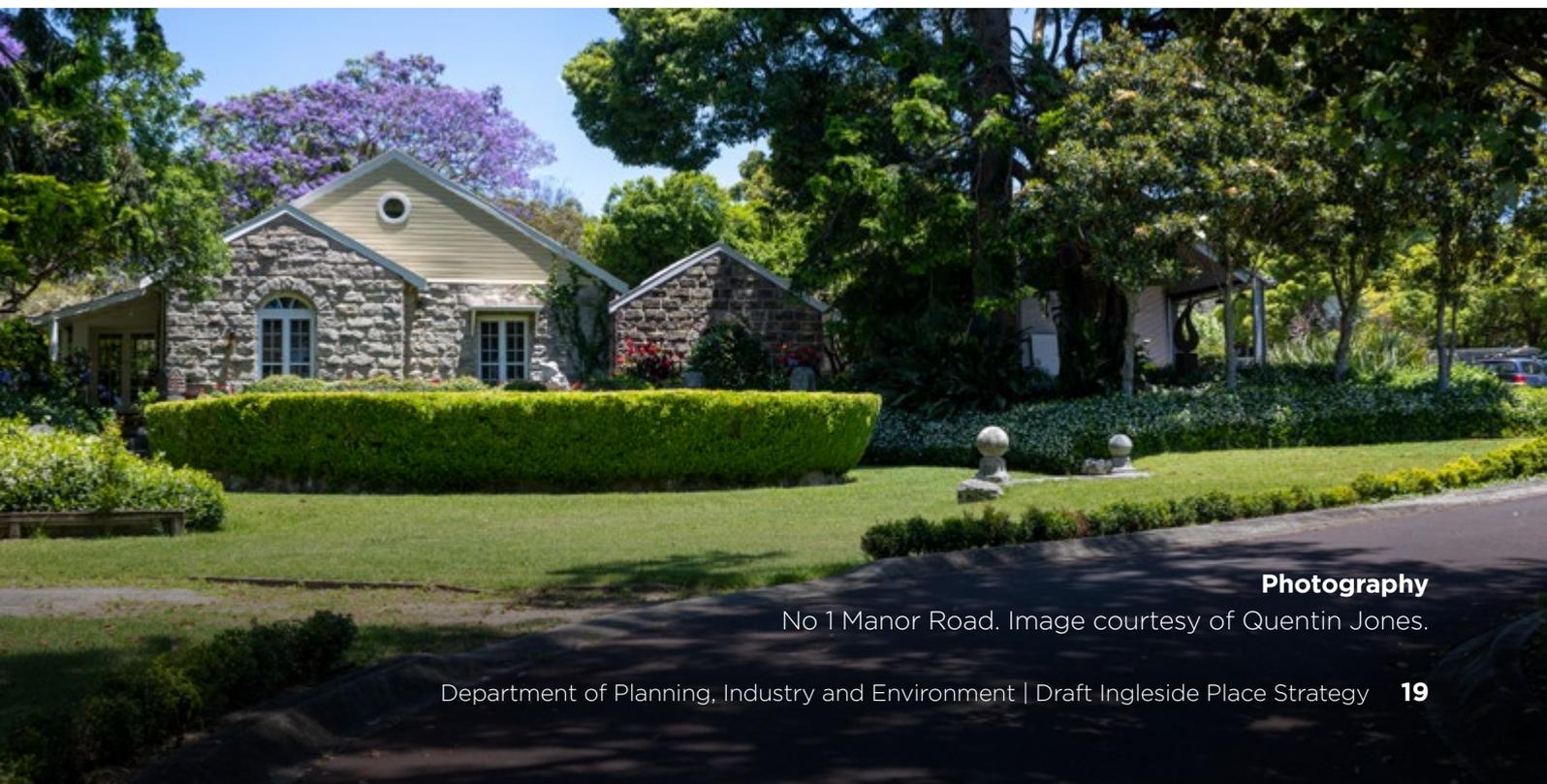
- create a model resilient community with development in the right places and the ability to prepare, handle, respond to and recover from natural disasters, such as bushfire
- promote Ingleside as a self-sustaining and low carbon precinct using industry-recognised measurable building rating tools
- integrate infrastructure and land use
- provide a clear vision and design principles for the future of Ingleside
- plan for a housing diversity and affordability and a range of retail, civic, and community uses
- create high quality design and attractive, welcoming public areas that contribute to Ingleside's character
- identify public open spaces and improvements such as new streets and better pedestrian and cycling connections

- create a new local centre
- install green infrastructure, create green spaces and attractive streetscapes, reduce the urban heat island effect, reduce the environmental footprint, enhance ecosystems and create opportunities and spaces for people to relax outdoors.

Guiding principles

Guiding principles provide the foundation to maintain and enhance the area's character:

- build a model resilient and sustainable and low carbon community
- preserve and integrate existing environmental assets
- create diverse, sustainable and accessible areas of open space
- integrate pedestrian movement and convenience with accessible public transport
- create a vibrant and active precinct that responds to human needs at a human scale
- make sure the built form enhances people's sense of place.



Photography

No 1 Manor Road. Image courtesy of Quentin Jones.

Structure planning

This draft Place Strategy considers Ingleside's constraints and opportunities and identifies the longer term opportunities for residential development and expansion of the area with managed growth and new and enhanced infrastructure. This approach builds on the earlier work by the Department with Council and draws from feedback received during the 2016 exhibition.

A significant component of the new work has been to better define the areas able to be developed, the capacity of the road network in growth scenarios to effectively evacuate in the event of a bushfire, and the levels of servicing required to cater for growth. This process has informed a revised constraints and opportunities framework referred to as "the structure plan" and determined the potential for approximately 980 new homes south of Mona Vale Road.

The structure plan builds on earlier work, and carefully considers existing local character and community aspirations. It is based on a range of studies to understand the place and the continued consultation with Council, State agencies and the community.

This work refines the 2016 Plan by addressing bushfire and evacuation issues within a redefined area, adjusted densities and adjusted yield. Infrastructure servicing analysis fine-tuned the locations best suited to development. More detailed biodiversity conservation and water cycle management considerations also informed the structure plan.

Current planning reinforces the opportunities presented by managed development in Ingleside to contribute to housing supply in the Northern Beaches and provide a path to protect important and valuable ecological communities. Resolving the development opportunities of the area also brings to an end the planning uncertainty that has existed for landowners and the community and will enable the upgrade of local roads to support safer evacuation in the event of bushfire.

Council supports an approach that determines capacity for development and helps to improve bushfire resilience. Community engagement and participation will remain a key tenet of our planning.

The refined structure plan focusses upon the area to the south of Mona Vale Road and allows for approximately 980 new homes of various types: houses on larger lots, houses on semi-suburban lots, or townhouses/low-rise apartments. Playing fields, a community centre and neighbourhood shops are clustered in the centre of Ingleside to provide a tangible heart and focus of community activity.

The area to the north of Mona Vale Road has been identified as an area to retain its existing rural-residential character following detailed consideration of a range of bushfire and evacuation, environmental, and servicing constraints.

Technical studies

The draft Place Strategy is supported by updated and refined (or new) reports and studies addressing:

- spatial planning, structure planning, and assessment of land use and dwelling mix, types, and densities
- bushfire risk and protection
- bushfire evacuation
- traffic and transport
- infrastructure demand and delivery
- biodiversity and ecology
- riparian corridor retention and protection
- economic feasibility
- employment and retail demand
- social infrastructure needs
- noise and vibration impacts.

The reports and studies in relation to Aboriginal and non-Aboriginal heritage, land capability, and visual impact, developed in the lead up to the 2016 Plan, are still relevant.

Appendix B provides a discussion around these studies which can be found on the Department's website as part of the exhibition.

Council is preparing a draft development control plan to establish finer-grain controls for development, public domain, sustainability to establish the desired character of the place. A draft development contributions plan in relation to necessary community and other local infrastructure needs is also to be prepared by Council. These will be available for public feedback shortly after this exhibition.



Photography

No 2, No 1 and No 10 Manor Road. Image courtesy of Quentin Jones.

Key Moves

1. Building a model resilient community

Planning for Ingleside focuses on reducing or mitigating risk and vulnerability to natural hazards by:

- ensuring that increased density is not planned in areas of greatest risk
- building evacuation capacity into design for the area by planning and building for resilience to prepare, handle, respond and recover from natural hazards is fundamental to sustainable land use decisions.

The planning process focuses on mitigation and preparedness. This is consistent with the Resilience NSW preparedness motto of 'Get Ready'.

2. Sustainability

The planning for Ingleside seeks to protect the environment and preserve natural and biophysical assets by:

- conserving, protecting and enhancing bushland, creek lines and riparian corridors, and scenic and cultural landscapes
- new and expanded ecological linkages, and habitat protection in the north east of the urban release area, expanding Ingleside Chase Reserve up the escarpment
- employing water cycle management to manage water flows, improve water quality, aquatic habitat and riparian connectivity
- applying development sustainability benchmarks such as BASIX and Green Star and aiming for net zero carbon emissions
- optimising development so that growth is consistent with the land's carrying capacity
- providing for new and additional open space and recreation spaces
- providing for a greener urban environment and managing the tree canopy to minimise urban heat island effect.

3. Building on natural assets to create a place for people

The vision seeks a connected place that is a great place to live.

- any development should aim to maintain Ingleside's semi-rural and bushland character and build on these special qualities
- the structure plan focuses on appropriately placed and scaled development intermingled with open space and local street connections, as well as a community heart that most residents can walk to
- the community heart will feature large tracts of natural and active open space, community facilities, childcare facilities, shops and services.

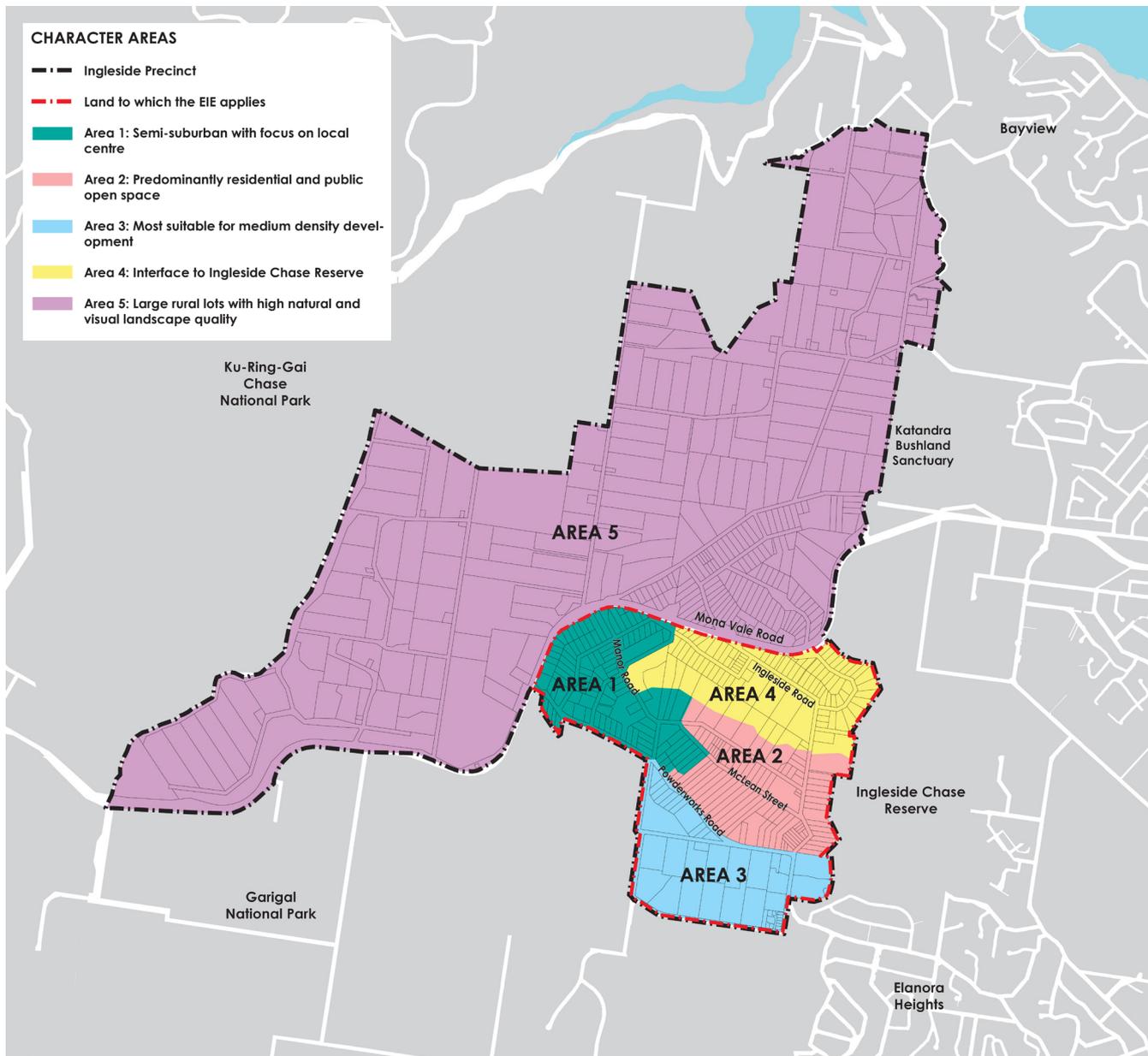


Photography

Ingleside, Northern Beaches Sydney. Image courtesy of Quentin Jones.

