

Ku-ring-gai Council Submission

Revised Draft North District Plan

November 2017

1. General Comments

Ku-ring-gai Council commends the Greater Sydney Commission (GSC) on the production of the Revised Draft North District Plan (October 2017). The revised structure, layout and content of the document make it a much more accessible document and add a good deal of clarity. There is now a clear link between the Objectives of the Greater Sydney Region Plan, the Planning Priorities of the District Plan and associated Actions and the role Councils will play in the implementation of these plans at a local level. The representation of this relationship Figure 5 (p17) is clearly laid out throughout the document.

Council submission (March 2017) on the previous Draft North District Plan (November 2016) identified the need for the District Plan to move from rhetoric and abstract principles to practical processes and structures and the establishment of concrete means of achieving the desired ends. In the absence of these, there is a real concern that the eventual outcomes will be yield and developer driven. Any public consultation may be seen as mere window-dressing when, for instance, a Local Environment Plan is amended to align with the new district plan that is perceived to have been made without genuine local input.

While there is still this underlying concern, the revised content, Planning Priorities and Actions Draft Distinct Plan goes some way to alleviating these concerns. The GSC has demonstrated a desire to listen and respond to concerns raised in submissions and being given the opportunity to again comment on the revised plans is greatly welcomed.

2. Comments on Chapter 2 - Infrastructure and Collaboration

Planning Priority N2 – Working through collaboration

Planning Priority N2 identifies Collaboration Areas and Priority Precincts, particularly health and education precincts such as St Leonards, Macquarie Park and Frenchs Forest.

Ku-ring-gai's is not mentioned as having an important role in the provision of health and education services. Ku-ring-gai is home to a large number of health and education establishments both public and private (which are significant employers) with many being located close to the Pacific Highway and/or railway line. For example, Ku-ring-gai is home to the SAN (Seventh Day Adventist Hospital) which is the largest private hospital in NSW and a significant number of large private schools. The private health and education sectors currently provide an important role on servicing the North District and are likely to have a

greater role in the future as the population grows. The revised draft district plan should recognise the existence of private health and education infrastructure in the district and facilitate its expanding role servicing future growth.

The approaches to supporting land use and infrastructure planning and delivery in Table 1 under Planning Priority N2 suggest that for Priority Growth Areas and Urban Renewal Corridors, the focus should be on transformative corridor delivery including city shaping transport investment. This is supported, but the type of city shaping transport investment linking Macquarie Park and Ingleside (and indeed Mona Vale to Macquarie Park) is not articulated elsewhere in the Plan, including in Planning Priority N12 and the Intermediate Transit 2036 map. This should be addressed.

3. Comments on Chapter 3 – Liveability

N3 – Providing services and social infrastructure to meet people’s changing needs

Within Planning Priority N3, there is commentary that safe walking and cycling links to schools maximise opportunities for young people to lead more active lifestyles. The Ku-ring-gai Integrated Transport Strategy aspires to a cycling mode share target of 5% across the LGA, and the provision of safe walking and cycling links to school is supported, although NSW Government should show more leadership in actually planning and implementing new walking and cycling infrastructure around schools, especially new schools. As a driver, mode share targets for walking and particularly cycling, should be set for schools by the Greater Sydney Commission, to drive the provision and use of walking and cycling infrastructure.

To ensure the consideration of safety in the design of buildings and urban spaces for all sectors of the population, it is requested that the District plan makes reference to CPTED (Crime Prevention Through Environmental Design) and the requirement for its inclusion in all development and public places.

Older people

The revised draft District Plan recognises demographic patterns of continued and above average increase of elderly people in the North area; however it does not refer to the growing number of people with a disability who might not be elderly.

A more direct reference to the requirement for homes to enable ageing in place or useability in the event of disability would ensure that new homes can actually provide ongoing meaningful for this population. Direct reference needs to be made to the inclusion of standards stipulated in the Liveable Housing Design Guidelines (for dwellings) and the Australian Standards (for paths of travel from parking/road to dwelling) for medium and high density housing. This will ensure this growing population sector will be able to access suitable housing choice.

The reference to ‘more compact housing types’ is not supported unless specific high quality design standards for ‘compact housing types’ which include accessibility and liveability requirements are included. The references should only be to Medium and High Density

Housing. This will enable each Council to set its own standards for type of provision and requirements for paths of access to and through new homes aimed at the elderly/disabled population.

N5 - Providing housing supply, choice and affordability, with access to jobs and services

Housing Strategies and Targets

Council's previous submission supports the release of housing targets as it provides certainty for Council in planning and managing for future growth. While the revised draft District Plan restates the 0-5 year housing target, there has been no further information on the agreed methodology for the longer range targets

Council supports the preparation of a local Housing Strategy to accommodate the District Plan's 0-5 and 6-10 year housing targets and acknowledges that the revised plan contains further guidance on the function of these housing strategies. However, Council again request that the GSC provide a detailed template for the content and layout of the Housing Strategy so that all Councils produce strategies with a like for like basis. This is particularly important to provided transparency and probity if Councils are to negotiate 10 year housing strategies with the GSC on a one on one basis.

Council is still looking to GSC to enable access to census data and working templates and models to ensure all Councils deliver the same approach and quality of Housing Strategy.

Housing Diversity and Choice

The revised draft District Plan has stipulated the need to provide housing diversity and choice, and to provide more housing in the right locations (within road/rail corridors). These principles are supported in general, however some mention should be given to the integration of new housing with other valuable aspects at these locations which might conflict with this direction, for example biodiversity, and established mature trees. Giving consideration to heritage when placing more housing in the right locations is supported.

The plan envisages increased provisions of medium density housing which includes villas and town houses within existing areas to provide greater housing variety while maintaining the local appeal and amenity of an area. It identifies that Councils are in the best position to investigate and confirm what locations in their local government areas are suited to additional medium density opportunities.

While the revised draft Plan promotes *the NSW Department of Planning and Environment's Draft Medium Density Design Guide* to show how this infill can promote good design outcomes, Council's previous submission on that policy raised significant concerns it would have on the visual character and landscaped qualities of Ku-ring-gai. As a result it is felt that Council's should not only have control of where medium density housing is located, but also control over the design quality and outcomes of these housing forms

Housing Affordability

The District Plan makes reference to the SEPP Affordable Rental Housing (pg 40) and its low take up. In Ku-ring-gai any affordable housing provision has been through this SEPP as no other mechanism is currently in place. The delivery of an affordable housing strategy within the overall Housing Strategy will enable an alternate route for provision. The greatest concern regarding the SEPP is the 10 year window. This 10 year period must be removed from the SEPP, otherwise any provision is at best temporary.

