

Ku-ring-gai S94 Plan 2004-2009 – Residential Development (Amendment No 1)

PART C : STRATEGY PLANS

Development Potential and Projected Population

17. What are the expected types of development in Ku-ring-gai?

- 17.1 The Ku-ring-gai LGA is a middle ring suburb located on Sydney's north shore. Prior to the 1996 Census, the population of the Ku-ring-gai area had been generally declining. The results of the 2001 Census indicate that between 1996 and 2001 the population of Ku-ring-gai increased at a steady rate of around 0.5% per annum.
- 17.2 Housing in Ku-ring-gai is predominantly in the form of separate, detached houses. In 2001, 86% of all dwellings were separate houses which was substantially higher than the average for the Sydney Statistical Division (SSD) of 63%.
- 17.3 In recent years the dwelling stock of Ku-ring-gai has been increasing steadily. Between 1996 and 2001 the total number of occupied private dwellings increased by around 2.1% (or 703 dwellings).
- 17.4 An analysis of dwelling applications made to Ku-ring-gai Council between 2000 and 2003 showed indicatively that multi unit dwellings are continuing to be the dominant form of new development, although there has been some resurgence in the development of separate houses. During this period, 43% of dwellings approved were aged housing developments under SEPP (Seniors Living), 35.9% were separate houses (up from 24.4% between 1995 and 1998) and 16.5% were dual occupancy developments. Only 5.0% were flats. In total, multi-unit housing accounted for 64.1% of all new dwellings, down from 72.8% between 1995 and 1998.
- 17.5 It is anticipated that future housing development in Ku-ring-gai will be in a variety of forms and in accordance with State Government policy, the future housing choices in Ku-ring-gai have been widened to provide for changing housing needs. Multi unit housing development is expected to increasingly become the dominant form of new housing development, following the implementation of Stage 1 of the Residential Development Strategy and the development of the sites rezoned by the Minister under SEPP 53. Aged housing developed under SEPP (Seniors Living) is likely to slow due to decreasing availability of suitable sites, but will continue to occur at a lesser rate unless an exemption to this type of housing is granted.
- 17.6 Projections of additional dwelling stock based on the capacity of the Stage 1 RDS areas and expected trends in dwelling construction, dual occupancies and SEPP (Seniors Living) housing are as follows:

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Table 4 - Projected Change in Dwelling Stock 2001-2026

	2001 (census)	2004	2009	2011	2016	2021	2026
Houses	30679	31120	31640	31848	32368	32888	33408
Other	4858	5179	7676	8444	10304	12164	13350
Total	35537	36299	39317	40293	42673	45053	46836

17.7 The increase in dwellings is predicted to be strongest in the other dwelling category, which includes multi unit dwellings.

17.8 Stage 1 of the Ku-ring-gai Residential Development Strategy identifies areas suitable for future multi unit development, which are concentrated along the Pacific Highway-railway spine corridor, and around the St Ives town centre. This multi unit housing will vary in scale from dual occupancy to multi- storey apartment buildings. Dual occupancy development will be limited to the Stage 1 RDS areas. Stage 2 of the Strategy envisages further multi unit housing at the main town centres. This stage will require a new contributions plan to be developed.

17.9 It is envisaged that the Stage 1 RDS will be implemented over a 20 to 25 year development time frame. In established areas redevelopment and change is a continuous process without a definitive beginning or end. The redevelopment process has been progressive in Ku-ring-gai over the past 10 years subject to cyclical changes and an increase in SEPP (Seniors Living) housing instigated by changes in State planning policies.

17.10 Council planning staff report a strong latent demand for multi unit housing and expect an increase in development applications and construction activity following the gazettal of LEP 194. It is expected that there will be a significant increase in activity over next five years following which the rate of development will stabilise. In view of the development potential created by Stage 1 of the RDS, it is important to take a long term view of development activity and Council's response in terms of infrastructure provision. Consequently projections of dwellings and population have been prepared for the long term period of 2004 to 2026 within which the residential strategy is likely to be implemented.

17.11 The long term nature of the RDS requires Council to take a long term view of the provision of public amenities and services and to plan for infrastructure to meet the needs of the additional population over the life of the RDS.

17.12 In order to support a long range planning horizon, the management of Section 94 requires continuous monitoring and review. This is reinforced by the difficulties in accurately predicting development and change in established areas. Consequently the plan envisages an on-going process of review of development trends, population growth and the changing needs of the community.

18. What is the expected increase in population?

18.1 Long range resident population projections have been prepared for Ku-ring-gai LGA by projecting the dwelling stock in the first instance and then applying a number of assumptions to project the population likely to live in each precinct of the LGA. The projections involved:

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- Beginning with the 2001 census dwelling stock, estimates of dwellings and population to the year 2004 were made based on current trends in development activity. This provides the base year population for this plan
- Net additions to dwelling stock from 2004 to 2026 were made based on the assessed dwelling capacity of the rezoned areas (Stage 1 of the RDS and the sites rezoned by the Minister)
- An assumed vacancy rate was applied to the sum of the existing and new dwellings to obtain a projection of the number of occupied dwellings in a given year
- The occupancy rate was projected on the basis of the trends between 1996 and 2001 and then applied to the projected occupied dwellings to obtain the projected population.

18.2 The projections were prepared for the LGA, precincts and RDS Areas within each precinct. Separate estimates were made for houses and other dwellings.