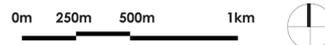
Connected places

The revitalisation of Ingleside cannot be a one-size-fits-all approach, given that each area of the precinct has—or will have—its own character, building types and uses. The precinct’s five character areas:



Key:

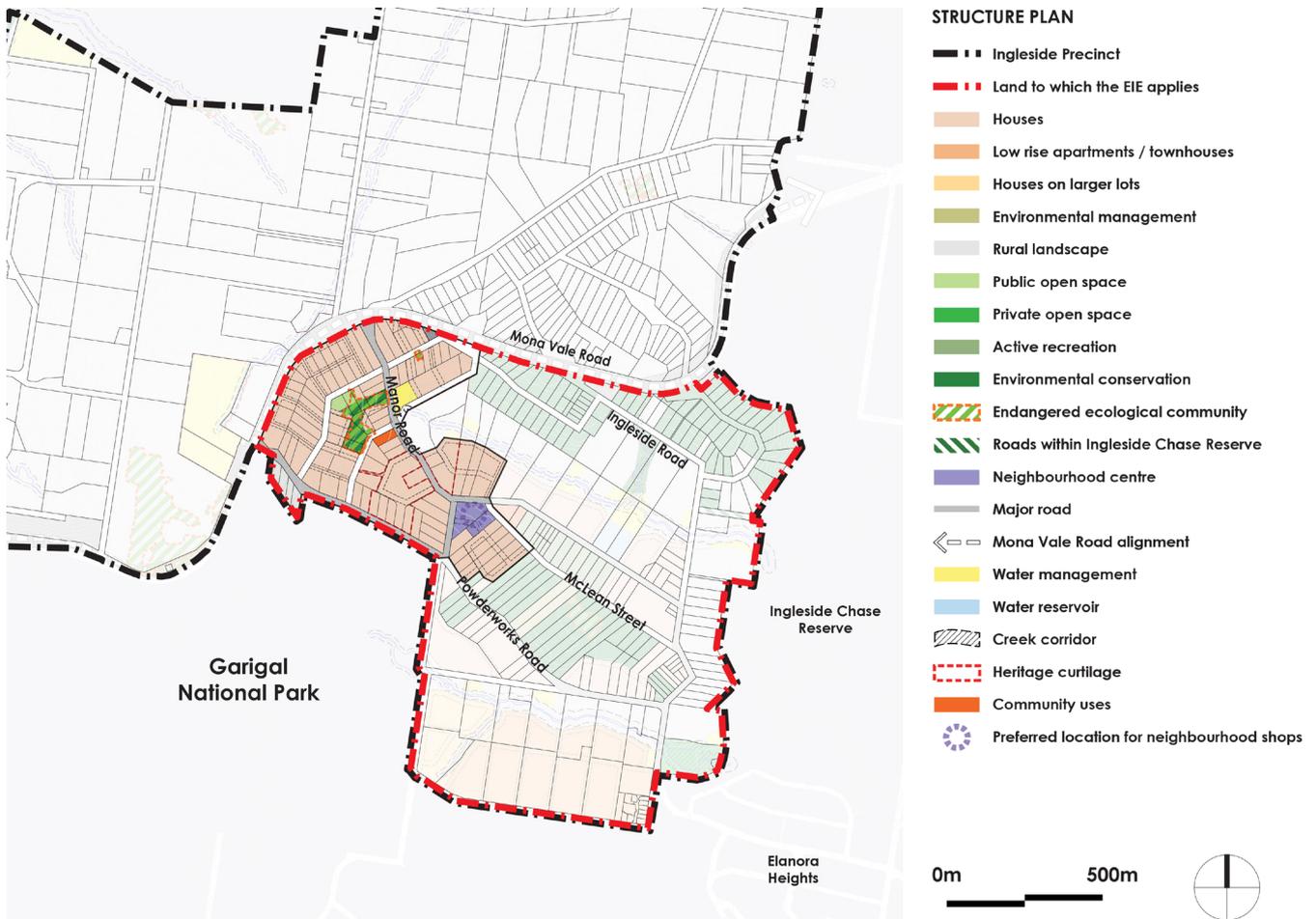
- Character Area 1
- Character Area 2
- Character Area 3
- Character Area 4
- Character Area 5



Note the Structure Plan informing the draft Place Strategy only applies to Character Areas 1-4.

Character Area 1

This area will be semi-suburban in character with mostly low-density residential homes. It will be focused on the local centre. Important heritage and environmental conservation areas within this area will be protected by the proposed zoning. It will be focused on a local centre on Wattle Road.



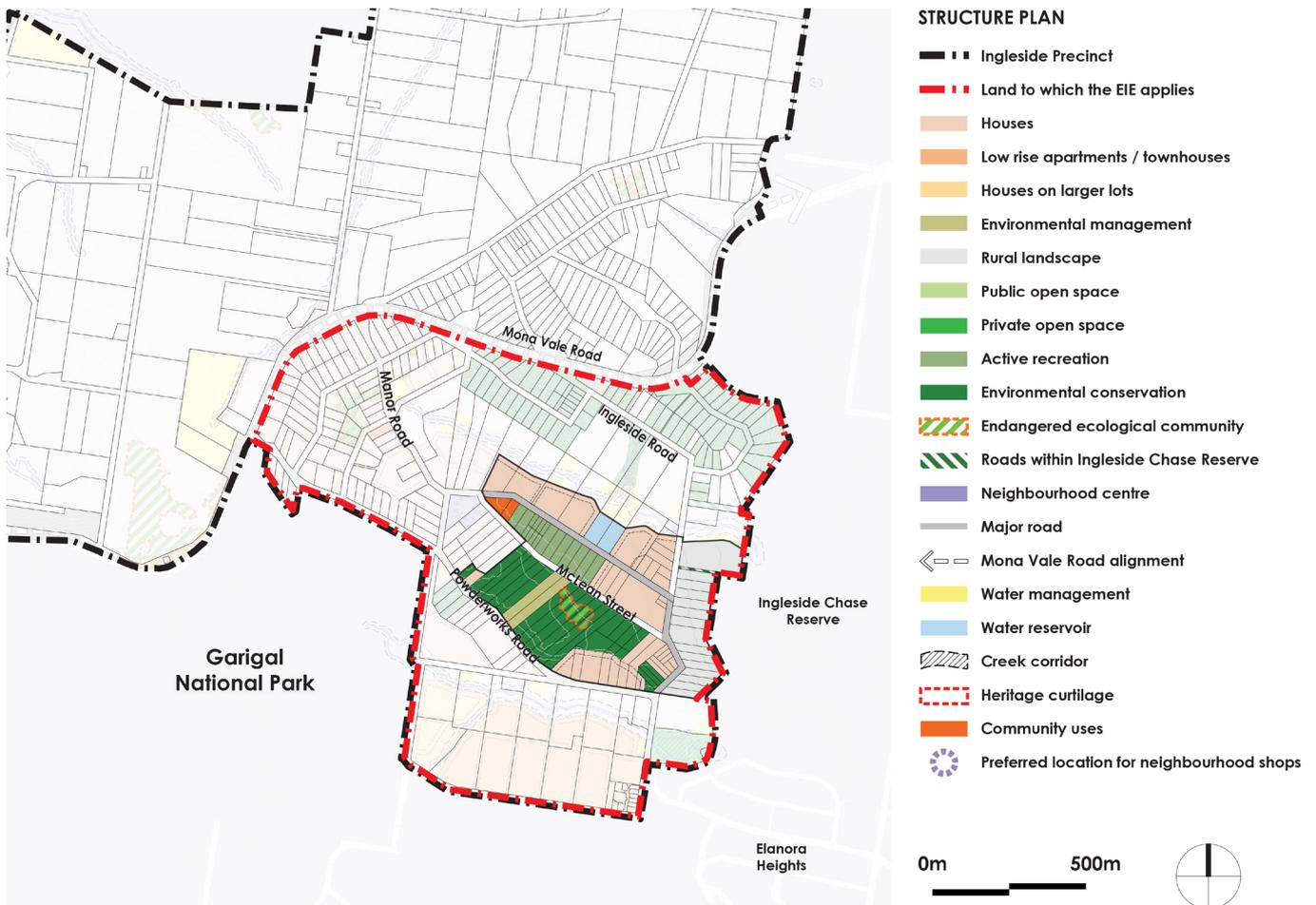
Photography
Community centre adjacent to open space.
Image courtesy of Cox Architecture.



Photography
Residential Park, Springthorpe. Image courtesy of Cox Architecture.

Character Area 2

This area is defined by forest to the north and a large zone of coastal heath to the south. It will be a long corridor of mainly environmental conservation land and public open space, playing fields given its existing Government ownership. Ingleside reservoir will be retained near the centre of the area. Other land will be zoned for low-density residential development. Sites east of Ingleside Road that abut Ingleside Chase Reserve will continue to be used for rural uses.



Photography

Residential Detached, Springthorpe. Image courtesy of Cox Architecture.

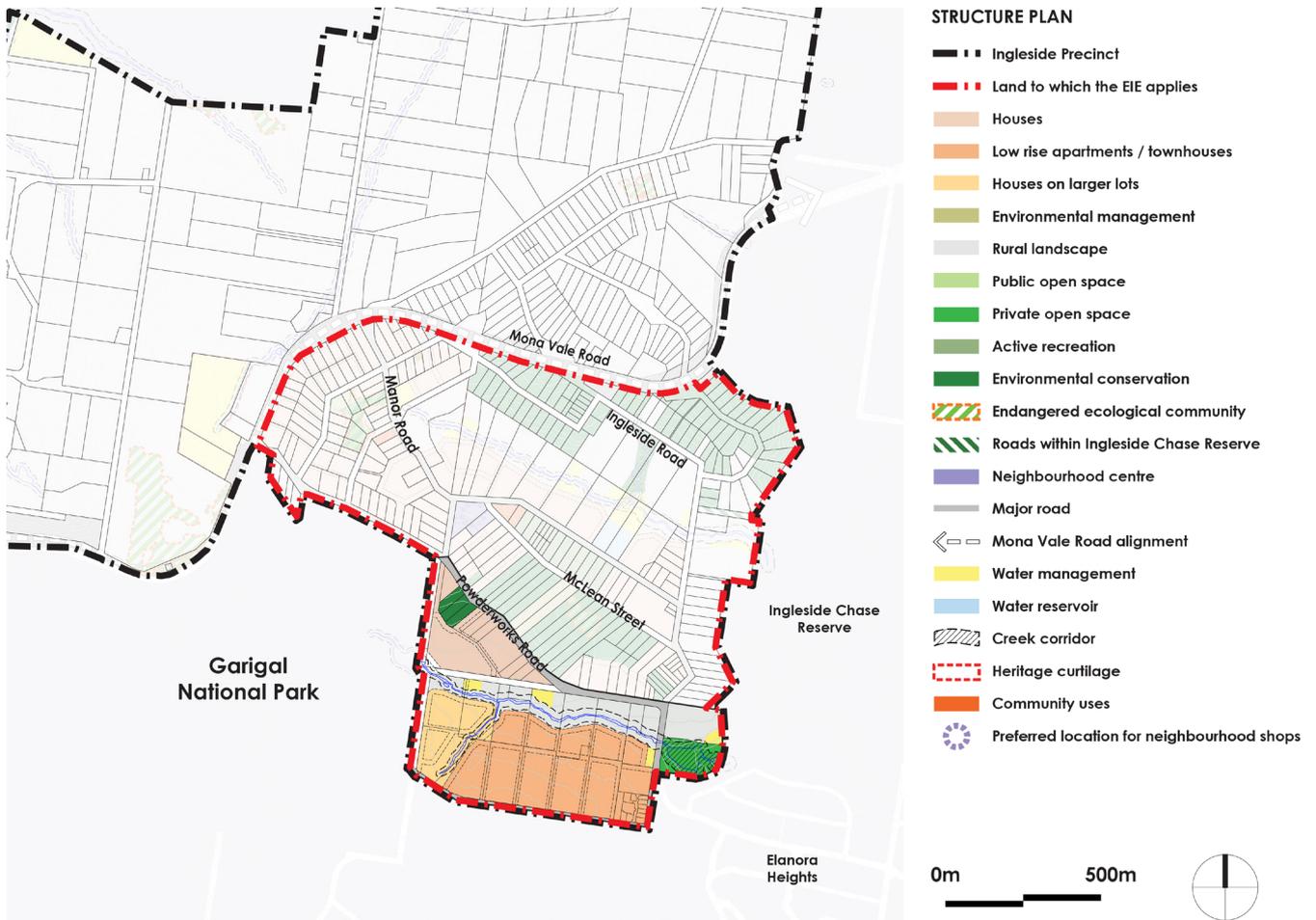


Photography

Sports Fields. Image courtesy of Macquarie University.

Character Area 3

This area south of Powderworks Road fronts the Elanora County Club golf course. The location, its flatter topography and the lower bushfire risk with good access to Powderworks Road makes it the most suitable for medium density development—townhouse development and low-rise apartments.



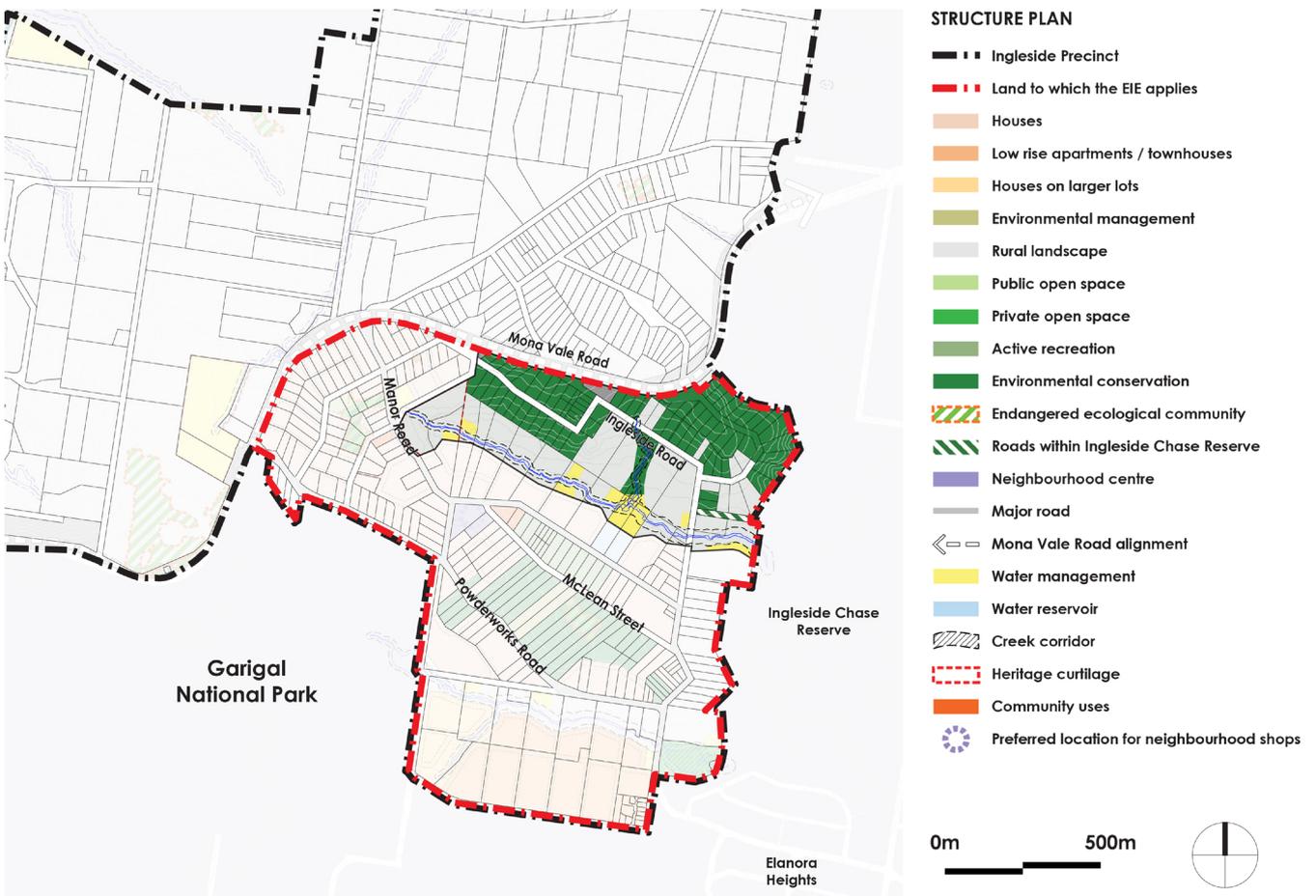
Photography
Medium Density on Riparian Corridor, Putney Hill. Image courtesy of Cox Architecture.