The District Plan (pg 40) continues to only make references to moderate income/key workers/skilled workers stating their housing is an opportunity to create diverse housing in health and education precincts. It is important that reference to this group be extended to areas which are not classed as 'precincts' but which rely on substantial numbers of commuting key workers to major employment facilities within an area (including education, hospitals and care facilities).

Importantly it is recommended that the "moderate income households" be reinstated in the percentage target for affordable rental housing provision to ensure Councils can mandate housing provision for this group. Without this provision it is highly unlikely that the moderate income households will be catered for. The purchase models implied in draft Greater Sydney Region Plan (p 59) are unlikely to deliver meaningful numbers of moderate income housing due to the drivers of profit preferring high returns on development, particularly in areas of high demand. In addition, these models do not present any mechanism to assist this group in the affordable rental market which is most likely where the majority will engage. At the recent Affordable Housing Development Summit held in Melbourne,

No consideration has been included for services to people within the "very low income" category. The impetus for more local housing provision for the "very low income" group through Local council affordable Housing Strategies will alleviate the numbers on the State Government's 'social housing' register; however, no mention is made of the support and services and funding that this group has traditionally required as part of their housing provision. This aspect must be addressed up front so that Local councils are not burdened by inability to additional or specialized services to this population.

Council is also looking to a template and financial numerics to apply to assist in the preparation of a local Affordable Housing Strategy.

Planning Priority N6 – Creating and renewing great places and local centres, and respecting the District's heritage

Streets as places

The concept of the movement and place framework is supported, particularly in fine-grained local centre streets where the notion of local streets and places for people is important. However, there are areas where arterial roads pass through retail strips (such as Pacific Highway through the Ku-ring-gai LGA), and whilst making the streets people friendly in the face of traffic is challenging, the activation of the streets and footpaths is important so as to avoid internalised shopping mall development which bears no relation to the street. An

important aspect in this is the GSC ability to facilitate negotiations between RMS and AUSGRID and other Agencies to discuss with Councils how to integrate their street treatments into the Local Centres and avoid poor outcomes that do not support the place for people concept.

Local Centres

The framework for strategic planning for local centres to cater for growing populations is an area in which the revised draft plan has been strengthened from the previous version and is strongly supported. This comprehensive, integrated planning framework for local centres aligns with Ku-ring-gai Council's planning process for its award winning Activate Ku-ring-gai program and the community and civic hub projects currently being developed for Lindfield Turramurra and Gordon.

In the discussion of Local Centres (p44), the revised draft North District Plan identifies a range of specific matters for consideration in place-based planning for centres, including the delivery of transit-oriented development and co-location of facilities and social infrastructure. The delivery of transit-oriented development is supported but need to be strengthened and reinforced, and this could be achieved by including a notation for Local Centres as transit-oriented development on the North District Structure Plan – urban area (p8).

Another specific matter for consideration (Action 20) is the provision of parking that is adaptable to future uses and takes account of access to public transport, walking and cycling connections. This is supported, but should be strengthened through the development of a metropolitan parking policy where the quantity of parking provided takes into account access to services, transport, employment, with a view to containing/restraining parking provision and encouraging forms of transport other than private motor vehicle so that transit-oriented development can succeed in increasing mode share to public transport and active travel modes.

Heritage and Character

The recognition in the revised draft District plan of "a wide variety of local heritage items and heritage streetscapes" forming part of the character of the centres throughout the district gives validity to a broader definition of heritage beyond the State significant and the 'acceptably' old and is welcomed.

The statement that "great places build" on a local area's "characteristics to create a sense of place that reflects shared community values and culture" is commended. It acknowledges the contribution of heritage places to the area's local identity.

Action 18 is to conserve and enhance environmental heritage by

- a. *engaging with the community early in the planning process to understand Aboriginal, European and natural heritage values*
- b. *conserving and interpreting Aboriginal, European and natural heritage to foster distinctive local places*

The previous district plan reinforced this action with the outcome of:

Identification and protection of heritage elements

Objective 13 of the Draft Greater Sydney Region Plan makes reference to “heritage identification, management and interpretation” as a requirement for allowing heritage places and stories to be experienced by current and future generations. While mention of identification in the Draft Greater Sydney Region Plan is commended its reiteration and reinforcement in the Draft District Plan through the inclusion of a specific Planning Priority relating to heritage is also recommended.

The process for cultural heritage conservation in Australia is identification, assessment and management. The ongoing protection of current and as yet unacknowledged heritage (not statutorily listed) heritage would be further strengthened by including the identification of heritage in Action 18.

The use of the term European heritage in Action 18 is not supported. European heritage is no longer commonly used to label non-Indigenous cultural heritage. The phrase is not used in the Burra Charter, in the description of the National Heritage List, the description of the state heritage register, the Heritage Act 1977, the Environmental Planning and Assessment Act, the standard Local Environmental Plan or the heritage information webpage of the Office of Environment and Heritage. The terminology excludes places of cultural value and significance that are derived from cultures other than Europeans. It ignores the general trend in Australia away from a Eurocentric culture to a diverse multicultural community.

This seemingly small issue of semantics becomes a big one when consistent with Action 18 we try to engage our community to understand their shared community values, however, the phrasing in the Draft District Plan has already disengaged anyone from a non-European background.

The draft district plan states “Thirty nine per cent of residents in the District are from 201 countries including China, England, India, New Zealand and South Korea”. This is recognition of the diverse community and the diversity of cultural values. The essay “Whose Heritage Is it?” by Joann Schmider and Peter James discusses the effect of labels in creating silos and undermining the conservation of Australian heritage. The issue is community.

4. Comments on Chapter 4 – Productivity

Planning Priority N8 Eastern Economic Corridor is better connected and more competitive

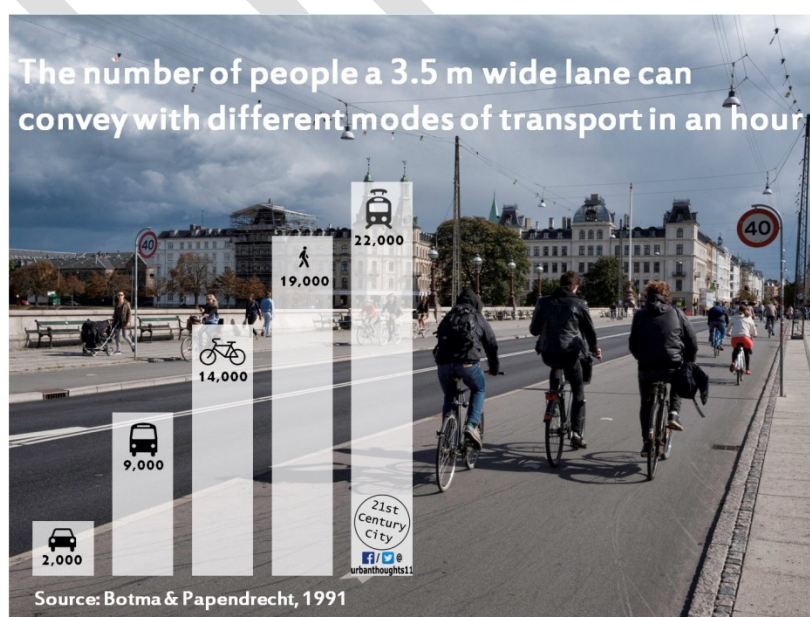
The Northern Beaches to Chatswood Bus Improvements is indicated as “committed” which is supported but the Intermediate Transit map on p77 indicates this would be an on-street rapid transit corridor (light rail/Rapid bus). The references to Northern Beaches to Chatswood Bus Improvements should actually state Rapid Bus, rather than Bus Improvements