18.3 On the basis of the projections described above, it was estimated that the Ku-ring-gai LGA population will increase steadily from the estimated resident population 107,819 in 2001 to reach 109,824 by 2004, 114,823 by 2009 and 126,181 by 2026.

18.4 The population of the southern suburbs (Roseville, Lindfield, Killara and Gordon) is projected to increase to 42,357 in 2009 and to 47,697 in 2026. The population of the northern suburbs (Pymble, St Ives, Turramurra/Warrawee and Wahroonga) is projected to increase to 72,466 by 2009 and to 78,485 by 2026.

18.5 The period of the plan may be reduced or extended by the Council should these projections be reached earlier or later than projected.

18.6 The projected population for each precinct is indicated on Table 5.

Table 5 - Projected Resident Population by Precinct

Precinct	2001 ¹	2004	2009	2026
Roseville	8,776	8,905	9,182	10,015
Lindfield	12,524	12,785	13,695	15,212
Killara	11,842	11,998	12,573	14,216
Gordon	6,184	6,289	6,907	8,254
<i>Southern Area</i>	<i>39,326</i>	<i>39,977</i>	<i>42,357</i>	<i>47,697</i>
St Ives	18,547	18,816	19,357	20,939
Pymble	15,343	15,593	16,376	17,163
Turramurra	21,249	21,614	22,281	24,032
Wahroonga	13,356	13,825	14,452	16,351
<i>Northern Area</i>	<i>68,495</i>	<i>69,848</i>	<i>72,466</i>	<i>78,485</i>
Total	107,819	109,824	114,823	126,181

NB: Sub totals do not sum to totals due to rounding

¹ 2001 Census figure for Estimated Resident Population (ERP)

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19. What are the anticipated characteristics of the population?

19.1 Analysis of the population profile of Ku-ring-gai LGA in 2001 and trends between the 1996 and 2001 Censuses found that:

- the Ku-ring-gai population had increasing numbers and proportions of children in all age groups 0-14 years. The most significant absolute increase was for 5-9 year olds; while the 0-4 year olds were the fastest growing population group in the LGA
- between 1996 and 2001 the number and proportion of young people aged 15–24 years declined significantly, as did the population of adults aged 25-39
- between 1996 and 2001 the number and proportion of adults aged 40 and over increased. The greatest growth occurred in those aged between 50 and 64, who were the second fastest growing population group in the LGA
- in 2001 Ku-ring-gai LGA had above average and increasing numbers and proportions of people in the older age groups (50-64 years) and very old age (65+) groups.

19.2 Based on these trends and the characteristics of new residential developments in Ku-ring-gai, the future population is likely to exhibit the following characteristics:

- a growing population of children and young people (0-15)
- a growing population aged 40 and over
- a significant proportion of older people who are moving from larger family homes to medium density housing
- an influx of new families taking the place of these people in larger family homes and replacing older dwellings with new family homes
- the possibility of a reversal in the decline of young people aged 18-24 and 25-29 with the development of multi unit housing around railway stations; and
- a continuing higher than average proportion of people with higher than average income levels and working in professional or managerial positions.

19.3 These new residents, especially younger children and families, and young adults, will create new demands not currently experienced by the existing population.

20. What is the relationship between expected development and demand for additional works?

20.1 This part establishes the relationship (nexus) between the expected types of development in the area and the demand for a range of community and recreation facilities; provision of additional open space; traffic, pedestrian and cycleway facilities; other works in the public domain such as street tree planting and shopping centre improvements; and administration to meet the needs of new development and the expectations of new residents to the area.

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Causal Nexus (Link with What is Needed)

20.2 The anticipated increase in resident population and development, and the differing population characteristics of these residents, will:

- (i) place greater demands on existing facilities, services and infrastructure
- (ii) require the provision of new, additional or improved facilities, services and infrastructure which are currently not available in Ku-ring-gai or are available but do not have the capacity to meet the demands of future population.

20.3 The link or nexus between anticipated development in Ku-ring-gai and the nominated works has been established according to:

- (i) characteristics of the population and the requirements for new, additional or improved facilities
- (ii) the availability and capacity of existing facilities, services and infrastructure in the area
- (iii) the extent to which the proposed facilities and services will meet the needs of the new population.

20.4 This plan includes a schedule of works which are required as a consequence of anticipated development (Table 1). The cost of providing these facilities will in part be met and recouped from new development in Ku-ring-gai.

20.5 The proposed works will be carried out to meet the likely needs for, and the increasing usage of, facilities, services and infrastructure as a consequence of new development or in anticipation of new development.

Physical Nexus (Link with Where it is Needed)

20.6 Where possible this plan identifies the location of the proposed works to be provided relative to the communities which they are intended to service. The location of the works has been determined having regard to the location of increased demand, accessibility to the identified facilities and services and the manner in which such need may best be satisfied. In some cases specific sites need to be identified as development occurs.

20.7 Some facilities and services will serve all new residents of the LGA, and consequently all new development will contribute to these facilities and services. Other facilities may benefit residents of particular precincts in the LGA more than others and therefore different contributions will be required from different precincts to contribute to these facilities.

Temporal Nexus (Link with When it is Needed)

20.8 Only those works which are required as a consequence of anticipated development up to and including the year 2009 are included in the plan. To ensure temporal nexus is attained, it is proposed that some of the facilities and services are developed prior to all contributions being collected for the facility or service, and that the cost of providing the facility or service is recouped by Council.