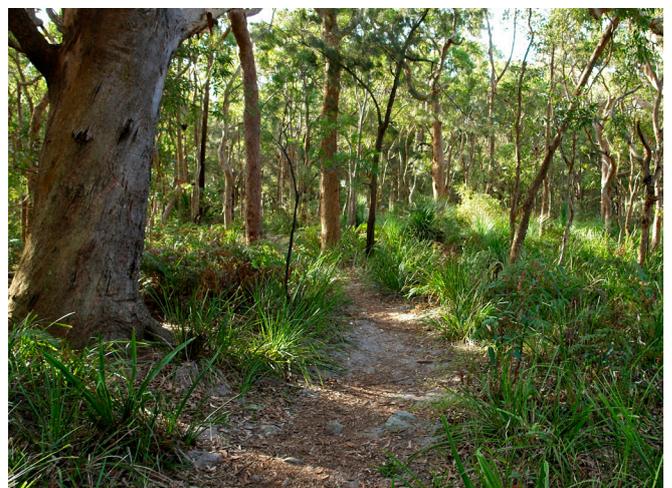
Photography
Attached Dwellings, Norman Reach. Image courtesy of Cox Architecture.

Character Area 4

This area will be visually prominent from the east, partly because of its steep topography and dense vegetation. It forms the northern edge of the new development area and will be an interface and contiguous connection to Ingleside Chase Reserve which is already zoned E2 - Environmental Conservation. Whilst it will be largely retained for low-density rural uses and bushland conservation, the rezoning of government-owned lands to the same E2 zone to conserve and manage significant areas of vegetation will ensure new and expanded ecological linkages, and habitat protection for a wide range of identified and potentially-occurring threatened and endangered flora and fauna species. This results in the effective expansion of the reserve up the escarpment.



Photography
Rural Residential. Image courtesy of Genjusho Building-Design.

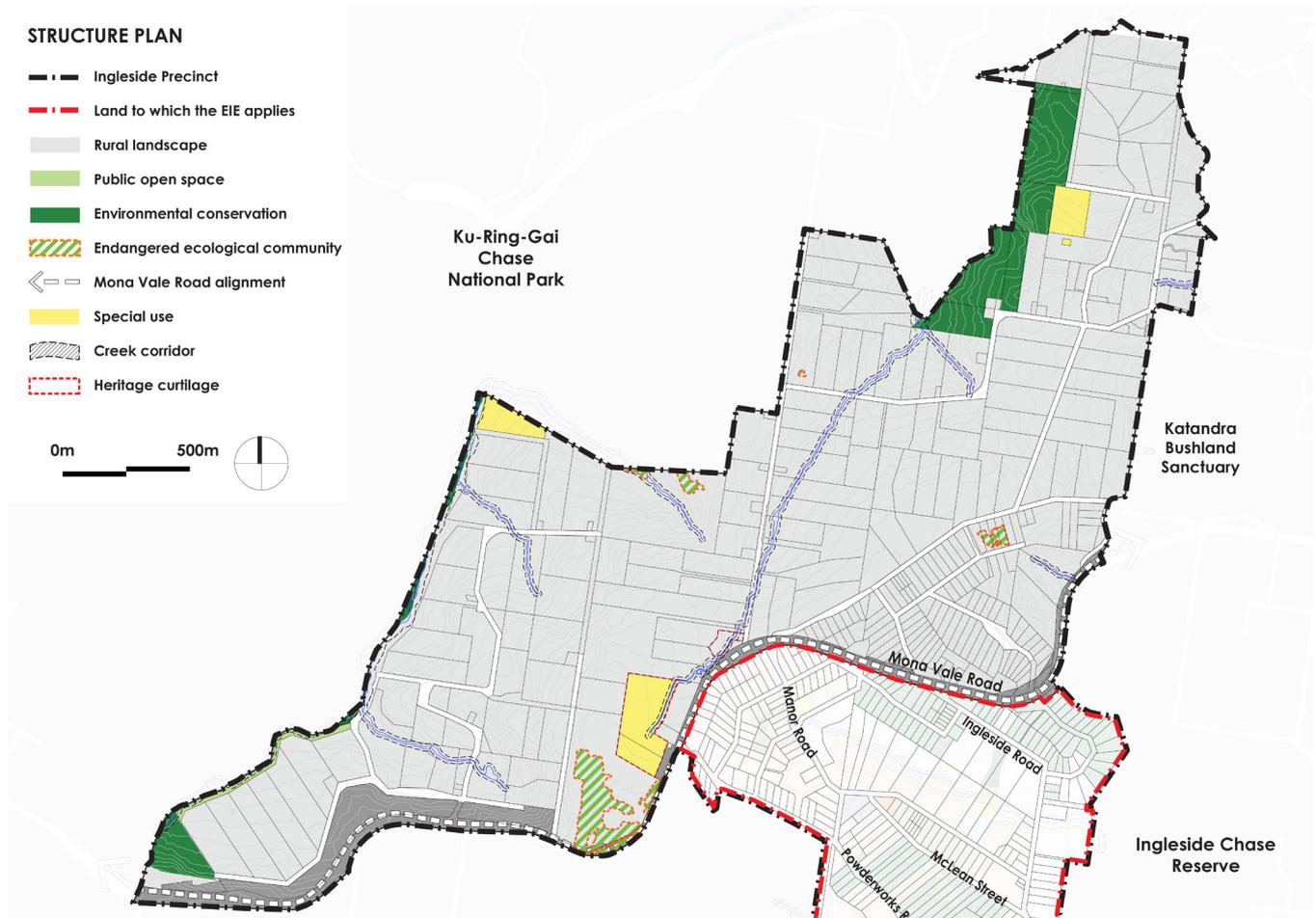


Photography
Bushland Trail. Image courtesy of Cox Architecture.

Character Area 5

The area north of Mona Vale Road is a mix of agricultural, large lot residential, education and some infrastructure uses. The existing RU2 - Rural Landscape zoning supports the rural character of the precinct and allows for a range of low density uses, including extensive agriculture, and light industrial uses that are compatible with the rural setting and the environmental, heritage and scenic values of the area. No change is proposed to existing planning controls for the area north of Mona Vale Road, primarily due to bushfire risk and evacuation limitations.

Council will be reviewing its existing planning controls, appropriate uses and development opportunities to the north of Mona Vale Road as part of its comprehensive planning processes for a new Northern Beaches Local Environmental Plan (LEP). Any new development in this area would need to be serviced and any additional population growth acceptable due to the area's acute bushfire evacuation limitations.



Achieving the vision

New land uses

The draft Place Strategy proposes the following land uses:

- Approximately 980 new residential dwellings to the south of Mona Vale Road with a target of up to 10 per cent as affordable housing. The overall yield and placement of development accommodates the necessary considerations for effective and safe evacuation in the event of a bushfire.
- A diversity of housing types within the precinct, including approximately 60% detached dwellings on a mix of regular and larger lots and the balance (40%) low rise apartments or townhouses.
- The community centre, local centre and open space and playing fields will serve as a community hub to give the place a heart and focal point.
- Existing heritage and environmental conservation lands will be retained and reinforced.
- New and upgraded roads and open space links provide for a better and more easily connected and walkable community.
- Land not already in public ownership is proposed to be acquired to provide for the necessary infrastructure.

Statutory planning controls

The draft Place Strategy and structure plan have informed proposed changes to planning controls for Ingleside in the Pittwater LEP 2014. As already noted, the area to the north of Mona Vale Road has only limited growth potential due to a range of bushfire and evacuation, environmental, and servicing constraints. Council will further investigate the appropriate land uses as part of the future comprehensive LEP process.

Key controls are summarised below with more detail in the accompanying Explanation of Intended Effect (EIE).



Photography

Katandra Bushland Sanctuary, and bushland conservation. Image courtesy of Quentin Jones.

Urban Release Area

The area within the Ingleside Precinct that is located south of Mona Vale Road, is proposed as an Urban Release Area under the Pittwater LEP 2014, and seeks to enable site specific provisions to support the appropriate renewal of land contained within the boundaries of Character Areas 1-4.

The Urban Release Area is reduced from the previously exhibited Ingleside Precinct Plan and comprises land wholly south of Mona Vale Road. This change responds to bushfire safety and evacuation requirements. The proposed Urban Release Area map includes sectors that will translate the dwelling capacity for the Urban Release Area. The Urban Release Area Maps are supported by proposed amendments to Pittwater LEP 2014.

The Urban Release Area is illustrated in Figure 1.

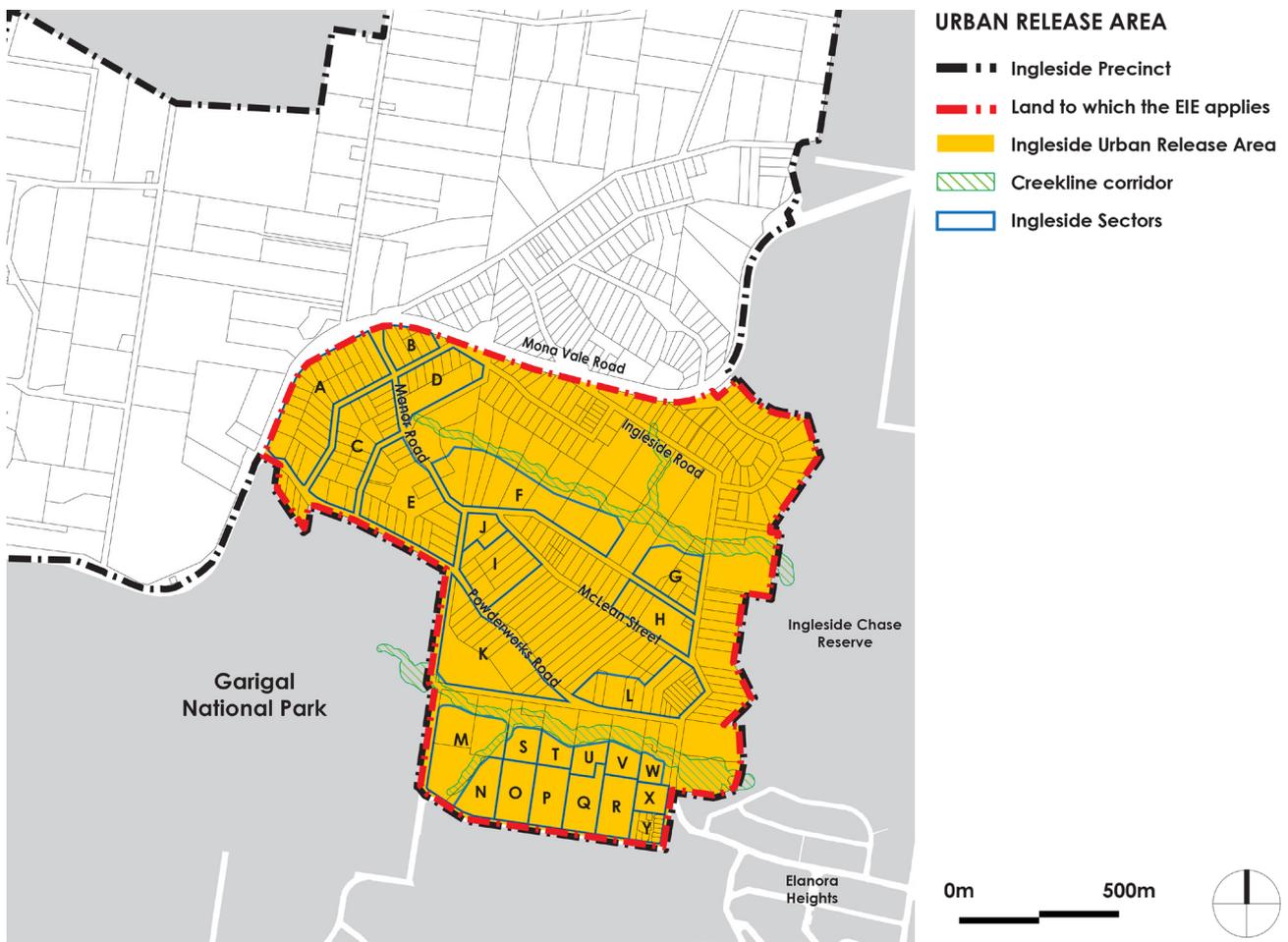


Figure 1
Proposed Urban Release Area map.

Land use zones

The main existing zone is RU2 – Rural Landscape. The draft Place Strategy proposes a new mix of the following:

- R2 – Low Density Residential
- R3 – Medium Density Residential
- R5 – Large Lot Residential
- RU2 – Rural Landscape
- B1 – Neighbourhood Centre
- SP2 – Infrastructure
- E1 – National Parks and Nature Reserves
- E2 – Environmental Conservation
- RE1 – Public Recreation
- RE2 – Private Recreation
- E3 – Environmental Management.

Areas of RU2 – Rural Landscape will be retained in the area to the south of Mona Vale Road where bushfire asset protection zones are required and to act as a buffer to adjacent bushland, and the residential zones further within the precinct. As noted, the existing zones to the north of Mona Vale Road are unchanged and already offers a broad range of permissible land uses that are compatible with the rural setting.

The proposed changes to land zoning for the precinct are illustrated in Figure 2.

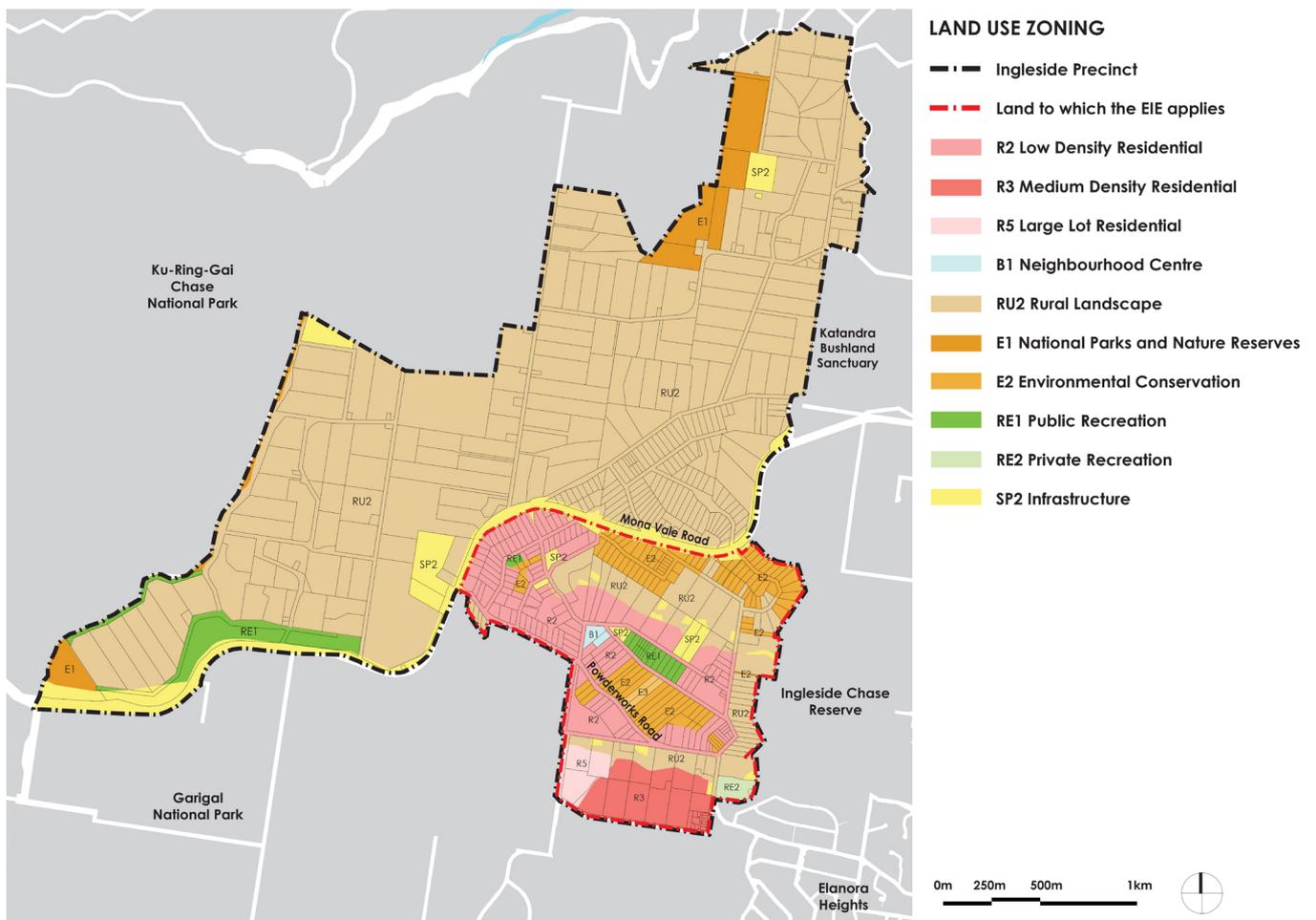


Figure 2
Proposed land use zones map.