Planning Priority N9 Growing and investing in health and education precincts

As mentioned previously, with the exception of an indirect connection in the 2056 Bicycle network, there is no mention of any links in the Mass Transit Network or Intermediate Transit Network along this east-west corridor between Macquarie Park and Mona Vale in the Future Transport 2056 Greater Sydney Draft Services and Infrastructure Plan. This is despite Macquarie Park and Ingleside being designated as Priority Precincts or Collaboration Areas. Ku-ring-gai Council's previous submission provided some context regarding the Journey to Work characteristics of the Macquarie Park strategic Centre based on 2011 data, but we have not been able to obtain processed Journey to Work characteristics based on the 2016 data due to its late release. Additional analysis of the 2016 data should be undertaken to inform travel patterns into Macquarie Park to identify any mode shifts or changes to origin/destination of journeys to work.

Increased bus services along the Mona Vale to Macquarie Park route are supported by Ku-ring-gai Council through its Integrated Transport Strategy but congestion on Ryde Road and Lane Cove Road warrants additional measures to ensure frequent bus services to/from Macquarie Park are reliable and therefore an attractive alternative to private vehicles. Also, the importance of Mona Vale's Bus Interchange role as an east-west connection is reiterated in Action 42c, which would serve as the eastern end of the Macquarie Park-Mona Vale corridor.

The proposal in the Intermediate Transit Network for an on-street rapid transit corridor (light rail/rapid bus) between Rhodes and Macquarie Park lends itself to be extended north-easterly towards West Pymble/West Gordon, Gordon, St Ives, St Ives Showground, Belrose, Terrey Hills, Ingleside and Mona Vale. The cited localities could even form the basis for light rail/rapid bus "stations". Given the superior people-carrying capacity of rapid buses (9,000 pax/hr/lane) over private vehicles (2,000 pax/hr/lane - under free flowing conditions, and less under congested conditions), there is a case to implement a rapid bus route between Mona Vale and Macquarie Park, with dedicated bus lanes at least between St Ives and Macquarie Park (on Ryde Road and Mona Vale Road), given the roads space available in that segment.



Planning Priority N10 Growing investment, business opportunities and jobs in strategic centres

Focusing public transport investment around the Strategic Centres that seek to deliver 30-minute city objective is supported, but will require hard decisions and leadership from NSW Government particularly where reallocating road space on arterial roads is required to achieve the objective.

Planning Priority N11 Protecting and Managing Industrial and Urban Services Land

The previous Draft North District Plan (November 2016) contained the following priority 3.2 *Managing employment lands and urban service land*. Council submission (March 2017) supported this priority as Ku-ring-gai has little remaining land of this type and it is under growing pressure to be rezoned to allow housing. The Revised Draft North District Plan (October 2017) has changed the priority to *N11. Protecting and managing industrial and urban services land*.

A review of background study *Sydney's Urban Services Lands – Establishing a Baseline Provision* (SGS, July 2017) defines urban services as a collection of industries that enable the city to develop and its businesses and residents to operate; including rental and hiring services (except real estate), building cleaning, pest control and other support services, other store based retailing (e.g. large hardware stores), repair and maintenance, printing, electricity supply, gas supply, water, sewerage and drainage services, waste collection, treatment and disposal services, basic material wholesaling, road transport, postal and courier pick-up and delivery services, transport support services, warehousing and storage services, building construction and heavy and civil engineering construction. The study also notes that future employment growth across urban services will require additional floorspace, land or both. Unlike office based jobs, urban services are often less able to increase their floor space efficiency or locate in multi-storey buildings.

Pymble Business Park is zoned B7 Business Park and provides a range of office and light industrial uses. It is questioned whether change from '*employment and urban services land*' to '*industrial and urban services land*' sufficiently captures Pymble Business Park, particularly the office space. It is recommended that this planning priority be changed back to '*employment and urban services land*'.

Additionally, *Figure 20: North District Industrial and Urban Service Land and Freight Assets* (page 71) shows a map of all the identified Industrial and Urban Services Land in the North District does not identify Pymble Business Park. It is recommended that the map be amended to identify Pymble Business Park to ensure adequate protection of this land.

Planning Priority N12 Delivering integrated land use and transport planning and a 30-minute city

As mentioned in the comments relating to Planning Priority N9, the Intermediate Transit 2036 map should show a light rail/rapid bus corridor between Mona Vale and Macquarie Park

Comments regarding the Principal Bicycle Network are provided under Planning Priority N19.

Planning Priority N13 Supporting growth of targeted industry sectors - Tourism

Ku-ring-gai Council supports Planning Priority N13 and Associated Action 51-56. Ku-ring-gai Council has adopted Ku-ring-gai Destination Management Plan 2017 to 2020 (20 August 2017)

This plan has the overall objectives of

- Continue to develop and re-position the St Ives Precinct as a contemporary and distinctive tourism destination in Sydney
- Establish Ku-ring-gai as a key destination for year-round festivals and events in Sydney
- Further develop Ku-ring-gai's architectural heritage, cultural and recreational experiences and attract quality hospitality and retail operators to the area
- Support the sustainable development of new accommodation infrastructure to stimulate overnight visitor stays in Ku-ring-gai
- Promote Ku-ring-gai and its experiences as an attractive and appealing tourism destination in Sydney.

5. Comments on Chapter 5 – Sustainability

Council strongly supports the intent of Chapter 5 – Sustainability and the planning priorities N15 – N22 throughout the chapter. The actions identified throughout the chapter, however, lack detail and read more as objectives or desired outcomes statements, rather than prescriptive management actions to be facilitated through the delivery of the Plan.