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20.9 The works schedule identifies:

- (i) works for which all contributions are proposed to be taken during the period of the plan
- (ii) works which are longer term, major works, for which contributions will be commenced to be taken during the period of the plan, but will continue to be taken and may not be provided until the period of the next plan.

20.10 There may be a lag between the end of the plan and the time at which a facility is provided. This is because a period of time elapses between the date of contributions levied under the plan and their payment. Council will make all efforts to expend contributions as soon as possible after the end of the plan and within reasonable time of their collection.

21. To what extent will the proposed works meet the needs of the population?

21.1 The proposed works identified in this plan are required to satisfy the anticipated demands of the expected types of residential development in Ku-ring-gai.

21.2 Ku-ring-gai already provides many of the types of community, recreation, open space, and other infrastructure likely to be required by the expected types of development. However, these facilities are, in some cases, straining to meet the needs of the existing population and there is no spare capacity available to serve the additional demand created by the incoming population. New residents, such as mobile young singles, will also have different needs and expectations to existing residents.

21.3 Where works will meet the needs of both existing and new residents, the cost of the facility will be apportioned between the two.

22. What facilities are required?

22.1 The works required have been identified through work undertaken by Council, community consultation and an assessment of needs undertaken for this plan.

22.2 The nexus for the facilities required is summarised in each of the following sections:

- Section C1: Community Facilities
- Section C2: Recreation Facilities and Open Space
- Section C3: Traffic, Pedestrian and Cycleway Facilities and Public Domain Improvements and
- Section C4: Administration.

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SECTION C1: COMMUNITY FACILITIES

23. Overview of proposed facilities and services

23.1 The proposed community facilities and services are as follows:

Community and Cultural Facilities

- Multipurpose Community Centre
 - Stage 1 – Masterplan, Feasibility Study and Concept Design
 - Stage 2 – New Library and Fit-out
 - Stages 3-5 – Community Centre
- Library Book stock and Computers

Children's Services

- Purchase of site and development of a new multipurpose child care centre

Youth Facilities

- Gordon Student Resource Centre – purchase furniture and equipment
- St Ives Youth Centre – purchase furniture and equipment
- Mobile Youth Centre – purchase vehicle and equipment

Senior's Facilities

- Minor alterations, additional computers, furniture and equipment to Council's seniors' centres

Information Services

- Preparation of New Residents' Kits
- New Resident Survey

24. Community and Cultural Facilities

24(a) Factors Affecting Supply

24.1 A place of some kind for the community to meet is considered a basic prerequisite for community development. A sense of identification with an area and seeing it as 'our community' is encouraged in a number of ways, an important one being shared activities carried out in the locality. A local community facility such as a community centre, hall or meeting room both provides a home for existing groups, encourages the formation of new groups and provides a place for both to meet and integrate.

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Locality based groups are some of the building blocks of community cohesion and often the focus of effective neighbourhoods.

24.2 Ku-ring-gai Council manages and maintains six community halls and six meeting rooms throughout the municipality. Community halls are as follows:

- East Lindfield Community Hall
- West Lindfield Community Hall
- West Pymble Community Hall
- Ku-ring-gai Town Hall (Pymble)
- St Ives Community Hall
- East Roseville Community Hall.

24.3 The community halls are suitable for a variety of recreational activities, community and social events, family celebrations and parties, company functions, exhibitions, sales, receptions and fund-raising events. All halls include a stage and provide kitchen facilities that include hot water, a refrigerator, microwave and oven. The facilities also provide disabled access and amenities, together with off-street parking.

24.4 There are also six meeting rooms, which are suitable for small classes, club meetings and workshops. They are all fully carpeted, temperature controlled and include whiteboards.

24.5 Meeting rooms include:

- Ku-ring-gai Library Meeting Room
- St Ives Library Meeting Room
- Ku-ring-gai Town Hall Meeting Room
- Ku-ring-gai Community Groups Centre Meeting Room (St Ives)
- Hamilton Park Meeting Room (Turramurra)
- Performing Arts Resource Centre Meeting Room (Pymble)

24.6 There are a large number of other clubrooms, halls and premises owned by Council which are leased to individual community groups.

24.7 The cultural development of the community is a more recent initiative. Council has previously prepared a Ku-ring-gai Cultural Policy (1997), and is currently finalising the preparation of the Ku-ring-gai Cultural Plan.

24.8 The Ku-ring-gai Cultural Policy (1997) identifies Council's role in the cultural development of the Ku-ring-gai area through the provision of services, access to facilities, resources and expertise. Council's commitment to the cultural viability of

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its community has been established through the provision of a network of libraries, recreation services and facilities, the activities of the Ku-ring-gai Arts Centre, the organisation of special events, support for cultural groups and individuals, the provision of resources and employment of an Arts Officer.

24.9 Council has one central library at Gordon and three branch libraries. The distribution of libraries throughout the LGA is such that they are easily accessible from most parts of the LGA, although they all show bias in usage. Branch libraries are located at Turramurra, St Ives and Lindfield. The Turramurra Library includes a toy library. St Ives Library is located within the St Ives village and is one of the newer libraries in the LGA. Lindfield Library was built in 1954 and due to its age and condition requires a major refurbishment to bring it up to current library standards. Turramurra Library also requires an upgrade.