Building heights and floor space ratios

An existing maximum height of 8.5 metres applies to most of Ingleside. This is largely retained except for a 10.5 metre control in the proposed R3 – Medium Density Residential zone as well as the smaller areas covered by the

SP2 and B1 zones as focussed on the location for neighbourhood shops. This will allow for low-rise apartments and townhouses in Character Area 3 to the south and overlooking Elanora Country Club and appropriately scaled development at the civic heart of the precinct.

The proposed changes to the Height of Building Map for the precinct are illustrated in Figure 3.

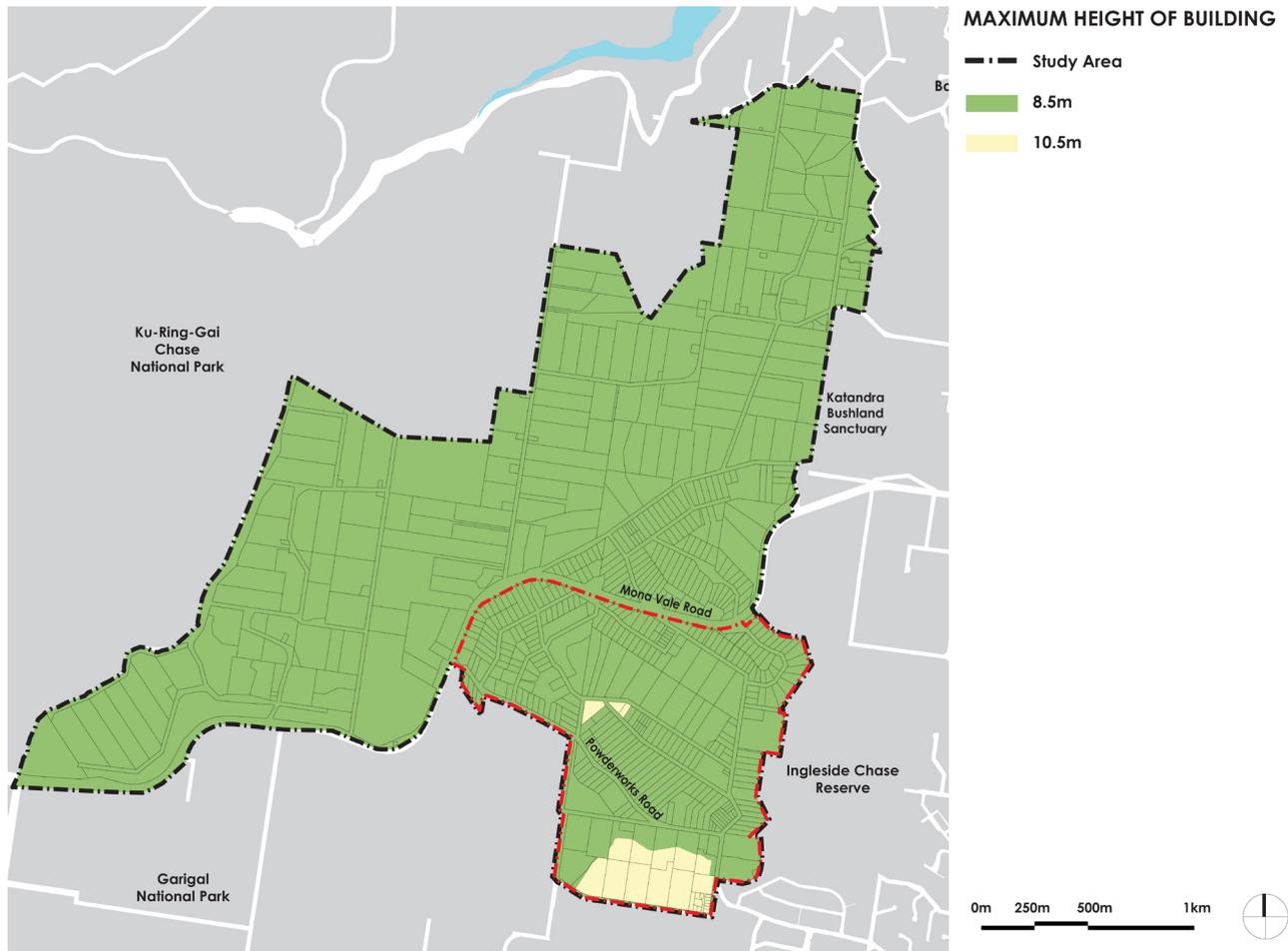


Figure 3

Proposed height of building map.

No floor space ratio controls apply to Ingleside at present and this is not proposed to be changed.

Minimum subdivision lot sizes

The existing minimum lot size over most of Ingleside is 20,000 m², or 2 ha. This coincides with all RU2 – Rural Landscape land. Areas retaining the RU2 – Rural Landscape zone will retain this minimum lot size.

The draft Place Strategy otherwise proposes:

- R2 – Low Density Residential: minimum lot size of 450 m²
- R3 – Medium Density Residential: minimum lot size of 225 m²
- R5 – Large Lot Residential: minimum lot size of 1,500 m².

The proposed changes to minimum lot size for the precinct are illustrated in Figure 4.

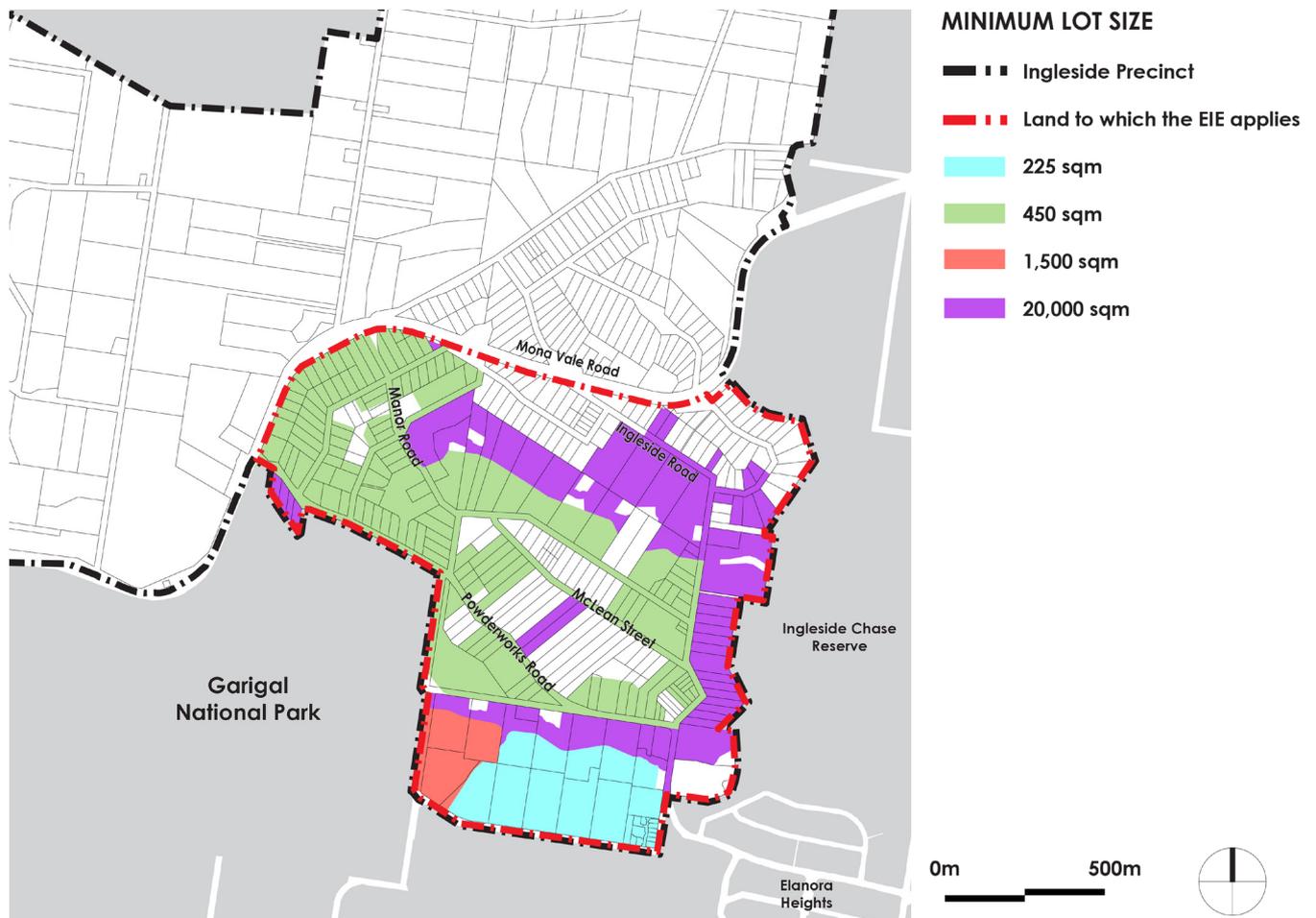


Figure 4
Proposed minimum subdivision lot sizes map.

Land Reservation Acquisition

Proposed amendments to the Land Reservation Acquisition Map intend to ensure land nominated for a public purpose is identified.

Land identified for acquisition in Ingleside is specific to priority infrastructure, including water management and road widening.

The proposed changes to Land Reservation Acquisition for the precinct are illustrated in Figure 5. These acquisitions are subject to further investigation to minimise land acquisition requirements.

A separate Land Dedication Map may be prepared by Council and incorporated into the Development Control Plan. The purpose of this map would be to identify land that forms the residual component to sites being redeveloped adjacent to the riparian corridors. Ideally, dedication of this land to Council will enable the long term management and improvement to the riparian corridor and potentially provide opportunities for walking trails.

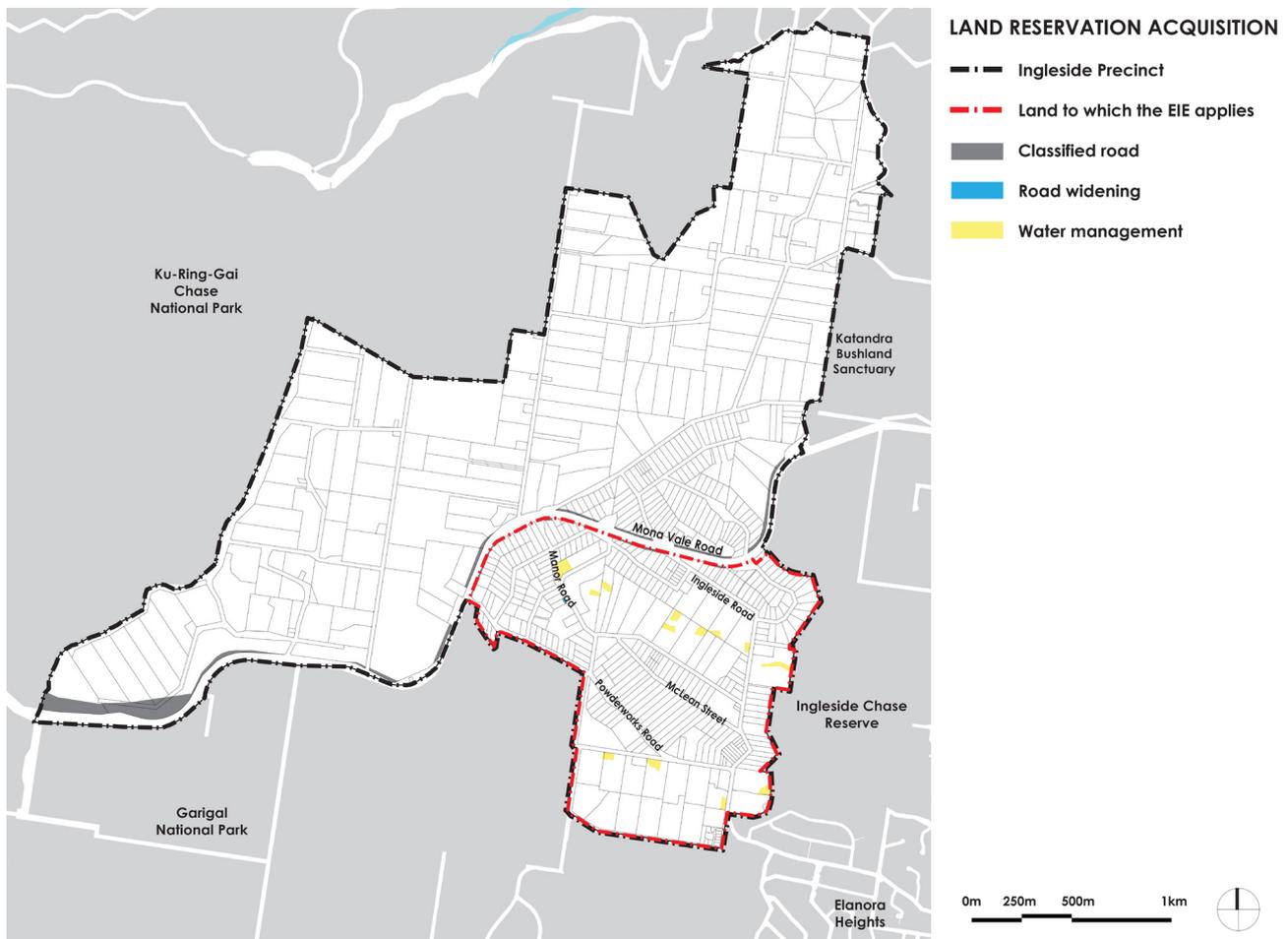


Figure 5
Proposed Land Reservation Acquisition map.

Maximum total dwellings

The proposed maximum number of new dwellings to the south of Mona Vale Road will be capped at 980, and 1,110 in total (based on some 130 existing dwellings) across the entire precinct. This maximum dwelling capacity is important for the renewal of the precinct, to support requirements for safe evacuation in the case of bushfire.

Character Areas 1-4 will each be subject to a maximum number of dwellings within identified smaller development areas shown on the maximum total dwellings map. The area to the north of Mona Vale Road is not subject to a dwelling cap under the existing planning controls.