Without the identification of specified delivery mechanisms and implementation strategies for the planning priorities and actions, clear guidance is not provided for users of the Plan. There is an expectation that implementation of the North District Plan will be achieved through Councils 'considering' the plan in the assessment of development assessments, planning proposals and its own internal strategies leaving it to the will or desire of Councils to interpret the (very broad) priorities and actions as they see fit.

Recognition of the complex relationships between different sections of the Plan, the inherent conflicts in implementing the various priorities/actions of the plan and the need for locally specific, contextually based actions to deliver the plan has not been fully detailed. The role of the Plan in the broader policy context and its governance framework/ relationship to other legislation, planning instruments and policies needs further clarification. How the Plan will be enforced and enacted in the broader policy context is not clear and is necessary so there is confidence that the priorities and actions in the plan will not be undermined and unrealized.

Ku-ring-gai Council has developed a suite of documents that seek to promote responsible development that uphold sustainability principles. Development is delivered in a considered manner to ensure short and long term impact management. This approach is aligned with multiple State, Federal and Global papers and policies on the necessity for managing global

warming and the importance of reducing carbon emissions.

However, this work is now being undermined by the Department of Planning and Environment's SEPPs and many amendments which reduce Council's ability to set standards and to ensure new development integrates into the area without creating irreparable damage to resources. The recent Medium density Housing Code is one such example where Council will no longer have the ability to determine or integrate such high impact development into the local character, and which will see swathes of land cleared for high impact lateral development.

Ku-ring-gai Council encourages the consideration of sustainable features within dwellings. However delivery of standards above the Department's low threshold of BASIX is inconsistent as anything additional cannot be mandated. Councils that show leadership and initiative need to be given some ability to raise the bar on sustainable inclusions in residential developments. This could be achieved through the Department of Planning and Environment enabling some general clauses to enable this through the LEP.

Planning Priority N15 Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways

Council supports 'the integration of the objectives for waterways that are set out in legislation, policies and plans, by prioritising the management of waterways as green infrastructure' (p90), particularly managing the cumulative impacts of development and land management decisions on a catchment scale.

In implementing Planning Priority N15 and its associated actions, there is a real opportunity for the North District Plan to adopt the principles of a Water Sensitive City and to work alongside/draw on the expertise of the Cooperative Research Centre (CRC) for Water Sensitive Cities to enable Greater Sydney to transition to a Water Sensitive City. This would represent best practice water management and support the commentary on p105: "Recycling local water and harvesting storm-water creates opportunities for greening public open spaces including parks, ovals and school playgrounds. Recycling water diversifies the sources of water to meet demands for drinking, irrigating open spaces, keeping waterways clean and contributing to Greater Sydney's water quality objectives' and the Adapting to Climate Change initiatives described on page 111.

First introduced into the Australian urban water sector through the Council of Australian Government's National Water Initiative agreement, the concept of a Water Sensitive City represents a new water management paradigm, providing a tangible vision from which new design principles, management frameworks and technological innovations can be developed as a direction for a sustainable water future.

"Water sensitive cities are resilient, liveable, productive and sustainable. They interact with the urban hydrological cycle in ways that: provide the water security essential for economic prosperity through efficient use of the diversity of water resources available; enhance and protect the health of watercourses and wetlands; mitigate flood risk and damage; and create public spaces that harvest, clean and

recycle water. Its strategies and systems for water management contribute to biodiversity, carbon sequestration and reduction of urban heat island effects” (CRC for Water Sensitive Cities, 2016).

A WSC combines physical infrastructure (water sensitive urban design and integrated water cycle management) with social systems (governance and engagement), to create a city in which the connections that people have with their water infrastructure and services enhances their value and quality of life.

A Water Sensitive City is structured around three principles (or pillars) (Wong et al. 2013), that collectively enhance urban liveability, sustainability, productivity and resilience:

Pillar 1: Cities as Water Supply Catchments: in which all the available water resources are considered valuable supply sources, including wastewater, rainwater, stormwater and ground water. Infrastructure systems integrate both centralised and decentralised technologies to utilise these resources at different scales in fit-for-purpose applications.

Pillar 2: Cities Providing Ecosystem Services: in which water infrastructure and the urban landscape are designed both functionally and aesthetically. These integrated systems provide multiple benefits, including stormwater treatment, flood protection, heat mitigation, ecological health and landscape amenity.

Pillar 3: Cities Comprising Water Sensitive Communities: in which people appreciate the many values of water, feel connected to their local water environments and engage in water-conscious behaviours. Organisations and professionals that influence water management exhibit policies and practices which lead to water sensitive outcomes.

References

CRC for Water Sensitive Cities (2016) What is a Water Sensitive City?
<http://watersensitivecities.org.au/what-is-a-water-sensitive-city/> (Accessed 18 May 2016)

Wong T.H.F., Allen R., Brown R.R., Deletić A., Gangadharan L., Gernjak W., Jakob C., Johnstone P., Reeder M., Tapper N., Vietz, G. and Walsh C.J. (2013) blueprint2013 – Stormwater Management in a Water Sensitive City. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities, ISBN 978---1---921912---02---3, July 2013

Planning Priority N16 Protecting and enhancing bushland and biodiversity

Council supports the inclusion of a planning priority based upon Protecting and enhancing bushland and biodiversity (Planning Priority N16). There is concern however, that even within this priority the plan appears to down play the critical ecological role provided by urban bushland close to densely populated areas. This is expressed within page 93 (under Planning Priority N16), which states:

“These areas of urban bushland, close to some of the District’s most densely populated areas, support opportunities for nature-based recreation and enhance liveability. Areas of bushland at the edges of urban neighbourhoods will need to be

managed and enhanced to reduce impacts from urban areas, such as pollution and nutrients from stormwater, weeds and litter.”

This idea is further supported in the mapping of “Protected Natural Area” within Figure 1 and 23. Whilst no definition is provided, areas mapped as “Protected Natural Area” are limited to National parks “at the edges of urban neighbourhoods”.

Areas excluded from “Protected Natural Area” mapping include lands managed by Council’s as Natural Areas under the Local Government Act 1993 (within Ku-ring-gai this includes 1,152 hectares) as well as national parks “close to some of the District’s most densely populated areas”, including Garigal and Lane Cove National Park and Dalrymple-Hay Nature Reserve (covering a 2,831ha).

These areas provide irreplaceable fauna and flora habitat. For example:

- Dalrymple-Hay Nature Reserve provides protection for the largest remaining remnant of Blue Gum High Forest (listed a state a federally critically endangered ecological community),
- The Rapid Fauna Habitat Assessment of the Sydney Metropolitan Catchment Management Authority (CMA) Area1, identified bushland within Garigal National Park as having the highest fauna habitat ranking within the Sydney Metropolitan CMA, and bushland within the Lane Cove Valley as having the second highest.