24(b) Basis of Nexus

Community Centre

24.10 An analysis was undertaken on the level of patronage of the existing community facilities. It was found that community halls and meeting rooms were increasingly well utilised, especially those in centres along the spine and in St Ives.

24.11 The main barrier to increased use of the existing facilities to meet the needs of future population is the quality and condition of building stock. Issues include:

- The majority of community halls are over 40 years old and have dated internal configurations in terms of size, layout, storage, access, fixtures, fittings and climate control
- The majority of meeting rooms, with the exception of the St Ives Library Meeting Room, are also quite old and dated and have similar limitations in their size and configurations.

24.12 An access audit was undertaken in December 2000 on all Council owned facilities. Access improvements and accessible toilets are required under the Disability Discrimination Act on several of the halls and meeting rooms to ensure that all members of the community, including people with disabilities, are able to participate in Council activities and to ensure that people have a reasonable expectation of access to Council facilities.

24.13 The Ku-ring-gai Social Plan 2000 identifies the following issues requiring consideration relating to these facilities:

- the provision of conference facilities
- the upgrading of kitchen facilities to enable catering for functions and events
- the upgrading of associated playground areas.

24.14 There is also a need to provide climate control (air conditioning) in the Ku-ring-gai Town Hall and community halls, to ensure these facilities can meet their additional

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multi-use functions, cater for the increase in numbers effectively and meet the expectations of new users.

24.15 The alternative is to provide new floor space for the existing population, either according to commonly used standards, or at the same rate of provision as the existing population. It has been determined that contribution to a new centre potentially provides the highest level of amenity for new residents.

Cultural Facilities

24.16 The cultural policy identifies issues arising from the ad hoc manner in which the existing cultural facilities have evolved. In particular, there has been limited co-ordination or cross referencing within Council, between the various departments overseeing the management of these resources. The policy also points to a perception within Council that arts issues are regarded as a fringe issue.

24.17 According to the Cultural Policy, the cultural needs of the community include:

- an audit of Council's properties and review of their potential for cultural uses
- investigation of the potential use of existing facilities for multi-purpose activities e.g. performance, sculpture, craft, exhibitions
- examination of opportunities for upgrading existing halls for multi-purpose activities, performance, conference facilities and meeting space
- investigation of potential sites for new cultural facilities; and
- investigation of the potential of existing sites for redevelopment in order to support the community's diverse cultural activities and needs.

24.18 Discussions with Councillors and Council officers indicate the need for a large multi-purpose meeting/performance space. For large functions and events, users are currently required to utilise private or educational provider's facilities. The need for such a space was identified in the 1997 Policy, which offered office accommodation, meeting space, exhibition/performance space, formal and informal conference area, teaching and messy areas (arts), multi-purpose kitchen and dining area.

24.19 Council officers have more recently detailed the concept for a multi purpose community facility and performance venue, which could accommodate community and cultural services as well as a library.

Library facilities

24.20 The need for upgrading and expansion of library buildings in Ku-ring-gai has been emerging for some time. The community consultation held during the period of preparation of this plan found that:

- Gordon Library is over utilised
- Lindfield, Turramurra and St Ives libraries all need extending

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- there is a need for more study areas and resources in smaller libraries
- students use libraries to study, hold tutorials, use references and the Internet
- there is a need for all libraries to have a good range of books, materials and computers.

24.21 The library is a strong community institution within the Ku-ring-gai community. To enhance the community access and use of the library, the location of library branches should be within a hub or focus of community activity. In any redevelopment of existing or siting of new libraries, it is commonplace for co-location of library facilities with other community uses, such as child care centres, community centres, and possibly other uses such as residential and commercial uses.

24.22 The future library design needs to be flexible to be able to adapt to changing technologies and methods of providing, gathering and storing information. The libraries need to be dynamic to enable them to meet the changing requirements to maintain their relevancy within the community.

24.23 The distribution of libraries throughout the LGA is such that they are easily accessible from most parts of the LGA. However Lindfield library branch was built in 1954 and due to its age and condition requires a major refurbishment to bring it up to current library standards. Redevelopment options for the site have long been considered. The site is occupied by the library, two tennis courts, a former children's play ground, the Seniors Citizen's Centre, the Arrunga aged care residential units and a free standing building at the rear which is used as a Senior's Resource Centre and for University of the Third Age classes. Future redevelopment of the site would need to consider replacement of the facilities already provided on the site. Even if such a redevelopment does not proceed, Council needs to give consideration to development of a new library to serve the southern part of the LGA.

24.24 Similarly, the Turramurra Library also requires an upgrade, in recognition of its high levels of patronage, visitation and use and also to enable the library to meet current State Library Standards.

24(c) Proposed Facilities

24.25 The proposed facilities are:

- a Multipurpose Community Centre, comprising five stages tentatively comprising
 - Stage 1 – Masterplan, Feasibility Study and Concept Design
 - Stage 2 – New Library and Fitout
 - Stage 3 – Meeting and Conference Centre
 - Stage 4 - Auditorium
 - Stage 5 - Exhibition Centre

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- Library Bookstock and Computers

24.26 It is proposed that the multipurpose community facility would accommodate a number of existing users as well as having capacity for new emerging groups. The above is an indication of the proposed staging of the facility. This may change or Council may vary components of the facility as detailed planning and design progresses.

24(d) Basis of Apportionment

24.27 The provision of the Multipurpose Community Centre will both meet a backlog which exists and is well acknowledged in the Ku-ring-gai community, as well as serving the new residents of the LGA.