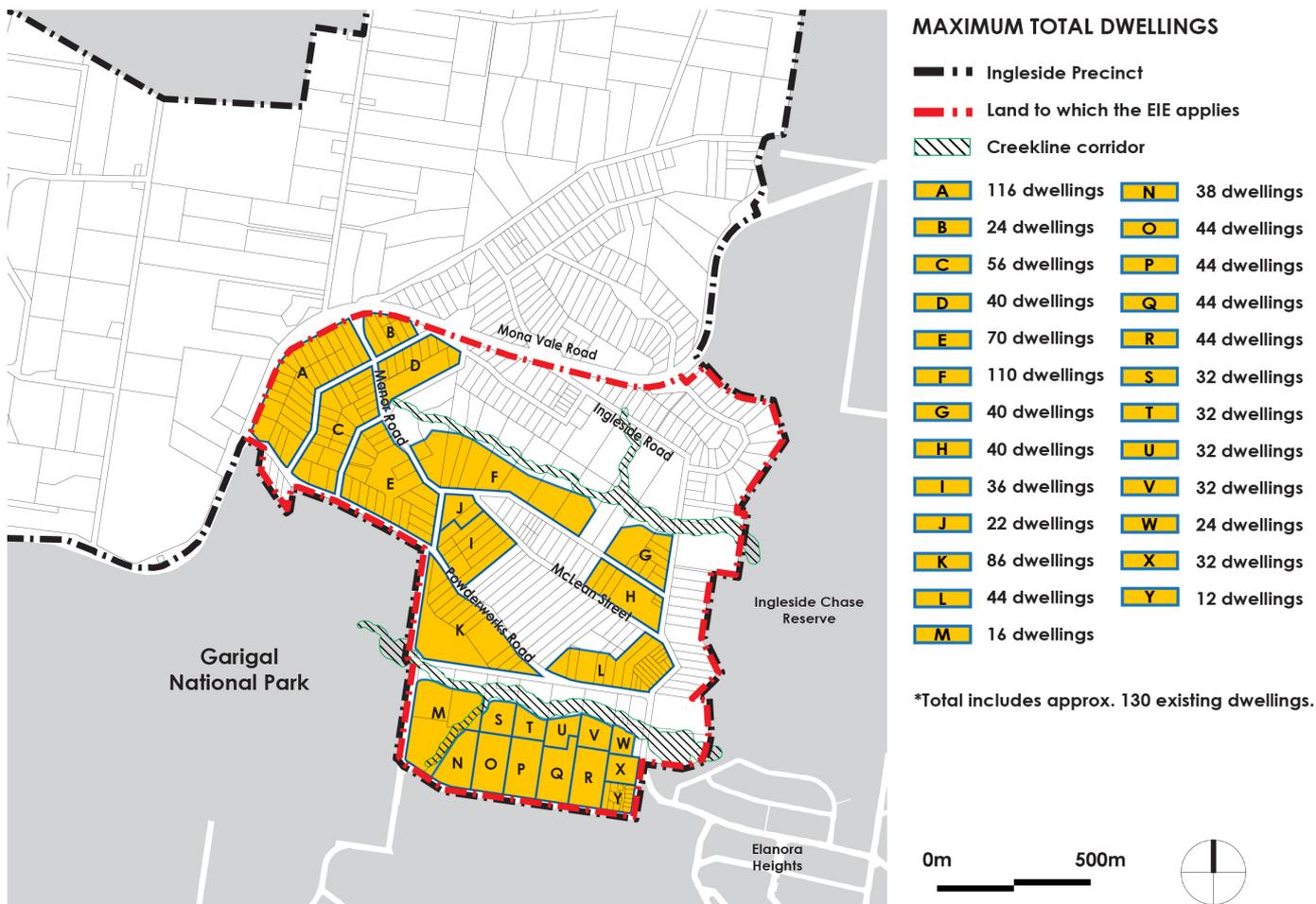


Figure 6
Maximum total dwellings map.

Heritage

The existing heritage protections will continue to apply and there is no need to add new listings given these protections.

Site-specific provisions/ Key site provisions

As is the case in the Warriewood Valley Release Area, the area to the south of Mona Vale Road will be identified as a release area under Pittwater LEP 2014. Precinct-specific controls within Character Areas 1-4 will also assist in delivering appropriate built form and scale commensurate with height and zoning controls.

Character Area 3 where land is to be zoned R3 – Medium Density Development will be subject to minimum lot sizes and lot frontage sizes by development type.

As noted above, development yield within the residential land use zones will be controlled and capped across the precinct to ensure the total capacity of land to the south of Mona Vale Road is capped to 980 new dwellings. This will ensure the bushfire evacuation threshold cannot be exceeded.

Further, the requirement for a site-specific DCP will ensure staged development and the staged provision of suitable infrastructure and roadworks. The DCP will also ensure fine-grained built form, landscaping, stormwater, sustainability and amenity outcomes result to help create the unique 'place'.

Affordable housing

The proposed affordable housing target of 10 per cent may be taken up within Character Area 3 where low-rise apartments or townhouse type development will create greater opportunity and feasibility. Council will balance the feasibility of providing affordable housing with the need to deliver local infrastructure to support growth in Ingleside. Affordable housing will be delivered in line with a local contributions scheme setting out how, why and at what rate development contributions for affordable housing can be collected by Council.

Development control plan

The draft DCP will be prepared by Council and set out fine-grain built form, sustainability and urban design provisions.

These are likely to include:

- layout and precinct structure controls, such as road, open space, and connections
- built form controls
- landscaping and private open space controls
- bushland, native vegetation, tree protection, and natural features requirements
- waterways and riparian corridor protection
- sustainability requirements and targets, including the Premier's Priority target to increase tree canopy cover across Greater Sydney to 40%
- bushfire building standards to support Planning for *Bush Fire Protection 2019*
- stormwater and water cycle management requirements and targets (for water quality and water quantity)
- amenity, view sharing, solar access, and privacy requirements and controls
- geotechnical requirements
- flood planning controls
- neighbourhood centre controls.

Development applications within the area south of Mona Vale Road and which are not minor in nature, will not be able to be determined under the proposed planning controls until a DCP has been prepared and is in force.

The right infrastructure

Technical studies and inputs from State agencies and Council informed the infrastructure planning for the precinct.

Infrastructure is funded through a variety of mechanisms, including land dedication, local infrastructure contributions, and State agency budgets. This section summarises the proposed infrastructure funding mechanisms while Appendix C summarises the likely infrastructure needs.

Planning for infrastructure is guided by the following principles:

- Infrastructure will maintain or improve quality of life and places for residents in and around Ingleside.
- Delivery of infrastructure will be coordinated between the State Government and Council.
- Infrastructure will be available at the right time and aligned with growth.

Local development contributions

Most infrastructure will be funded via Council's development contributions plan which is to be prepared by Council during 2021.

The development contributions plan is required to consider the orderly delivery of infrastructure and access arrangements to successfully coordinate the proposed renewal of the precinct.

Councils levy contributions as a condition of development consent to fund or upgrade the local infrastructure and facilities that will result from the increase in residents and requirements that come from development.

This draft Place strategy identifies likely infrastructure and land to be acquired for a public purpose - road widening, community uses, water management, open space and environmental conservation—to support the planned renewal of Ingleside.

The Structure Plan also identifies an indicative road network hierarchy to support the future land uses, which includes both existing and proposed internal roads and new cycle connections to the regional, district and local network.

It is proposed to amend the *Environmental Planning and Assessment Regulation 2000* at the same time as the SEPP is made to prevent a consent authority from granting consent to a development application (other than for minor works) in the Ingleside Urban Release Area (the area south of Mona Vale Road) unless a local contributions plan is in force for this area.

It is also proposed to amend the *Environmental Planning and Assessment (Local Infrastructure Contributions) Direction 2012*, under the EP&A Act, to allow Council to require local infrastructure contributions for new residential development in the Ingleside Urban Release Area of up to \$30,000 per dwelling or per residential lot. Currently, contributions are capped at \$20,000 per dwelling or per residential lot.

Voluntary planning agreements

Under planning legislation, a developer can enter into a voluntary planning agreement to provide infrastructure associated with a change to planning controls or a development application in lieu of a financial contribution. This will be a possible option as Ingleside develops.

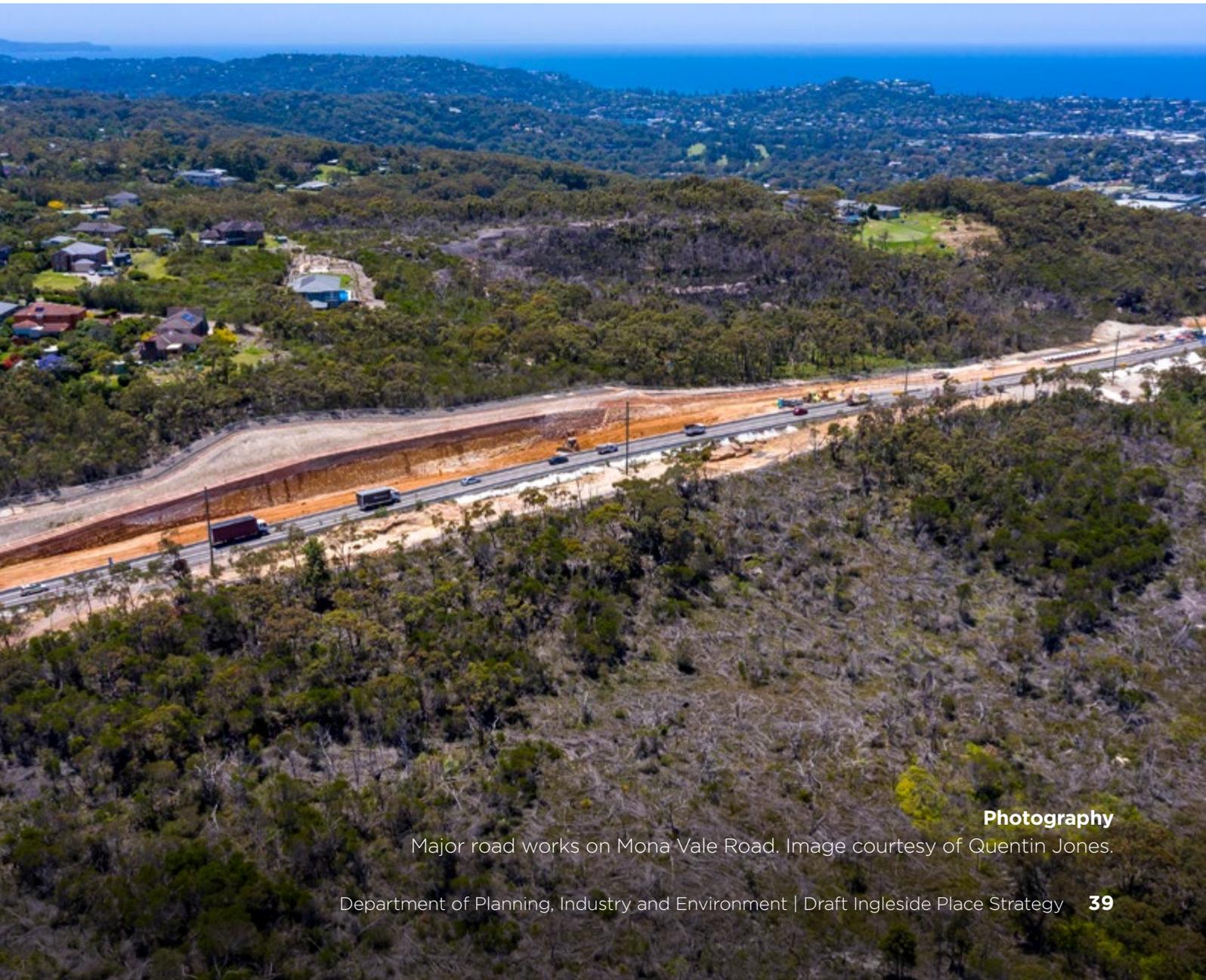
Agency budgets

Infrastructure can be funded through relevant State agencies' capital works budgets. This recognises the limited capacity of contributions to fund the required infrastructure, and that some infrastructure improvements are required regardless of the growth anticipated in this draft Place Strategy.

Of works already committed that benefit Ingleside, the Mona Vale Road upgrade is being delivered by the NSW Roads and Maritime Services in three stages:

- Stage 1 comprising the intersections improvements at Mona Vale Road and Ponderosa Parade has been completed.
- Stage 2 of the Mona Vale Road East upgrade is between Manor Road and Foley Street which commenced in January 2019 and is expected to be complete by 2022.
- Stage 3 is the Mona Vale Road West upgrade between McCarrs Creek Road and Powderworks Road.

Transport for NSW also confirms that two cycle links will be required to connect to the Principal Bike Network along Mona Vale Road.



Photography

Major road works on Mona Vale Road. Image courtesy of Quentin Jones.

Appendix A – Strategic planning context

The Greater Sydney Region Plan. *A Metropolis of Three Cities* establishes a 40-year vision to 2056 for Greater Sydney to be a metropolis of three cities, enabling most people in Greater Sydney to get to their nearest strategic centre within 30 minutes by public transport.

The Region Plan provides strategies for infrastructure and collaboration, liveability, productivity, sustainability and implementation supported by 10 key directions, all of which are reflected in this Place Strategy and by the master planning.

These 10 key directions are:

- A city supported by infrastructure—Infrastructure supporting new developments
- A collaborative city—Working together to grow a Greater Sydney
- A city for people—Celebrating diversity and putting people at the heart of planning
- Housing the city—Giving people housing choices
- A city of great places—Designing places for people
- A well-connected city—Developing a more accessible and walkable city
- Jobs and skills for the city—Creating the conditions for a stronger economy
- A city in its landscape—Valuing green spaces and landscape
- An efficient city—Using resources wisely
- A resilient city—Adapting to a changing world.

It also establishes priorities for strategic centres:

- Global Sydney (including North Sydney CBD)
- Brookvale-Dee Why
- Chatswood
- Northern Beaches Hospital Precinct
- Hornsby
- Macquarie Park
- St Leonards.

The Greater Sydney Region Plan *A Metropolis of Three Cities* is supported by five district plans that act as a bridge between regional and local planning. Ingleside is located within the North District and is included in the North District Plan.

The Greater Sydney Region Plan *A Metropolis of Three Cities* provides priorities for the North District including:

- a competitive economy
- accelerate housing supply, choice and affordability and build great places to live
- protect the natural environment and promote its sustainability and resilience.

The North District Plan identifies Ingleside as:

- a Growth Area with opportunity for a new community and environmental areas
- an area where the NSW Department of Planning, Industry and Environment, will collaborate with and bring together the Northern Beaches Council, Transport for NSW, NSW Roads and Maritime Services, and other State agencies to plan for new housing and infrastructure
- a State-led initiative and opportunity to enhance liveability, sustainability and productivity
- home to rural industries (such as nurseries and the equine industry) that are important industry sectors within the Metropolitan area
- an opportunity to further contribute to Sydney's Green Grid assets
- an opportunity to include precinct-wide energy, water and waste efficiency systems to reduce carbon emissions to net zero and better management water and waste.