The plan needs to recognise the critical biodiversity role these areas play, in addition to providing opportunities for nature-based recreation and enhance liveability. There is concern that by defining these significant reserves / corridor links solely as “Major Urban Parkland and Reserve”, as depicted within Figure 1, their true biodiversity value and importance is reduced, increasing the interpretation that these areas should be viewed more within the context as how these areas serve recreation.

There is considerable concern and uncertainty regarding how new/proposed changes to planning legislation (including the Biodiversity Conservation Act 2016, the SEPP (Vegetation in Non-Rural Areas) 2017 and proposed SEPP (Environment) will influence the delivery of the North District Plan. Thresholds for the NSW Biodiversity Offsetting scheme include, significant impact, the clearance of ≥ 0.25 ha of vegetation (for minimum lots sizes of less than a ha, and greater for larger lots), or areas mapped on the Biodiversity Values Map (these maps are limited in their extent focusing on the whole upon larger areas of threatened vegetation communities and excluding non-threatened vegetation within core bushland areas). Although for tree removals not associated with approval under part 3, 4 or 5 of the EP&A act, the SEPP (Vegetation in Non-Rural Areas) 2017 will apply smaller areas is unlikely to require offsetting, meaning that requirements to offset (or undertake compensatory planting) are likely to fall to Council’s statutory plans and documents. This increases the difficulty for Council to increase urban tree canopy cover and protect and enhance bushland and biodiversity within the District (referred to in the North District Plan in Planning Priority N16 and N19).

¹ source <http://www.environment.nsw.gov.au/surveys/SMCMAFaunaAssessSydMetro.htm>

Planning Priority N19 Increasing urban tree canopy cover and delivering Green Grid connections

Whilst Council strongly supports Planning Priority N19, it is believed that greater synergies between Planning Priority N16 and N19 could be made.

Page 99 of the plan states:

“Where trees are lost as a result of development, some councils have developed programs to plant replacement trees in the public realm.

The NSW Department of Planning and Environment’s Apartment Design Guide and the new Greenfield Housing Code guide the requirements for landscape areas that can support the urban tree canopy.”

Whilst council acknowledges and supports the role that that Council’ play in the provision of developed programs to plant replacement trees in the public realm. It is important to ensure that the provision for and protection of urban tree canopy on private lands is also promoted. Elsewhere in this submission, Council has raised concern over the impact of the proposed Medium Density Housing Code will have on the urban Tree canopy within private lands.

The plan has real opportunity to provide a strong strategic framework for improvements to biodiversity connectivity, recreational opportunities, reducing short car trip congestion (and air quality). Blue and green grid outcomes should feature more strongly in connection with active transport, liveability and environmental outcomes.

In seeking to increase recreational opportunities, it is imperative that biodiversity values within bushland are protected (including minimising fragmentation and edge effects from increased tracks and other hard infrastructure). Increased provision of active recreation requiring the creation of significant new hard stand cycle ways is considered inconsistent with the conservation values of these areas. However use or upgrade of existing fire trails, cycleways or roads is supported (provided impacts are minimised). The plan needs to further distinguish between the provisions of connectivity for biodiversity as opposed to connectivity for recreational use. Whilst opportunities to satisfy both objectives do arise; there on ground requirements differ (biodiversity corridors for mobile fauna as opposed to forest interior species).

Council supports the revised green grid connections (project opportunities) as outlined within the Sydney Green Grid – North District 2017.

But again highlight the opportunities that exist for future road improvements to reduce road kills and improve pedestrian/ cycleway and fauna connectivity, through the creation of land bridges or culverts for underpasses (as well as other structures such as fauna rope crossings). Such actions are supported by a report commissioned by the Roads and Traffic Authority of New South Wales (RTA 2011) addressing road kill along Mona Vale Road, McCarrs Creek Road and the Wakehurst Parkway.

The importance of connecting these areas is also reflected within a study undertaken by the NSW Department of Environment and Climate Change (2008c) which mapped Regional Fauna Habitat.

This report advocates the importance of increased connectivity:

- Of bushland within the Lane Cove Valley and between Lane Cove Valley and Berowra Valley in the Hornsby LGA. Addressed in part improved fauna access across Lady Game Drive and the Comenarra Parkway;
- Between Middle Harbour and Cowan Creek Regional Fauna Habitat in St Ives. Addressed in part improved fauna access across Mona Vale Road.

Improvement to the green and blue grid can only be achieved, where both Councils and State organisations work together. For example:

- the NSW Roads and Maritime Authority need to consider improved fauna connectivity within their road upgrades / maintenance programs and increased vegetation along road corridors and cycleways.
- the State government need to rethink their planning of rail corridors to allow active transport and recreational use (such as cycle ways) and well as the provision of connected vegetative links (focused on the protection of existing remnants).

While Ku-ring-gai Council supports the development and implementation of the Principal Bicycle Network to provide safe/separated cycling connections between strategic centres, the work done to date between Councils and Transport for NSW to identify routes has been extensive but the absence of a specific layer in the North District Green Grid opportunities map still leaves some uncertainty as to the final/preferred corridors, with implications for planning around these corridors. While it is mentioned that the Principal Bicycle Network will be integrated with the Green Grid, it is expected that not all draft cycling corridors identified by Councils and Transport for NSW may not be able to be integrated into the Green Grid, or if integrated into the Green Grid may result in an unnecessarily circuitous route. The wording in this section should be amended to state that Principal Bicycle Network will be integrated with the Green Grid where possible.

In terms of the priorities in Table 5 (North District Green Grid Priority Projects), the high priority for investigations into an all-weather crossing of Lane Cove River at Brown's Waterhole/South Turramurra/Marsfield is supported as this is a strategic pedestrian and cycling link for a large area to the north/north-east of Pacific Highway to the Macquarie Park strategic centre.

References

Northern Beaches Roadkill – Advice on reduction options (2011). Prepared for the Roads and Traffic Authority of New South Wales. RTA/Pub. 11.323

NSW Department of Environment and Climate Change (DECC), 2008c, *Rapid Fauna Habitat Assessment of the Sydney Metropolitan Catchment Management Authority Area*, Department of Environment and Climate Change, Hurstville

Planning Priority N21 Reducing carbon emissions and managing energy, water and waste efficiently

Council strongly supports the aim of transitioning NSW and Greater Sydney to net zero emissions as an overarching goal of this Planning Priority and the Greater Sydney Commission seeking to better understand greenhouse gas emissions for each District

across Greater Sydney and continuing to explore opportunities for planning initiatives to support the NSW Government's goal of achieving a pathway towards net-zero emissions by 2050 (p105).