24.28 The long term nature of the project and the benefits it will endow are such that it will be a major long term project of Council, and as such should be apportioned over several contributions plans spanning the life of the RDS.

24.29 At the same time, the use of the centre will be shared with existing residents and as such the total cost of the facility is apportioned between existing and future users as follows.

24.30 The cost of Stage 2, comprising a new library, and upgrading and/or expansion of either Lindfield or Turramurra libraries, has been apportioned on the basis of an LGA wide per capita rate being applied to the provision of new floorspace according to the State standards and formulae contained in the NSW State Library publication, "People Places – A guide for public library buildings in New South Wales 2000". At this rate of provision, 550 square metres of floorspace will be required of the new population between 2004-2026. This has been costed at \$3,000 per square metre (building and fit-out costs in 2007), which will be fully apportioned to the new population. However in order to build a new library in excess of this floorspace, Council will need to contribute the cost of any shortfall. Alternatively Council could provide new space of the amount contributed, at Lindfield or Turramurra Libraries.

24.31 The cost of Stages 3-5, comprising community and cultural floorspace, has been apportioned by applying the current per capita provision of Council provided floorspace to the future population. Based on the current provision, the additional population 2004-2009 would require approximately 965 square metres of additional community and cultural floorspace. The reasonableness of this requirement has been cross checked by considering a standards approach. Commonly used standards suggest the provision of one community centre of 750-1000 square metres on a site of 3500-4000 square metres for 10,000-20,000 people. For the long term new population of 16,357 people, a new centre of 1000 square metres is consequently proposed. Council has not required a site because of the cost of acquiring land, and intends to site the facility on Council land.

24.32 The use and staging of this floorspace will be determined by the Stage 1 planning process, and as such, the cost of Stage 1 is 100% apportioned to the new population between 2004-2026. Council will need to determine whether and at what stage it wishes to contribute additional funds to meet current backlogs for the existing community.

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25. Children's Services

25(a) Factors Affecting Supply

25.1 Ku-ring-gai LGA has a range of child care services. The New South Wales Department of Community Services licenses the following full-time equivalent licensed children's places in Ku-ring-gai:

Table 6 - Licensed Children's Services

Children's Service	Licensed Places
Long Day Care	986
Family Day Care	140
Home Based Care	65
Occasional Care	64
Pre-school	1,005

Source: Ku-ring-gai Council, 2007

25.2 Ku-ring-gai Council is active in fulfilling the child care needs of residents of the LGA. Council owns and manages the Thomas Carlyle Children's Centre, a 53 place long day care centre and operates the Ku-ring-gai Family Day Care Scheme which is a Council managed scheme that recruits, trains and supports carers to provide child care in carer's homes. It also owns the Bradfield Park Pre-school and Child Care Centre.

25.3 Additionally Council leases buildings to 13 children's services providers who provide:

- 1 long day care service
- 1 before and after school care service
- 1 occasional care service
- 9 pre-school services, and
- 1 playgroup service.

25.4 Council also holds a licence with 2 pre-schools who operate from Council halls. Council supports these services by providing a rental rebate to the services and provides maintenance to the properties according to specified lease or licence conditions.

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25(b) Basis of Nexus

- 25.5 In April 1999, the Commonwealth Department of Family and Community Services published information from the National Planning System for Child Care. The Department found that Ku-ring-gai LGA rated third last among the LGAs in the Northern Region of Sydney, with only 80.7% of the demand for below school aged care being met in Ku-ring-gai. Within the Northern Sydney Region, Ku-ring-gai had the third lowest ranking, equating to a shortfall of 189 long day care places, especially for children aged 0-2 years. The Department estimated at that time that Ku-ring-gai required 979 full time formal child care places to be available when as at 1 February 1999 there were only 790 places available. Of the places available at that time 578 places were in long day care centres and 212 places were in family day care.
- 25.6 Since that time, the Department of Family and Community Services has ceased to prepare the above child care data. However extrapolating the methodology of the 1999 assessment shows that despite the development of 118 additional long day care places through the expansion of existing centres and the provision of two new centres, Ku-ring-gai LGA continues to experience a level of supply just under 80%. This is most likely due to a combination of population growth, especially by young families, a significant loss of family day care carers, and possibly increased demand by working parents.
- 25.7 The Department of Family and Community Services calculations show that one full-time formal child care place is required for every three children who have either both parents, or a sole parent, working, studying or training, and not enrolled in school. In 2004, this meant 1014 places are required; in Ku-ring-gai however only 807 places were available (647 in long day care centres and 160 family day care), leaving a shortfall of 207 places. Hence the supply of long day care places in Ku-ring-gai was 79.6% in 2004. Therefore one in every five working parent families (with a sole parent or both parents working) who require a long day care place, will not find a child care place in Ku-ring-gai.
- 25.8 The shortage of long day care places is further emphasised through the Council's waiting list in its own service. At the end of 2003, this had 302 families on the waiting list for a centre with only 53 full time care places available. Council's discussions with service providers, family day care services and parents have identified that levels of demand exceeded that supplied across all service categories of child care for 0-6 year olds. According to data collected by Council, other services in the LGA consistently report long waiting lists and strong demand.
- 25.9 The incoming population arising from new development will contribute significantly to the demand for child care. The analysis of demographic trends outlined earlier found that the previous decline in population aged 0-4 and 5-9, in particular, has been arrested and the Ku-ring-gai population now has increasing numbers and proportions of children in all age groups 0-14 years. The most significant proportional increase between the 1996 and 2001 Censuses was for 0-4 year olds, who were the fastest growing population group in the LGA (9.5%).
- 25.10 Council currently provides and manages 5.3% of long day care places in the Ku-ring-gai area. There has been a significant increase in the number of places since 2004 due to the involvement of the private sector in the provision of long day child care.