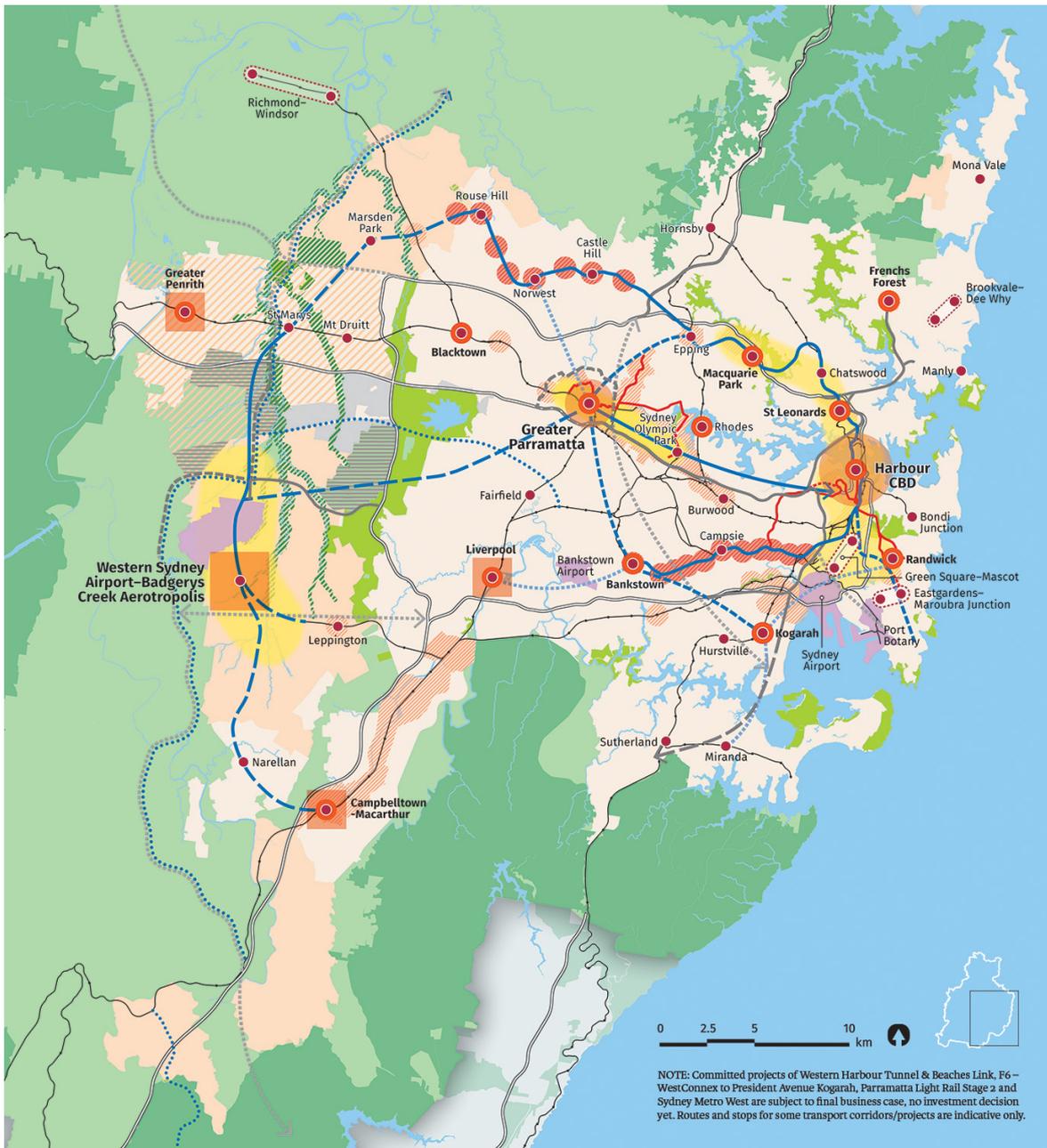


Figure 7
Ingleside in the context of Greater Sydney.

The North District Plan identifies that an additional 92,000 homes will be needed in the District by 2036. Of this, Ingleside will accommodate approximately 980 new homes and generally provide for a component to new short to mid-term housing opportunity as part of the North District’s and Northern Beaches housing targets.

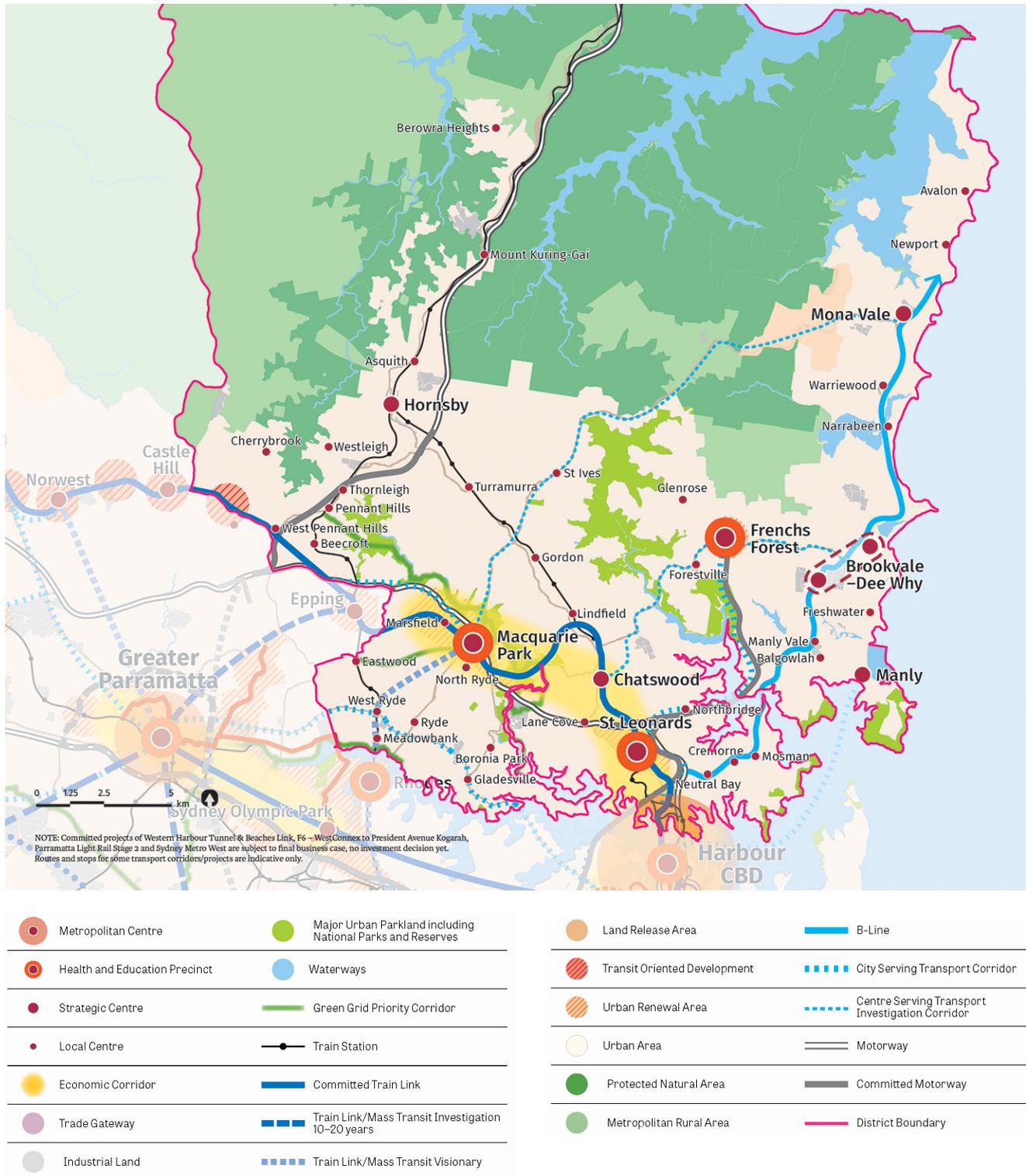


Figure 8
Ingleside in the context of North District.

The *Future Transport Strategy 2056* sets the vision and direction for NSW transport investment. It links transport to land use, tourism and economic development. Rather than focus on individual modes of transport, it provides integrated solutions through issue-specific and place-based plans. This includes a movement and place framework to ensure that transport supports the character of the places and communities.

Of relevance to Ingleside, the precinct's connectivity under the *Future Transport Strategy 2056* includes:

- recently completed upgrades to Mona Vale Road to and through Ingleside
- investigation for the east-west public transport connection from Mona Vale to Macquarie Park
- connection to Mona Vale and Frenchs Forest as part of Sydney's Principal Bicycle Network.

Opportunity also exists for on-demand public transport services to be realised to enhance connectivity within and around Ingleside.

Council's Northern Beaches Transport Strategy 2038 echoes this ambition. It aims for a quarter of all trips in Northern Beaches LGA to be made by public transport by 2038, and for a 30 per cent reduction in trips by cars in the same period.

The State Infrastructure Strategy sets out the NSW Government's priorities for the next 20 years. It combines with the *Future Transport Strategy 2056* and the Region Plan to bring together infrastructure investment and land use planning.

The Strategy identifies the Western Harbour Tunnel and Beaches Link, which would improve travel times, and their reliability, for public transport, freight, services and commuters travelling between the Northern Beaches and other strategic centres across Sydney. These works are subject to environmental assessment and planning approvals and the timeframes for delivery are yet to be determined.

The Beaches Link would improve car and bus journey times to and from the Northern Beaches, including to commercial hubs at Sydney CBD, North Sydney, Artarmon and Macquarie Park, while also improving infrastructure and travel conditions for pedestrians and cyclists. This would support the objectives of the draft Place Strategy and its potential has been considered in the technical investigations for the planned precinct.

Local planning

Northern Beaches Council's Local Strategic Planning Statement, *Towards 2040*, outlines priorities and actions for the Northern Beaches over the next 20 years.

Towards 2040 identifies Ingleside as a growth area for a range of housing options and housing affordability. It is further identified as an area with a distinct scenic and cultural landscape and with inherent hazards due to its bushland setting.

A key action of Council and the Department has been to resolve the future of Ingleside so that any development to meet housing goals is sustainable and resilient to natural hazards. This is actioned via the detailed bush fire evacuation study and community engagement.

Ingleside is also identified as an area that could provide additional infrastructure to support new housing development, including open space and sports fields.

One of the document's planning priorities is to achieve a low-carbon community, with high energy, water and waste efficiency with zero net emissions by 2050.

Based on the above, the local planning objectives for Ingleside align with this draft Place Strategy.



Photography

Major road works on Mona Vale Road. Image courtesy of Quentin Jones.

Appendix B – Background studies and investigations

The draft Place Strategy is informed by various specialist technical studies and investigations.

Spatial planning, structure planning, and assessment of land use and dwelling mix, types, and densities

In summary, the structure plan devised by Cox provides for the following within the area to the south of Mona Vale Road:

- Development opportunity for approximately 980 new dwellings to a total of approximately 1,110 dwellings, of a mix of types including:
 - Houses on larger lots (yield: 16)
 - Houses on smaller semi-suburban-scaled lots (yield: 684)
 - Low-rise apartments and townhouses (yield: 410).
- New local shopping centre.
- New sports fields.
- Parks and open space.
- Biodiversity conservation.
- Heritage conservation.
- Water cycle management.
- Estimated population increase of about 3,000 people.

The precinct is divided into 5 character areas reflective of the development types, land uses, physical and scenic characteristics.

The northern portion of Ingleside, to the north of Mona Vale Road has been identified as an area to retain its existing rural-residential character following detailed consideration of a range of bushfire and evacuation, environmental, and servicing constraints. No change is proposed to the area north of Mona Vale Road and the existing land use zoning and development parameters under Pittwater LEP 2014 are retained.

The key reasons for not further pursuing change to the north of Mona Vale Road have included:

- Bushfire risk is acute and any population growth is presently unaccepted due to evacuation limitations and concerns.
- The area is generally un-serviced or under-serviced. The costs of servicing will be prohibitive in the context of any change likely to be accepted on the basis of the bushfire risk and evacuation limitations.
- Highly variable topography.
- Adjacency to National Parks.
- Increased heritage impacts.
- Biodiversity and environmental impacts.
- Visual impacts and reduction in established scenic and cultural landscapes.

Any development opportunities to the north of Mona Vale Road will be considered as Council undertakes comprehensive planning processes for a new Northern Beaches Local Environmental Plan (LEP). Existing planning controls will remain in place until Council undertakes this process. Any new development in this area will need to be serviced to match corresponding population growth.

Bushfire risk and protection

Eco Logical has prepared a new Bush Fire Strategic Study to address the now reduced area of the precinct and the refined structure plan arising from the bushfire risk and evacuation concerns under the 2016 structure plan.

The new structure plan is substantially different to the 2016 proposal given the much smaller development outcome (3,400 dwellings down to 980 new dwellings) located in a substantially smaller area and confined to the lowest risk portion of the locality (i.e. all proposed development is south of Mona Vale Road only). While this new Bush Fire Strategic Study needs to address concerns raised about the 2016 wider structure plan area, it focusses on the ability of the new structure plan to comply with *Planning for Bushfire Protection 2019* and specifically the Strategic Planning requirements of Chapter 4 and specific issues raised by key stakeholders.

The Bush Fire Strategic Study has examined whether the area to the south of Mona Vale Road is appropriate in the bush fire hazard context and the strategic implications of future development for bush fire mitigation and management. At the request of key stakeholders, the new structure plan has also been evaluated against the approach and findings in the earlier bushfire risk assessment (Meridian Urban 2018) and specifically whether previous stakeholder agreed 'benchmarks' are met by the new Structure Plan.

This Study associated with the new reduced structure plan area revealed:

- Areas of elevated bushfire risk exist in the broader landscape, but varies across that landscape
- The elevated risk areas are beyond and well separated from the Ingleside south precinct
- The bushfire hazard context on lands immediately adjoining the Ingleside south

precinct are generally a lower threat type with strategic implications for future development able to be appropriately managed under the Acceptable Solutions within *Planning for Bushfire Protection 2019*

- Small internal bushfire hazards exist within the Ingleside south precinct but are well separated from landscape-wide hazards and/or classified as low hazard under *Planning for Bushfire Protection 2019*.

Given the lower bushfire risk profile of the Ingleside south precinct at a strategic level and the new precinct-focussed bushfire evacuation analysis concluding satisfactory 'unassisted' off-site evacuation is feasible, the findings of the Study are:

- The new structure plan can comply with the Strategic Planning Principles of *Planning for Bushfire Protection 2019*
- That the Acceptable Solution bushfire protection measures within *Planning for Bushfire Protection 2019* can be met by the future development envisaged by the new structure plan and it offers additional protection measures beyond the minimum compliance under *Planning for Bushfire Protection 2019*
- Compliance with *Planning for Bushfire Protection 2019* is not reliant on the intervention/response by emergency services or hazard management on adjoining land
- The proposed development will not adversely impact the bushfire safety of occupants of nearby existing development and wherever possible lower the risk
- The new structure plan does not breach safety 'benchmarks' of the previous study by Meridian Urban in 2018
- An appropriate level of safety is possible from 'unassisted' off-site evacuation.