Both the North District Plan and NSW Climate Change Policy framework could be significantly strengthened, however, to reflect what the scientific evidence is telling us we need to do in response to climate change, by: (i) introducing a binding emissions budget for Greater Sydney that limits cumulative emissions consistent with the aim of limiting warming to less than 2 degrees celsius, to be reviewed periodically, based on updated climate science and modelling; and (ii) introducing a binding trajectory and set of interim emissions reduction targets for Greater Sydney (2025 and 2030) consistent with its emissions budget, to be reviewed periodically, based on updated climate science and modelling. Council recommends a trajectory and targets congruent with recent Climate Change Authority recommendations, namely:

- 2025 target of 30 per cent below 2000 levels;
- 2030 target of 40 to 60 per cent below 2000 levels;
- 100 per cent reduction by 2045 (relative to 2000 levels).

This would, however, move the North District Plan's net zero emissions target from 2050 to 2045. Justification for this is provided below:

As the magnitude of global temperature increases, is not determined by emissions in one year but by the cumulative concentration of emissions in the atmosphere, limiting climate risks implies a limit to cumulative greenhouse gas emissions. Consistent with the objective of limiting cumulative emissions, the IPCC in its Fifth Assessment Report on the Physical Science basis of Climate Change, released in September 2013, quantified a global emissions budget (the total amount of global emissions consistent with the aim of limiting warming to a specific temperature target, within a probability range) as the key to avoiding global warming beyond 2 degrees Celsius. The IPCC (2013) refers to a global emissions budget of 1,000 Gt of carbon to provide a likely (greater than 66 per cent) chance of limiting global warming to less than 2 degrees Celsius and notes that about half that budget has already been emitted.

In its February 2014 report Reducing Australia's Greenhouse Gas Emissions – Targets and Progress Review the Climate Change Authority (CCA) used the global emissions budget as a reference point for setting a national budget for Australia. The CCA (2014) used the global emissions budget estimates developed in a study by Meinshausen et al (2009), which have been widely cited by other scientific studies and used by national and international bodies as a reference for global emissions budgets. The IPCC's estimated emissions budget is consistent with the budgets described in the Meinshausen et al. (2009) study. These two studies, however, use some different assumptions and report in different units, resulting in different budget figures.

The CCA (2014) uses a global emissions budget of 1,700 Gt CO₂-e (Kyoto multi-gases) for the period 2000–2050 as a reference point to set a national recommended emissions budget for Australia for 2013-2050 of 10,100 Mt CO₂ e, to provide a likely (67%) probability of limiting global warming to less than 2 degrees Celsius (about 35 per cent of this budget has already been used between 2000 and 2012). This emissions budget is described by a

trajectory and a set of targets, equating to a 19 per cent reduction in GHG emissions by 2020, a 40 to 60 per cent reduction by 2030, and a 100 per cent reduction by 2045 (relative to 2000 levels). The CCA (2014) listed the following considerations as being the key factors used when formulating its target and trajectory recommendations:

- What the science tells us;
- International action to reduce emissions;
- Australia's progress to date in reducing emissions;
- Australia's equitable share of emissions;
- Economic implications for Australia;
- Domestic and international opportunities for emissions reduction.

In its Final Report on Australia's Future Emissions Reduction Targets, released in July 2015, the CCA confirmed its preliminary recommendations for a 2025 target of 30 per cent below 2000 levels and further reductions by 2030 of 40 to 60 per cent below 2000 levels and presents the CCAs reasons for confirming its preliminary recommendations (in April 2015), drawing on stakeholder consultation and new information, considering that:

- The recommended targets are consistent with climate science
- The targets are comparable to the targets of similar countries;
- The costs of achieving targets, and the distribution of those costs, are best considered in the design of policies;
- Costs must be considered against the economic, social and environmental benefits of avoiding dangerous climate change.

Setting a budget for emissions through to 2050 will highlight the trade-offs involved between actions taken now and those made necessary later. The Stern Review on the Economics of Climate Change (2006) detailed policy recommendations to effectively respond to the impacts of climate change and made clear that the benefits of strong, early action considerably outweigh the future costs of inaction. In short, weaker action now imposes a greater emissions reduction and adaptation task for future generations at a greater cost.

Council also believes it is imperative to move from an aspirational to a binding net zero emissions target.

Council welcomes the inclusion of building and precinct-scale renewables (p105) in the revised Plan as a potential pathway towards net-zero emissions in the District. Both the North District Plan and NSW Climate Change Policy Framework could be significantly strengthened, by the introduction of a renewable energy target to ensure that there is sufficient certainty for renewable energy development to continue in Greater Sydney, congruent with science based emission reduction targets.

References

Climate Change Authority (2014) *Reducing Australia's greenhouse gas emissions – Targets and Progress Review: Final Report*.

Climate Change Authority (2015) *Final Report on Australia's Future Emissions Reduction Targets*.

Intergovernmental Panel on Climate Change (2013) *Climate Change 2013 - The Physical Science Basis: Summary for Policy Makers, Working Group I contribution to the Fifth Assessment Report of the*

Intergovernmental Panel on Climate Change.

Meinshausen, M, Meinshausen, N, Hare, W, Raper, S, Frieler, K, Knutti, R, Frame, D & Allen, M (2009) *Greenhouse-gas emission targets for limiting global warming to 2 °C*, Nature, vol. 458, pp. 1,158–63.

Stern, N. (2006) *Stern Review on The Economics of Climate Change (pre-publication edition). Executive Summary.*

The thresholds set in Action 75 to trigger low emissions strategies is unrealistically high and unlikely to be triggered in Ku-ring-gai and other North District LGAs. In particular, the requirement to optimise car parking where an increase total floor area greater than 100,000 square metres is proposed in any contiguous area of 10 or more hectares would be inconsistent and in conflict with with Planning Priority N6 which amongst other things, seeks to provide parking that takes account of access to public transport, walking and cycling connections. In all cases, parking should be optimised or minimised to reduce emissions and resources.

Since the issues of sustainability can be measured across areas, it is important that the cumulative impact of multiple developments be considered in the District Plan. If many smaller developments (less than the suggested 100,000sqm in Action 75) deliver features in their design to address emissions, resource efficiency and climate change then it stands to reason that the cumulative development across areas will contribute significantly to effective address to the sustainability issues raised in the Plan and the creation of low carbon districts.

The findings that NSW is responsible for almost a quarter of Australia's emissions was stated in the "NSW Climate Change Policy Framework" which seeks to achieve net-zero emissions by 2050 to, in particular, address the fact that the biggest source of greenhouse gas emissions is the stationary energy sector (generating heat and electricity - 51% of total emissions), and the second biggest source of emissions is from transport (20% of total emissions). This illustrates the importance of requiring all large carbon footprint buildings (medium and high density developments) to deliver on the ground green buildings thereby contributing to the reduction of emissions within the 'stationary energy sector'.