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In June 2007 there were 986 licensed long day care places in Ku-ring-gai, an increase of 52% on the number available in 2004. This increase in supply has meant that the shortfall identified in 2004 has been satisfied. The private providers have increased supply to meet the perceived market need. This has occurred over all age groups.

25.11 The increase in supply of places has led to a reported reduction in waiting lists.

25(c) Proposed Facilities

25.12 The following facilities are proposed for Council provision from S94 contributions:

25.13 Contribution to the purchase of a site and development of a new multipurpose child care centre.

25.14 In accordance with current practice the centre proposed has been redefined as a more multipurpose child care centre, including a hall, meeting rooms and play area suitable for other child care activities such as playgroups, meetings of family day carers etc.

25(d) Basis of Apportionment

25.15 The estimated number of required places for the anticipated population increase of 4,998 between 2004-2009 is 46 places.

25.16 However, as indicated above, it is expected that the private sector will continue to meet some of the demand for child care places. Consequently the cost of the new multi-purpose child care facility is apportioned on the basis of the existing (2007) percentage of long day child care places provided by the Council. This percentage is currently 5.3%.

25.17 This will be in addition to any places which will be funded by levies collected under earlier contribution plans. Funds already collected for child care will be used for the provision of the multi-purpose child care facility.

26. Youth Facilities

26(a) Factors Affecting Supply

26.1 Council currently directly provides the following youth services:

- St Ives Youth Centre
- Gordon Student Resource Centre
- Mobile Youth Outreach services
- Entertainment program
- Facilitation and resourcing of the Ku-ring-gai Youth Council.

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- 26.2 Council, in partnership with Hornsby Council produces the Hornsby/Ku-ring-gai Youth Services Guide and the youth information card.
- 26.3 Financial assistance is available to community groups through Council's donation program. In the past the number and scope of applications received in the youth section have been limited and this may reflect the limited service outlets in the area. Regardless the amount of requests far outweighs the available funding.
- 26.4 The Ku-ring-gai Arts Centre provides a number of programmes specifically targeted at young people in school holidays and throughout the year.
- 26.5 Accommodation including a 90% rebate is provided to a number of community groups who service youth e.g. the Willoughby/Ku-ring-gai Life Education Programme and the provision of land is made for numerous scout and girl guide halls.

26(b) Basis of Nexus

- 26.6 Utilisation or attendance at young people's service centres has been increasing as they have become known. Gordon Student Resource Centre is particularly well used.
- 26.7 In order to sustain and permit higher levels of utilisation there is a need to ensure that services remain relevant and up-to-date with the latest technology and equipment, and are suitably furnished and outfitted.
- 26.8 The number of actual youth centres within the LGA is quite limited and not easily accessible to all areas of the LGA. Therefore the role of the mobile/outreach youth service is important in the provision of youth services which are accessible to the whole LGA.
- 26.9 The Social Plan (2000) identifies transport as a key issue for youth. Young people have indicated that unless they have parents who were willing and able to drive them to and from activities, their transport options were very limited if located away from rail stations. The frequency of buses at night and on the weekend is a particular issue for young people.
- 26.10 On the basis of the above it would appear that the main facility needs in relation to young people are:
- To restructure existing youth services based on an outreach model
 - To establish youth services (consistent with the above) in locations such as Turramurra (initially), and potentially in the longer term, Wahroonga, Gordon and Lindfield
 - To develop additional and improved indoor/outdoor recreation and entertainment facilities, such as an Internet Café, further development of St Ives Youth Centre and Gordon Student Resource Centre
 - To provide computer facilities in all youth facilities.

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26.11 With the continuing trend toward increasing numbers of children and young families in Ku-ring-gai, the new population of Ku-ring-gai will increasingly warrant provision of new youth services.

26(c) Proposed Facilities

26.12 The facilities proposed for youth are:

- Gordon Student Resource Centre – purchase new furniture, equipment, resources, computers and electronic games
- St Ives Youth Centre – purchase new furniture, equipment, resources, computers and electronic games including PA, lighting and mixing equipment
- Mobile Youth Centre – purchase vehicle and equipment, resources, computers and electronic games.

26(d) Basis of Apportionment

26.13 Contributions will be used to upgrade and embellish existing youth facilities which have been provided for the young people of Ku-ring-gai. This is considered a more appropriate and cost-effective response to meeting the needs of the new population than providing new facilities. This is particularly the case with youth facilities, for which threshold populations are relatively high and the establishment of new services would not be justified. Contributions to existing facilities are considered necessary to expand the capacity of existing facilities for the new population and are therefore apportioned 100% to new development over the next five years.

26.14 In the case of the Mobile Youth Service, the current service is only provided on a part time basis with a non-dedicated vehicle and therefore it is considered appropriate for the existing and new populations to contribute proportionally to the establishment of this service. S94 in this case will provide only a very small proportion of the cost of this facility, which will be apportioned over all residents of the LGA.