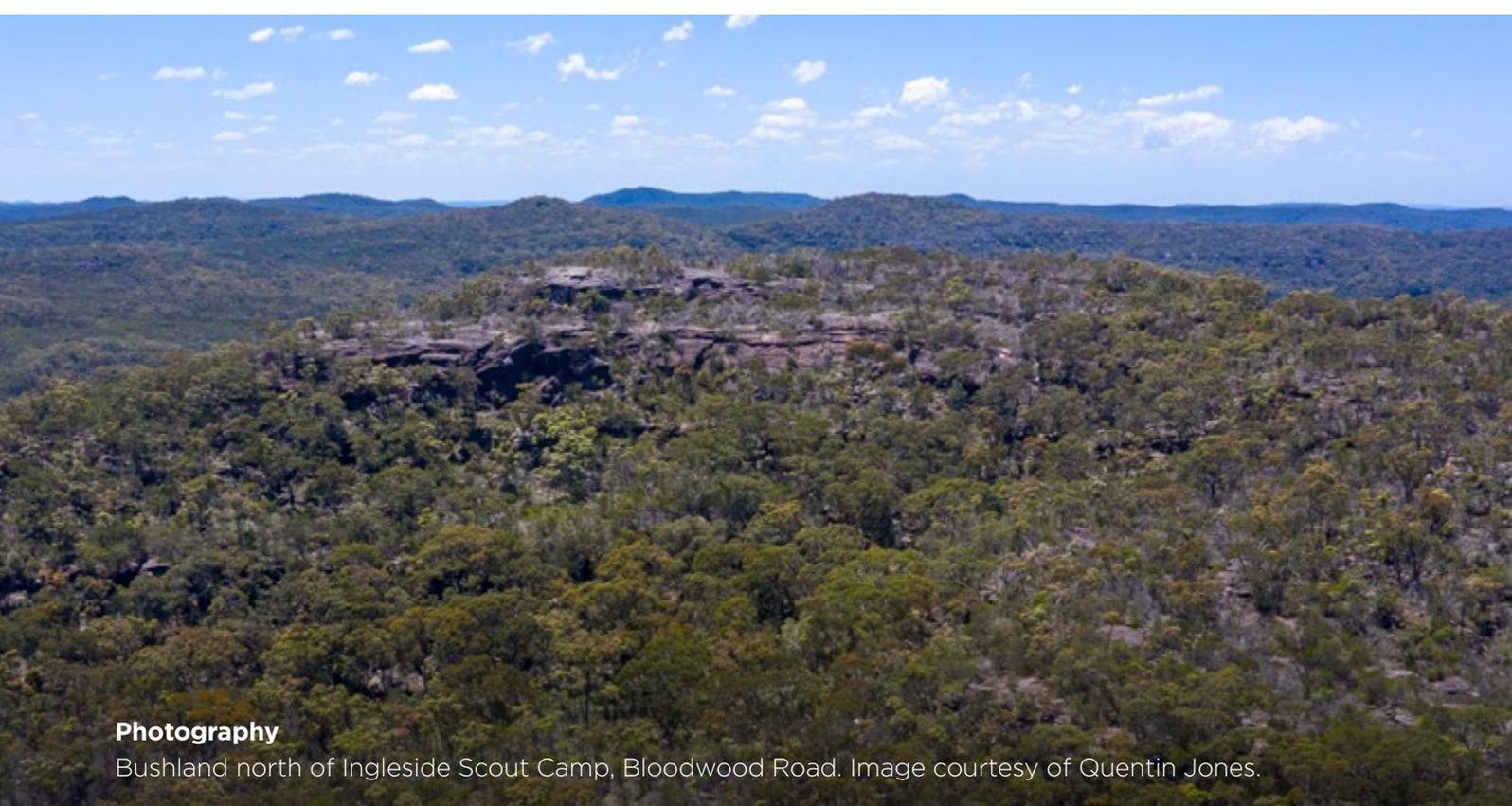
These findings conclude that the level of residual risk after inclusion of the bushfire protection measures typically applied under *Planning for Bushfire Protection 2019*, is appropriate and the new structure plan meets the *Planning for Bushfire Protection 2019* strategic planning principles and requirements. Specifically, that the aims and objectives, acceptable solutions and performance requirements of *Planning for Bushfire Protection 2019* pertaining to risk to life and risk to property can be met or exceeded. Further, there is not a reliance on emergency service response/intervention, nor a reliance on fuel management on adjoining lands to provide the level of bushfire protection and residual risk.

Several recommendations are made, including:

- Ensuring that further bushfire assessment is undertaken when more detailed development designs are available in later stages of the planning pathway, and that these designs maintain the compliance with *Planning for Bushfire Protection 2019* that the new structure plan facilitates

- Explore mechanisms to provide an on-site evacuation building, which will provide additional bushfire protection redundancy
- Residential subdivision design should provide for perimeter roads for all new development of three or more allotments that abut bushfire hazard as prescribed by *Planning for Bushfire Protection 2019*
- Continued consultation with relevant agencies regarding emergency management requirements and infrastructure provision
- The Department should ensure adequate water supply compliant with *Planning for Bushfire Protection 2019* can be provided.

The Study also observed that the bushfire risk of existing developments outside the Ingleside south precinct warrants further mitigation (given the legacy issues) beyond the benefit that the proposed development of the Precinct would provide. Further, that the strategic planning requirements of *Planning for Bushfire Protection 2019* can be improved with clearer Acceptance Criteria (development assessment 'pass marks') for strategic planning assessment.



Photography

Bushland north of Ingleside Scout Camp, Bloodwood Road. Image courtesy of Quentin Jones.

Bushfire evacuation

PDC Consultants has prepared a Bushfire Traffic Analysis principally to address evacuation capacity within the precinct in response to the previous concerns raised. The analysis (in tandem with the Eco Logical bushfire risk assessment) has concluded that development to the south of Mona Vale Road and a yield of 980 new dwellings (in predominantly low-density housing) is able to adequately evacuate the area unassisted via Powderworks Road in an easterly direction in the event of a bushfire.

The assumptions for the analysis were:

- Full, off-site evacuation with no use of Evacuation Centres or Neighbourhood Safer Places.
- Evacuation is to be triggered by commonly-used community evacuation triggers such as emergency radio broadcasts, Fires Near Me application or Emergency Service authorised text messages.
- Physical assistance is not provided in the vicinity of the Ingleside Precinct and traffic generated by the proposed development uplift does not evacuate via routes reliant upon any physical, in-person presence of emergency services.
- Mona Vale Road is not available for evacuation given its extended frontage to bushland areas subject to bushfire risk.

The findings of the analysis are:

- The previous AECOM Study tested evacuation via Powderworks Road southbound and identified the intersection with Kalang Road to be the limiting pinch point at which the progression of this traffic would be constrained.
- Conservative analysis of performance at this intersection identified that traffic generated by up to approximately 1,000 additional dwellings could satisfactorily use this route when assessed against pre-defined criteria.
- Given provisions proposed within the revised structure plan has not materially changed, no further traffic assessment or modelling is necessary.
- Traffic generated by the development uplift (some 1,222 vehicle trips) will likely be able to evacuate satisfactorily under assumed evacuation conditions.

Traffic and transport

A Traffic and Transport Assessment by SCT Consulting has updated the previous AECOM study of August 2016 and considered the revised yield and scope of the structure plan. It has also considered contemporary existing conditions as a basis of its findings. This includes consideration of the current and ongoing major upgrade works to Mona Vale to both the west and east of Ingleside.

SCT has concluded that the proposed transport network for the revised precinct remains the same as what was proposed in the 2016 Draft Structure Plan. Access to the wider Sydney region is provided by Mona Vale Road with intersections at Powderworks Road and Manor Road. Access to the south is also provided by Powderworks Road. Mona Vale Road remains as the high order urban arterial and Powderworks Road is the urban distributor/sub-arterial. Manor Road and Wattle Road are the major local roads/collectors, linking Mona Vale Road and Powderworks Road, and are supported by the other minor local roads that provide local access.

Transport for NSW is improving bus stop infrastructure as part of the Mona Vale Road upgrades and the intent of improved service provision between Mona Vale and Macquarie Park that provides interchange with the B-Line and metro services respectively. Apart from Mona Vale Road, Powderworks Road, Manor Road and Wattle Road would accommodate buses to provide improved public transport accessibility to the precinct.

A comprehensive walking and bicycle network is proposed for the precinct, which will link the neighbourhood centre and residential neighbourhoods with key strategic routes and onward destinations. The proposed bicycle network is subject to design and is anticipated to include a mixture of dedicated bicycle facilities, such as off-road (shared path), on-road (cycle lane) and off-road (shared path—green corridor). All proposed roads in the precinct will have dedicated pedestrian footpaths to create a comprehensive network following proposed road alignments. There is also an opportunity to provide recreational paths on the riparian corridors adjacent to Mullet Creek to encourage leisure walking within the precinct.

In terms of road and transport infrastructure upgrades required, given the overall reduction in yield, the capacity of the upgraded regional road network will not require any further works. This includes the intersection of Mona Vale and Pittwater Roads up to 2036. Similarly, other upgrades to intersections at Mona Vale and Chiltern and Lane Cove Roads are no longer warranted.

A number of intersection upgrades along Powderworks Road (within the precinct) from priority intersections to roundabouts were proposed to ensure safe access to Powderworks Road by future residents (rather than for intersection capacity reasons) remain relevant. Some minor works proposed for Powderworks Road/Garden Street also remain relevant.

All other previously proposed active and public transport infrastructure and service improvements remain valid for the delivery of proposed development within the revised precinct. These include:

- A range of bus services improvements within the precinct, along Mona Vale Road and at Mona Vale
- Active transport improvements within the precinct
- Realignment of Baha'i Temple Way to the 4-arm signalised intersection and upgrade of the Powderworks Road approach of the intersection to be delivered under the Mona Vale Road West upgrade project (noting however that there is currently no funding and timing commitment by TfNSW)

- Powderworks Rd | Wattle Rd - Roundabout provided to facilitate access across Powderworks Road
- Powderworks Rd | Wilson Ave - Roundabout provided to facilitate safer access to Wilga-Wilson
- Powderworks Rd | Ingleside Rd - Roundabout provided to facilitate safer access to Ingleside Road
- Powderworks Rd | Wilga St - Roundabout provided to facilitate safer access to Wilga-Wilson.

A range of other local road upgrades and future local roads will also be required. Bicycle network connections will be included within these new or upgraded roads.



Photography

Monash Country Club, Powderworks Road. Image courtesy of Quentin Jones.

Infrastructure demand and delivery

Sydney Water has advised that the planned growth area for Ingleside, south of Mona Vale Road, will be able to be serviced with potable water supply via capacity at the existing Elanora Heights Reservoir. Booster pumps will be needed for higher elevated areas. Similarly, the precinct is able to use existing gravity-drained sewer infrastructure.

The electricity supply network has capacity to service development at Ingleside. Ausgrid has confirmed that the precinct can be supplied by two new 11kV feeders from the Mona Vale Zone Substation.

The gas supply network will be augmented over time to meet new demand for up to 980 new dwellings in this area.

The telecommunications networks of Telstra and the NBN are presently not planned for this area but will need to be expanded into the area.

Biodiversity/ecology

Eco Logical has assessed the ecological outcomes of the proposed new structure plan and updated its previous findings given recent changes to biodiversity legislation. In doing so, Eco Logical has identified the biodiversity values within the precinct, described the outcomes of the proposed new structure plan and provided conservation management recommendations.

The report contains information and data that was gathered for the previous structure plan which included a proposal for Biodiversity Certification under the now repealed *Threatened Species Conservation Act 1995* (TSC Act). Whilst Biodiversity Certification is no longer proposed, the data gathered for that proposal during field surveys in 2014-16 has been used for this report.

Vegetation survey, collection of biometric transects/plot data, and targeted surveys for threatened species were undertaken on lands that were accessible. No additional survey was completed in 2021 for the purposes of this

updated assessment other than a reconnaissance to confirm there had been no major changes in vegetation cover.

Six plant community types and approximately 69.59 ha of native vegetation have been identified in the precinct (of about 180 ha in area) with approximately 61.40 ha proposed for rezoning. The remaining approximate 110 ha were classified as either 'exotic' which comprised non-native planted vegetation and/or weed species, or previously cleared. A large proportion of the native vegetation was assessed as being in good condition, with weed invasion mainly confined to tracks, edges and small isolated areas of disturbance. However, some areas of native vegetation had reduced plant species diversity and moderate to heavy weed presence in the mid-storey and groundcover strata. The poorer condition vegetation communities occurred along watercourses and some minor drainage lines in disturbed catchments, roadsides and adjacent to land-uses involving heavy earthworks and landfill.

One endangered ecological community is located within the precinct. Coastal Upland Swamp is listed as endangered under the NSW *Biodiversity Conservation Act 2016* (BC Act) and under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

A total of 23 threatened fauna species and 14 threatened flora species are either known or considered as having potential to occur within the precinct. These include, but are not limited to:

- *Callocephalon fimbriatum* (Gang-gang Cockatoo)
- *Calyptorhynchus lathamii* (Glossy Black Cockatoo)
- *Cercartetus nanus* (Eastern Pygmy Possum)
- *Darwinia biflora*
- *Dasyurus maculatus* (Spotted-tailed Quoll)
- *Eucalyptus camfieldii*
- *Haliaeetus leucogaster* (White-bellied Sea Eagle)
- *Heleioporus australiacus* (Giant Burrowing Frog)

- *Hieraaetus morphnoides* (Little Eagle)
- *Hoplocephalus bungaroides* (Broad-headed Snake)
- *Isoodon obesulus* (Southern Brown Bandicoot)
- *Lathamus discolor* (Swift Parrot—foraging only)
- *Melaleuca deanei* (Deane's Paperbark)
- *Microtis angusii* (Angus Onion Orchid)
- *Miniopterus australis* (Little Bentwing Bat)
- *Micronomus norfolkensis* (Eastern Coastal Freetailed Bat)
- *Myotis macropus* (Southern Myotis)
- *Ninox connivens* (Barking Owl)
- *Ninox strenua* (Powerful Owl)
- *Persoonia hirsuta* (Hairy Geebung)
- *Petalura gigantea* (Giant Dragonfly)
- *Petaurus australis* (Yellow-bellied Glider)
- *Petaurus norfolcensis* (Squirrel Glider)
- *Phascolarctos cinereus* (Koala)
- *Tyto novaehollandiae* (Masked Owl)
- *Tyto tenebricosa* (Sooty Owl)
- *Varanus rosenbergi* (Rosenberg's Goanna).

Prior to this study *Microtis angusii* (Angus's Onion Orchid), which is listed as Endangered under both the BC Act and EPBC Act, was known to occur in the south-western corner of the precinct in proximity to Mona Vale Road. This was the only known location for this threatened species, but additional records have been provided by Roads and Maritime Services, with locations identified in proximity to Mona Vale Road extending as far east as Ingleside Road. Intensive field survey was undertaken within the original precinct (which included land north of Mona Vale Road) in 2015/16 with a total of approximately 8,500 individuals from the *Microtis* genus counted. Individuals were classified into species in the field based on morphological characteristics and included *Microtis angusii*. Because the threatened species *Microtis angusii* is difficult to differentiate from other species within the genus, genetic testing subsequent to the field survey was utilised.

The genetic testing gave the result that individuals identified from the field surveys as *Microtis*

unifolia (a common and widespread species) were identified as *Microtis angusii* based on the genetic analysis.

A further 10 threatened flora species were considered as potentially occurring and areas of potential habitat have been mapped, but individuals were not detected during surveys in the appropriate time of year.