It is requested that an additional Action be included in N21 and N22 to relate to Local Councils implementing initiatives on smaller scales. This type of smaller scale initiative needs to be reflected in the District Plan to ensure the delivery of green building particularly in high and medium density development areas.

The following documents should be included in the "useful Links" box:

NSW Climate Change Policy Framework; Federal Government Green Cities policy; NSW Government Better Placed Policy; OEH 2016 Impacts of Climate Change – East Coast Lows; OEH 2016 Impacts of Climate Change – Heat; Urban Green Cover Guidelines - Minimising Local Temperature Impacts in Cities and Towns;

Planning Priority N22 Adapting to the impacts of urban and natural hazards and climate change

Council supports new development compliance with the requirements set out in Planning for Bushfire Protection 2006, however current limitations with the Planning for Bushfire

Protection 2006 around the reliance on Asset Protection Zones and the design criteria used within the BAL rating system need to be addressed to improve bushfire resilience. Council supports the commentary on page 109, namely: "Clearing vegetation around developments on bushfire-prone land can help reduce risks from bushfire, but must be balanced with protecting bushland, and its ecological processes and systems. Planning on bushfire prone land should consider risks and include hazard protection measures within the developable area". Council recommends that additional commentary is provided in this section to emphasise enhancing the resilience of the built environment to all hazards (not such extreme heat), as a complementary, but effective hazard protection measure, especially considering that reducing the amount of vegetation that can act as fuel only deals with one aspect of being prepared for bush fires and has limited impact in extreme or catastrophic conditions.

For the past 5 years Council has delivered the highly successful Climate Wise Communities program, which aims to build community resilience to the impacts of severe weather events (bush fire, storm and floods, heat stress and drought) as a result of a changing climate. This program is delivered in conjunction with a number of partners (LEMC, RFS, SES, NSWFR, NSW Police, Red Cross, Department of Health and Department of Education). It has won several awards. A resource toolkit for program roll out by Councils has also been developed.

This program represents a project model that could be adopted and rolled out across Greater Sydney to respond to Planning Priority N22. Council can provide further information on the program, if required.

There is a body of evidence emerging suggesting that increasing the resilience of properties, housing stock and residents decision making abilities in a crisis are likely a better way to invest in risk management than simply reducing fuel and writing poorly informed survival plans. This is addressed through the Climate Wise Communities program.

Environmental Performance Targets and Benchmarks

Council supports Action 76 "Investigate potential regulatory mechanisms such as a Protection of the Environment Policy (PEP) that sets low-carbon, high efficiency targets to be met through increased energy efficiency, water recycling and waste avoidance, reduction or reuse".

Council supports the further development of a number of environmental performance targets and benchmarks to measure the impact of the North District Plan and implementation measures to help reach these targets. These targets should be evidence based, quantitative, measurable and time specific. The Greater Sydney Sustainability Profile sets a benchmark by which to develop performance indicators and measure the impact of the North District Plan.

Recommendations for binding, interim, science based greenhouse gas emission reduction targets, has been provided earlier in this submission, as well as the recommendation for the introduction of a renewable energy target for Greater Sydney.

6. Comments on Chapter 6 Implementation

Council commends the Greater Sydney Commission on their role facilitating collaboration between State and local government agencies; however there needs to be a greater emphasis and education around the potential conflicting approach and policies at State level.

Local Councils are caught in the middle of policies, papers and directions being issued by OEH and Government Architects on the requirements for more considered, well designed sustainable development which does not exacerbate the growing issues around energy consumption, heat emission and long term environmental impacts. Yet on the other hand, Councils are having to deal with some policies and SEPPs from the Department of Planning and Environment which are in direct conflict with that State level approach.

The GSC is requested to discuss with the Department the pressure placed on Local Councils seeking to deliver outcomes that consider generational impact whilst integrating new development to meet targets. Councils are seeing a legacy of quality local policies and planning outcomes being undone and undermined by the plethora of SEPPs and amendments to planning legislation which promote development regardless of local context or generational impact.

DRAFT

Comments on Aligned Plans

7. Our Greater Sydney 2056 A metropolis of 3 Cities

Objective 11 – Housing is more diverse and affordable

This objective is generally supported, however the omission of the Moderate income group population from consideration for affordable housing is strongly not supported.

In areas such as Ku-ring-gai where housing costs are consistently high, the Moderate income population are equally unable to access local housing as are the Low and the Very Low income populations.

Critical to this is the fact that given the high employment of Moderate income earners within the Ku-ring-gai LGA the inability to create housing for this group through the Affordable Housing rental program will continue to create a gap in local employees for local large facilities – and be contrary to the “Plan’s” policies of locating employees close to employment sources. For example nurses and medical related staff working in the local hospitals and nursing homes (including the SAN hospital which is the largest private hospital in Sydney), and teaching staff working at the numerous public and private (including boarding) schools in this locality.

The address under Objective 8 of housing provision for Moderate income through market-led affordable housing programs and ‘A fair Go for first home Buyers’ is unlikely to address the affordability problems for the Moderate income population, particularly where property sells for a premium and there is little financial motivation to enter into these schemes. The suggested models sound promising, however they have not been tested and there is no evidence or mechanism to ensure their delivery in high cost areas, and at the same time there is no mechanism to provide on the ground low rental housing numbers.

As pointed out in the recent Melbourne Affordable Housing Summit, the Moderate income population must be included in the eligibility for Affordable Housing, particularly where there is a clear case of high local employment of those workers, to avoid this group being marginalised and becoming the next group in housing crisis over the next 30 years. The summit speakers, including heads of banks and tier 1 and 2 developers, discussed the types of models suggested in Objective 11 and confirmed their limited ability to deliver meaningful housing in an equitable manner to the moderate income earners.

Part 6 – Sustainability

Sustainability concerns arise predominantly from the impacts of cumulative development. Therefore it is imperative that all medium and high density development, residential and non-residential be required to meet performance standards in their design that actively address the items that impact emissions, resource efficiency and climate change. In this way the impacts across areas (not across individual sites) can begin to address the problems.

Ku-ring-gai Council's DCP has requirements for all non-residential buildings to be environmentally sustainable and those above 2000sqm to be registered and attain formal certification under the Green Building Council of Australia's (GBCA) green star 'Design and As Built' rating tool to ensure the actual delivery of green buildings. There is no possibility to require the same from medium and high density developments due to the Department's lower thresholds of BASIX which deliver some but not wider reaching green outcomes in medium and high density development. Utilisation of tools such as those employed and regularly updated to global standards by GBCA ensures the delivery of green features in all developments greater than 2000sqm.