27. Seniors' Facilities

27(a) Factors Affecting Supply

27.1 There are two senior citizens' centres in the LGA. These are located at Turramurra and Lindfield so that the centres service both the northern and southern parts of the LGA. The Seniors Resource Centre is also located at Lindfield, providing a home for the University of the Third Age as well as other seniors' activities.

27.2 The Ku-ring-gai Support Services Centre is located at Turramurra and offers a range of HACC services. The Centre is used by the North East Metropolitan Regional HACC Forum Inc., the Volunteer Recruitment, Referral and Training Service, the Hornsby-Ku-ring-gai Aged and Disabled Transport Service and Easy Care Gardening. Council works in partnership with KOWPA to manage and support the Meals on Wheels services which operate from both the Turramurra Centre and a kitchen at Gordon.

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27(b) Basis of Nexus

27.3 According to the Social Plan (2000), the operations at the Senior Citizen's Centres have declined in recent years. Without the support of paid staff it is difficult for the centres to develop appropriate programs for members. Both centres require physical upgrading to maintain their attraction to new members, and to cater adequately for these, as does the Seniors Resource Centre on the Lindfield Library site. Transport to access centres, as well as for other community purposes, is in constant demand.

27.4 There is a particular need to establish services that focus on the needs of older people from culturally and linguistically diverse backgrounds. It has been suggested that Council could establish a support group for older Chinese women for example and ensure that the Senior Citizens Centres are available to accommodate such groups.

27.5 Based on the above discussion, it appears that the main needs of older people are:

- To upgrade the existing Senior Citizens Centres and investigate options to better resource the centres
- To ensure that HACC facilities are capable of accommodating the increasing demands on them for services
- To develop leisure/recreation/social activities suitable for older people
- To expand community transport including the provision of community transport which is accessible to the elderly and disabled.

27(c) Proposed Facilities

27.6 The proposed facilities included in this plan are:

- Minor alterations, additional computers, furniture and equipment to Council's senior's centres.

27(d) Basis of Apportionment

27.7 These minor improvements will be necessary to accommodate the additional needs of new population over the next 5 years.

27.8 Therefore they will be apportioned 100% to the new population

28. Information Services

28(a) Factors Affecting Supply

28.1 Council currently provides a comprehensive information service to all residents. This includes the regular updating and publication of a community services directory and the production of various brochures. It has also been providing new residents' kits to specifically orient newcomers to the LGA.

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28.2 New development will require an expansion to this service to ensure that the incoming population are aware of the services and facilities available in their local area.

28.3 It will also be important for Council to obtain information about the characteristics and needs of new residents. This information is not currently available.

28(b) Basis of Nexus

28.4 There is a need for new residents to be made aware of the available services and facilities operating in the local area. Council has currently been preparing a new residents' kit inhouse on a low budget but there is a need for a major update of the kit and possibly outsourcing of the preparation of a new residents' kit on an annual basis. This will be distributed to new residents of the LGA as a means of fulfilling this need. It will be necessary for Council to ensure that this information is as accessible as possible to people with barriers to language, literacy and disability.

28.5 The new resident survey will allow Council to ensure that the needs of new residents are identified and addressed wherever possible. On this basis, funds have been allocated for the survey to be undertaken once during the five year period of the plan.

28(c) Proposed Facilities

28.6 The following facilities are proposed for Council provision with assistance from S94 contributions:

- preparation of new residents' kits;
- preparation and administration of a new resident survey.

28.7 Preparation of the new resident kits is being undertaken each year from Council's general revenue and will be recouped when funds are collected.

28(d) Basis of Apportionment

28.8 The proposed expenditure on the new resident kit will be to meet the needs of the future population, and the new resident survey will specifically benefit only new residents. It is therefore appropriate for the cost of these to be fully recouped through S94 contributions.

29. Library Bookstock and Computers

29(a) Factors Affecting Supply

29.1 Council places a high priority on library services, as do members of the community. Overall library usage, measured by the number of loans has declined marginally across the LGA in recent years. While the overall number of loans is down, visitor numbers have increased marginally in recent years. Gordon and Turramurra Branches have experienced greater visitation, while St Ives and Lindfield Branches have declined, but to a lesser extent to that in 2001/2002. This is in line with trends that suggest libraries are increasingly becoming places of social interaction in a

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“virtual” world. Library membership is also increasing as a percentage of the population.

29(b) Basis of Nexus

29.2 This plan aims to maintain the existing level of access to library resources by requiring new development to contribute towards providing additional material and public access computers at existing libraries to meet the needs of new residents.

29.3 Standards of service provision for the range of services, and response rates for these services remain high. It is noted that since September 2002 enquiries have been made available through the Internet, which based on the number of enquiries appears to be very successful and is increasing rapidly.

29.4 The Social Plan identified that the Library service is well recognised within the Ku-ring-gai community and that the Council provides a “very good” library service. Suggestions made for improving library services included:

- the need for additional books in large print to meet the needs of older users of the library
- a need for Council’s library services to consult with peak ethnic agencies to develop library resources and materials in community languages; and
- investigating the feasibility of establishing an Internet Café at Ku-ring-gai Library.

29.5 Libraries of the future need to ensure that future book stock considers the traditional printed material, audio visual material, as well as multicultural and multimedia resources. The library’s electronic resources are highly used, therefore any upgrade of the library resources must ensure that electronic systems meet current and potential future IT needs.