Two threatened frogs, Giant Burrowing Frog and Red-crowned Toadlet, are considered likely to occur due to the presence of suitable habitat and records in the Katandra Bushland Sanctuary and Ingleside Chase Reserve to the east. Eastern Pygmy Possum is known to occur with known records in habitat to the north of Powderworks Road. The remaining fauna species listed in the study are considered as potentially occurring, particularly in areas of habitat within or well connected to areas of continuous habitat throughout the locality. Breeding habitat for Southern Myotis potentially occurs in proximity to drainage lines and dams, and the species has been recorded in the Ingleside Chase Reserve to the east (their foraging habitat is captured under ecosystem credits under Biodiversity Assessment Method (BAM)). Potential foraging habitat for Regent Honeyeater and Swift Parrot is present, however, this would be for infrequent vagrant individuals with the site unlikely to be of significance as a foraging resource whilst migrating.

Under the proposed rezoning, roughly three quarters of the vegetation will be retained in conservation zones, open space or rural land. This protects the key biodiversity corridors through the site. Unavoidable impacts will most likely require offsetting under the BAM at the DA stage.

Of greatest potential for positive and lasting biodiversity outcomes is the rezoning of government-owned lands in the north-eastern part of the Urban Release Area adjacent to Ingleside Chase Reserve to Environmental Conservation. This enables contiguous and consistent conservation values with areas already zoned E2 - Environmental Conservation and effectively results in the expansion of the reserve up the escarpment.

Riparian corridor retention and protection

Eco Logical has undertaken a Riparian Corridors Assessment within the precinct to identify and assess the ecological values of riparian lands and identify the riparian constraints and opportunities.

There are six watercourse reaches (being the tributaries of Mullet Creek) in varying conditions within or immediately adjacent to the precinct. The majority of these are in a degraded condition (five), with the remaining being in a moderate condition. All reaches were evaluated in terms of their conservation and recovery potential which identified the majority (five) have moderate to high recovery potential and one with low recovery potential.

It will be important to ensure that key watercourses are protected and enhanced to prevent any increase in adverse environmental impacts on the adjoining sensitive environments as urban development intensifies within the precinct. The layout and proposed land uses identified in the revised structure plan (and planning regime) seek to separate water and environmental land use from neighbouring development. All creeks have been assigned the mandatory riparian buffers. In most cases the buffer areas allowed for in the structure plan well exceed the minimum requirements, and vary from 24 m to almost 300 m in width.

Riparian corridors are protected and will be managed for environmental conservation including all those areas identified as high conservation priority in this report.

Accordingly, the revised structure plan supports the assessed importance of the riparian functions of this precinct and offers an opportunity to improve aquatic habitat and riparian connectivity.

Economic feasibility

SGS has carried out a development feasibility analysis based on the revised structure plan to provide strategic guidance as to what kinds of development may be feasible rather than dictate development outcomes.

SGS found:

- Development of both houses and townhouses is highly feasible on medium and large lots, indicating substantial room between recent land prices and the price a developer could afford to pay to feasibly develop a site.
- Development of houses and townhouses is generally unfeasible on existing small sites due to higher per square metre land prices, although development is close to feasible if the entire site can be developed.

The SGS modelling shows that it is reasonable to plan for development of both houses and townhouses at Ingleside. The revised structure plan has balanced the need for both environmental and resilience-based controls with the economic potential of proposed development. It is anticipated that, over time, these factors will equalise underlying land values to support development feasibility for Ingleside.

From a masterplan sequencing perspective, the feasibility analysis indicates that the subdivision and development of existing larger lots is more likely to be feasible in the early stages of the development, with smaller lots taking developing over a longer time frame.

Employment and retail demand

SGS has prepared an Economic, Employment and Retail inputs report in support of the draft Place Strategy. It concludes that in building on the strategic planning directions outlined in the Northern Beaches' LSPS, it is important to recognise that Ingleside is part of a wider local economy, and the accommodation of at least some of these needs should be considered at this wider geography.

Retail modelling indicates demand for a local centre of up to around 1,000 m², with a centre of this size or larger unlikely to reduce the turnover of other centres.

However, from a strategic planning perspective, there is a concurrent need to support the continued growth of Mona Vale as the Strategic Centre of the northern part of the Northern Beaches LGA, home to retail, commercial and other services. The Ingleside Precinct therefore should 'think small' in its provision of retail, with the provision of only a small local supermarket to provide day-to-day convenience needs, without adversely impacting the trade or other centre hierarchy functions of Mona Vale and Warriewood to the south. This would take the form of a small supermarket with provision for a couple of other smaller specialty stores.

From a commercial or employment perspective, a similar approach should be taken. The Northern Beaches' aspiration for Mona Vale to accommodate local employment uses should be fully supported, with very little commercial floor space provided in the Ingleside precinct. What could be potentially supported are several small ground floor shops that could accommodate, for instance, a local cafe, doctor's surgery or chemist. This should also be flexible enough to be used for local community facilities if required.

While various trends point to the growth of co-working, again the focus on supporting vibrancy in Mona Vale would indicate that such a use is not suited to the Ingleside Precinct. However, with COVID likely to have a lasting impact on how local people work (particularly those working in the CBD or other major commercial centres), a future centre

may provide shared meeting rooms to support these workers. It would be expected however that such a facility would be part of another piece of community infrastructure (such as a local library or community hall) rather than delivered in commercial suites by a private supplier.

Social infrastructure needs

The Demographic and Social Infrastructure Assessment prepared by Elton Consulting identified that the following community facilities, social services and open space would be required within the precinct once it is fully developed:

- New 400 m² community centre (excluding any childcare space)
- 2-3 playgrounds, including a larger district sized playground of around 500 m²
- Playing fields up to 3 ha
- A need for child care facilities for up to 100 spaces
- Environmental conservation land and creek corridors with a range of opportunities for passive recreation i.e. linear parks connecting surrounding open space and bushland, environmental interpretation activities.

Noise and vibration impacts upon the precinct

A Noise and Vibration Assessment prepared by AECOM assessed the proposed Mona Vale Road upgrade on the existing and future residents of Ingleside. Road traffic noise levels were predicted for 2036 and road traffic noise contours were mapped over the structure plan.

The road traffic noise levels are likely to exceed the criteria presented in the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) by up to 10 dB(A), where the proposed low density residential areas are located close to Mona Vale Road, and to a lesser extent Powderworks Road. Where this occurs, it is likely that noise mitigation measures will need to be considered in the preparation of the future Development Control Plan for the Ingleside precinct.

Aboriginal and non-Aboriginal heritage

Archaeological field surveys and an Indigenous Heritage Assessment was undertaken within the Precinct by Kelleher Nightingale for the 2016/2017 exhibition of the plan.

The study was carried out in consultation with nine local Aboriginal stakeholder groups and individuals registered on the project. Registered stakeholders participated in the field surveys and site recordings and provided information on the significance of Aboriginal sites and the Precinct. Twenty five Aboriginal sites were identified, all of high Aboriginal cultural heritage value.

The majority of recorded Aboriginal sites (15 or 60%) are situated either within land proposed for environmental conservation (52%) or national park (8%). The remaining sites are proposed to be conserved:

- Four sites (16%) were situated in potential future development areas including two in proposed Low Rise Apartments/Townhouse land use areas and two in the Houses land use areas.

These sites may be able to be accommodated in future development proposals and conserved through informed and sympathetic detailed design. These sites include rock engravings and grinding groove sites and are of high archaeological and cultural significance. The planning process should highlight these sites as worthy of conservation.

- Six sites (24%) were situated in the proposed Mona Vale Road corridor. These sites would be taken into consideration as part of the road upgrade project (Mona Vale Road Upgrade East and West) and may be able to be conserved within future road detailed design.

A non-Indigenous Heritage Assessment was undertaken by GML Heritage.

Where development is proposed within identified heritage curtilage or view corridors, further assessment and design resolution will ensure that heritage values are not adversely impacted.

The draft Place Strategy:

- retains and ensure ongoing use of the Baha'i Temple and continued ownership by the Baha'i faith
- allows low density residential development partially within the curtilage of the Ruins of Powder Works site, subject to the approval requirements of the Heritage Act 1977. The majority of the heritage curtilage of the Ruins of Powder Works is proposed to be conserved in a conservation area.

A Heritage Interpretation Strategy has identified places and locations likely to be suitable for heritage interpretation as the precinct develops.

It also identifies locations that provide opportunities for connections with the precinct's rich cultural past as well as meeting the requirements of Green Star Communities.

Water cycle-management

A Water Cycle Management Strategy was prepared by Cardno.

Flooding assessment

Modelling showed that the proposed development generally increased the intensity of stormwater flows within and from the site. This is due to the changes in land use, with the transition from green space, rural land and bushland that slowly absorb stormwater to a higher proportion of hard surfaces.

Flood detention basins have been proposed for incorporation into the precinct to attenuate the peak stormwater flows to existing levels in the precinct. Both on-line (i.e. on the existing watercourse) and off-line (located away from watercourses) basins are proposed to provide peak stormwater flow control and ensure there are no adverse impacts on stormwater flows and flood behaviour within and downstream of the developed precinct.

Various possible locations were identified and evaluated for the basins. On-line basins are more efficient in terms of land-take and consolidate maintenance within the natural drainage corridor. The off-line basins were located based on site topography, location of conservation significant vegetation and modelled design flood extents. Flood mapping for existing conditions has been undertaken, however, Council is presently undertaking a precinct-specific stormwater and water cycle management strategy, the results of which will inform the nature and location of infrastructure and the proposed flood planning levels for new development. Accordingly, the flood planning assessment will be completed following the release of that strategy.

Water cycle management

Modelling was used for the analysis of the stormwater management requirements for the precinct. A stormwater 'treatment train' approach incorporating different types of Water Sensitive Urban Design systems was evaluated. Based on the outcomes of this analysis, the following treatment train approach has been proposed to achieve the water quality and water quantity targets:

- rainwater harvesting and re-use of residential, mixed use, community centre roof runoff by utilising rainwater tanks
- gross Pollutant Traps (GPT) to pre-treat runoff prior to discharge into basins
- up to four detention basins
- up to 13 bioretention basins which will receive flows from the GPTs
- stormwater harvesting for re-use in irrigation of sports field via a 6 ML tank.

Rainwater harvesting is proposed for:

- lot scale reuse for residential/mixed use development for toilet flushing, laundry, hot water and external use
- re-use for commercial development (and community centre) for toilet flushing and external uses.

The adopted tank sizes for rainwater harvesting are shown in the table below.

To promote consistency across the State, councils are not able to set their own higher or lower BASIX targets. This provision will continue to apply and is proposed to be transferred to the Design and Place SEPP. However, mechanisms to allow councils some flexibility in this area will be explored during development of the Design and Place SEPP. This includes water-saving targets for rainwater harvesting

Proposed Land Use	Tank Size
Houses	10kL/dwelling
Low Rise Apartments/Townhouses	6kL/dwelling
Community Centre and Local Centre	150kL/ha roof area

Land capability

To determine the potential for land contamination, salinity, slope and other constraints in the Precinct, a Preliminary Site Assessment was conducted by SMEC.

The slope risk analysis classed the precinct as moderate, which does not meet the tolerable risk to future development. Recommendations to reduce this risk to tolerable levels include scaling the slope, installing rock bolts and considering development location. It is recommended that a slope stability assessment be undertaken for any future development.

The assessment identifies salinity characteristics as good, indicating reasonable water quality and non-saline groundwater conditions. The limited soil samples collected and analysed for salinity also indicate a 'non-saline' classification for soils.

No soil sample exceeded the adopted site assessment criteria; however, due to the limited nature of investigations, potential remains for contamination to be present. Potential sources of contamination include:

- the use of uncontrolled fill material and quarry activities
- commercial and industrial facilities
- small farm holdings, market gardens and nurseries
- hazardous materials within existing buildings and site structures
- septic effluent systems
- potential dumping of waste in unoccupied lands.

Acid sulfate soils are not considered to present a risk within the Precinct, given the mapped soils and elevation of the area.

Visual impact

Richard Lamb & Associates (RLA) assessed the visual character, visual resources, and constraints and opportunities. RLA worked with the principal urban and landscape design consultants, Cox Richardson, in formulating the principles that underpin the previous Structure Plan.

Five character areas were defined on the Visual Character Areas Key Map and provide a basis for recommendations on future residential development. The key attributes for each character area and its opportunities for residential development have been identified as follows, noting only Areas 2, 4 and 5 now apply due to the reduced area of the precinct to the south of Mona Vale Road.

Area 2: Least constrained by external visibility, existing landscape quality and character. The higher capacity for housing including low-rise apartments, townhouse, commercial and community uses is reflected in appropriate land uses in the Structure Plan.

Area 4: Visually prominent from the east in parts, because of steep topography, vegetation and impact of existing isolated residences, the area is an important interface with Ingleside Chase Reserve, the character of which will be protected by environmental conservation land use in the Structure Plan.

Area 5: Semi-suburban and commercial in character with low overall visibility from outside, the area is of lower constraint for residential and associated uses. The mix of land uses proposed in the Structure Plan is compatible with retaining the low external visibility of Area 5 and appropriate character.



Photography

Nareen Reserve, and area of Health. Image courtesy of Quentin Jones.

Appendix C – Infrastructure Schedule

Infrastructure Type	Requirement	Delivery Mechanism
Water	New trunk mains from the Elanora Heights Reservoir Booster for elevated locations New lead-in mains	Developers with State Government (Sydney Water) Possible Precinct Acceleration Plan (PAP)
Sewer	Gravity sewer extensions/reticulation Potential new Sewer Pump Station	Developers with State Government (Sydney Water) Possible Precinct Acceleration Plan (PAP)
Electricity	Spare capacity exists within the Mona Vale Zone Substation 2 x lead-in 11kV feeders from the zone substation will be required Precinct-based reticulation	Private Provider (Ausgrid)
Gas	New District Regulator Station required along with a new 160 mm 300kPa feeder into the precinct	Private provider (Jemena)
Telecommunications	NBN is available via lead-in works and connections	Private provider various)/ developer
Community Centre (excluding childcare space)	New 400 m ² community centre	Development Contribution Plan
Open Space	2-3 playgrounds, including a larger district sized playground of around 500 m ² Environmental Conservation land Environmental conservation land and creek corridors with a range of opportunities for passive recreation i.e. linear parks connecting to surrounding open space and bushland, environmental interpretation activities	Development Contribution Plan or VPA
Active open space	Playing fields of up to 3 ha	Development Contribution Plan or VPA
Child Care	Up to 100 spaces	Private provider/developer

Infrastructure Type	Requirement	Delivery Mechanism
Water Cycle Management/Drainage	Gross Pollutant Traps (GPT) Up to 4 Detention basins with biofiltration Up to 13 Bioretention basins (raingardens) 6 ML stormwater harvesting storage tank for playing field irrigation	Development Contribution Plan or VPA
Transport/Roads/Roadworks	A range of bus services improvements within the precinct, along Mona Vale Road and at Mona Vale	State Government (TfNSW/Sydney Buses)
	Active transport improvements within the precinct	Development Contribution Plan or VPA
	Powderworks Rd Wattle Rd - Roundabout provided to facilitate access across Powderworks Road	Development Contribution Plan or VPA
	Powderworks Rd Wilson Ave - Roundabout provided to facilitate safer access to Wilga-Wilson	Development Contribution Plan or VPA
	Powderworks Rd Ingleside Rd - Roundabout provided to facilitate safer access to Ingleside Road	Development Contribution Plan or VPA
	Powderworks Rd Wilga St - Roundabout provided to facilitate safer access to Wilga-Wilson	Development Contribution Plan or VPA
	Other local road upgrades and future local roads, including new bicycle network connections.	Development Contribution Plan or VPA



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