It is requested that the Plan include the requirement for green buildings to all developments and for formal certification to ensure their delivery of developments above 2000sqm. This will address smaller developments which have significant carbon footprints and which contribute to cumulative impacts.

8. Draft Future Transport Strategy 2056

Future Transport 2056 is an update of NSW's Long Term Transport Master Plan (released in 2014). It is a suite of strategies and plans for transport developed in concert with the Greater Sydney Commission's Sydney Region Plan, Infrastructure NSW's State Infrastructure Strategy, and the Department of Planning and Environment's regional plans, to provide an integrated vision for the state.

Ku-ring-gai Council's submission to the Draft Future Transport 2056 plan is primarily focused on Section 9 - The Future Network.

Growing the Greater Sydney Network

Figure 46 Committed Initiatives (0-10 years)

Passenger loadings on peak hour rail services on the North Shore Line operate at capacity in the peak direction. In addition, trains from Hornsby to the city travel slower now than they did 30 years ago. Train services between Hornsby and Chatswood have been reduced to accommodate services on the Epping to Chatswood line.

Ku-ring-gai Council supports capacity improvements to T1 North Shore Line. The commencement of North West Metro should free up capacity on the North Shore Line due to it running under separate alignment/corridor south of Chatswood/St Leonards. Additional capacity (additional trains/services) on the North Shore line could be delivered once the North West Metro is operational. A range of measures could be considered to improve services on the T1 North Shore Line including:

- re-introduce more rail services commencing/terminating at Gordon;
- increase the number of express services during peak periods;
- provide for better coordination of services at transferring stations - Chatswood and Hornsby; and
- increase train travel speeds by eliminating unnecessarily long dwell times at stations

Ku-ring-gai Council also supports train service improvements between Greater Sydney, Central Coast and Newcastle, as a substantial number of residents from the Central Coast

area commute to Sydney for work. Improvements to train services would result in less travel on motorways and roads connecting the Central Coast with Sydney.

Initiatives for Investigation (10-20 years)

Ku-ring-gai Council strongly supports the construction of mass transit from Parramatta to Epping. Although the link lies outside the Ku-ring-gai LGA it will improve travel to and from Ku-ring-gai, particularly from the northwest growth and the Central River City areas. It also represents an opportunity to further improve train services on the North Shore Line (see above). This should be a high priority for investigation.

Roads in Greater Sydney – a mass transit network supporting trunk journeys

Greater Sydney Road Network 2056 (visionary)

This plan shows a road corridor between North Sydney/Chatswood and Hornsby/Central Coast as a visionary strategic corridor for investigation. This corridor presumably would parallel/duplicate the current Pacific Highway corridor between North Sydney/Chatswood and Hornsby. While not having established a formal position on such a corridor/route, anecdotally there is support amongst Ku-ring-gai residents for a road that would bypass Pacific Highway. Such a corridor/route would also assist in delivering vibrant retail strips along Pacific Highway (which would lie in the “vibrant streets” quadrant of the movement and place framework described in the Revised Draft North District Plan) provided that one of the outcomes of the corridor is to reduce traffic intensity and improve amenity on the existing route.

The intermediate network in Greater Sydney – connecting people to mass transit services

Three road corridors serve the Northern Beaches region – Military Road-Spit Bridge, Warringah Road and Mona Vale Road. Much of the travel to/from this region must pass through Ku-ring-gai and this will continue to increase, particularly as the Northern Beached Hospital Precinct is developing as a strategic centre. Apart from the recently introduced B-Line service, public transport to the Northern Beaches region is currently in the form of regular route bus services using existing road infrastructure. In the longer term, consideration should be given to alternative forms of public transport such as dedicated busways, light rail, metro rail or heavy rail. Although most recent government and non-government transport plans advocate busways and “bus first” roads to serve the Warringah Road corridor, forms of rail should not be discounted. Through its Integrated Transport Strategy, the proposal for an on-street rapid transit corridor (light rail/rapid bus) connecting Chatswood with Northern Beached Hospital Precinct and Dee Why/Brookvale is strongly supported by Ku-ring-gai Council.

With the exception of an indirect connection in the 2056 Bicycle network, there is no mention of any links in the Mass Transit Network or Intermediate Transit Network along the east-west corridor between Macquarie Park and Mona Vale. This is despite Macquarie Park and Ingleside being designated as Priority Precincts or Collaboration Areas in the Revised Draft North District Plan. Ku-ring-gai Council's submission to the Draft North District Plan provided some context regarding the Journey to Work characteristics of the Macquarie Park strategic Centre based on 2011 data, but we have not been able to obtain processed Journey to Work

characteristics (at Travel Zone level) based on the 2016 data due to its late release. Additional analysis of the 2016 data should be undertaken to inform travel patterns into Macquarie Park to identify any mode shifts or changes to origin/destination of journeys to work.

Increased bus services along the Mona Vale to Macquarie Park route are supported by Ku-ring-gai Council through its Integrated Transport Strategy but congestion on Ryde Road and Lane Cove Road warrants additional measures to ensure frequent bus services to/from Macquarie Park are reliable and therefore an attractive alternative to private vehicles. Also, the importance of Mona Vale's Bus Interchange role as an east-west connection is reiterated in the Revised Draft North District Plan, which would serve as the eastern end of the Macquarie Park-Mona Vale corridor.

The proposal in the Intermediate Transit Network for an on-street rapid transit corridor (light rail/rapid bus) between Rhodes and Macquarie Park lends itself to be extended north-easterly towards West Pymble/West Gordon, Gordon, St Ives, St Ives Showground, Belrose, Terrey Hills, Ingleside and Mona Vale. The cited localities could even form the basis for light rail/rapid bus "stations". Given the superior people-carrying capacity of rapid buses (9,000 pax/hr/lane) over private vehicles (2,000 pax/hr/lane - under free flowing conditions, and less under congested conditions), there is a case to implement a rapid bus route between Mona Vale and Macquarie Park, with dedicated bus lanes at least between St Ives and Macquarie Park (on Ryde Road and Mona Vale Road), given the roads space available in that segment.

Growing Greater Sydney's Bicycle network

While Ku-ring-gai Council supports the development and implementation of the Bicycle Network shown in the Figure 57 (Growing Sydney's bicycle network (visionary)), the connection between Macquarie Park and Mona Vale (via Terry Hills/Belrose/St Ives) is indirect as, once arriving at Gordon, it would require users to detour to Chatswood or Hornsby/Pennant Hills. The link between Gordon and Macquarie Park should be made, and could tie in with a potential on-street rapid transit corridor (light rail/rapid bus).