29(c) Proposed Facilities

29.6 Council proposes to require the following facilities to be provided at the same rate enjoyed by the existing population:

- Library book stock
- Public access computers (including computer furniture)

29(d) Basis of Apportionment

29.7 Ku-ring-gai Council currently provides library facilities and associated resources and equipment to serve the population of the LGA. Council intends to maintain the existing standard of provision to these services and facilities by requiring the new population to contribute appropriately toward additional library resources at the same rate as the existing population.

29.8 The proposed library book stock is 2.2 items per capita, at an average cost per item of \$27.11 per item. Both to maintain this level of provision of existing residents and

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to ensure new residents have access to the same level of resources, incoming residents in the LGA within the next five years will be levied at this rate (indexed for inflation).

29.9 At the present time residents of Ku-ring-gai LGA enjoy access to computers at the rate of 1 per 3,059 people. The average cost of leasing a computer (all computers are leased) for one year is \$1069 plus \$1069 for a computer desk and chair. This has been capitalised over the 5 years of the plan, to ensure that this level of access is maintained.

29.10 It is therefore appropriate that new residents of the LGA contribute 100% to the cost of these proposed resources over a five year time frame.

30. Public Art

30(a) Factors Affecting Supply

30.1 Ku-ring-gai Council has a public art policy in recognition that public art can fill a myriad of functions in the public domain. It can:

- Act as a signature for local identity, history and contemporary value
- Reflect the values and aspirations of the local community
- Act as a focal point for cultural activities, tourism and community development
- Be a planning component in revitalisation of the urban environment and
- Add interest and aesthetic elements to public parks and civic places.

30.2 In 1998, Council adopted a Public Art Policy. The aim of the Public Art Policy is “to guide and encourage the exhibition and inclusion of art within public places, ensuring the valued characteristics of Ku-ring-gai are enhanced.”

30.3 The Public Art Policy relates to visual and performing arts located in a public place. The policy aims to complement, and not override, Council’s planning regulations i.e. the existing or future Local Environmental Plans and Development Control Plans.

30.4 The objectives of the Public Art Policy are to:

- encourage art in public places in Ku-ring-gai
- contribute to raising the profile and recognition of arts and arts development;
- implement processes so that public art complements and enhances the valued characteristics of Ku-ring-gai, eg. leafy environment, spaciousness, heritage etc
- guide a coordinated and planned approach to the development and management of public art
- provide clear guidelines for Council and the community regarding public art development and responsibility; and

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- where relevant, implement processes and systems so that this Public Art Policy is reflected within Council's strategic directions, policies and planning controls, and vice versa.

30(b) Basis of Nexus

- 30.5 Ku-ring-gai Council has an increasing interest in the value of public art and sculpture, as demonstrated by its incorporation into new community developments such as the Gordon Library. It is intended to continue to support and encourage local artists and the expression of local identity and character.
- 30.6 Public art can be both large and small scale, transitory (chalk art) or permanent (mosaics); it can be made up of sculptures, designed paving, mosaic seating, play sculptures, unique fencing, fountains and waterworks; and it can be freestanding or integrated into the architectural fabric of buildings, amenities, pavements, sources of lighting, underpasses and bridges.
- 30.7 It will be important with the influx of new residents that public art can be commissioned, created through community arts projects, or be designed and made through place-making projects which help to define a new sense of cultural identity.
- 30.8 Public art can encourage a sense of identification with an area, and is one method seeing a sense of community being encouraged. Local art, like activities, help create a social focus, a sense of belonging to and responsibility for an area that supports community well being and safety.
- 30.9 Facilitation of Council's public art initiatives is consequently anticipated to assist in integrating existing and new residents, particularly where residents of different cultural backgrounds settle in the area.

30(c) Proposed Facilities

- 30.10 While most developers of sizeable developments would be expected to be keen to include public art in their own development, it is possible that a developer can choose to place a levy in trust with Council to commission local artists to undertake projects within the LGA.
- 30.11 A number of possible future public art projects have been identified under the "From the Ground Up" Public Art Initiative by Council's Leisure and Cultural section:
- A pavement mosaic project along the Pacific Highway spine in Gordon, Roseville, Killara, Roseville, Wahroonga, and also St Ives
 - Contemporary/indigenous street seating in town centres
 - Gordon Library Mural Relief Wall
 - St Ives Park water sculpture fountain/amphitheatre
 - Ku-ring-gai Pride Project, Pacific Highway.

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30.12 These projects would be provided in and will enhance the public domain of the RDS Areas and hence contribute to the leisure and cultural resources of these areas.

30(d) Basis of Apportionment

30.13 Public art such as the above is proposed to be provided by the Council as part of its capital works programme. No specific contribution is required for this purpose.

30.14 Developers are encouraged to incorporate a suitable public art project in their own development.

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SECTION C2: RECREATION FACILITIES AND OPEN SPACE

31. Overview of proposed facilities and services

31.1 The proposed recreation facilities and services are as follows:

Parklands

- Acquisition and Embellishment of Open Space

Sports Fields

- Reconfiguration of Koola Park, surface levelling and upgrade, and relocation of the turf wicket
- North Turramurra Sports Field Development

Embellishment

- Walking track links
- More recreation facilities (picnic areas, walking tracks, playgrounds)
- Upgrades to existing recreation facilities
- Sports facility upgrades.

31(a) Factors Affecting Supply

31.2 Ku-ring-gai Council already provides a range of recreation and leisure facilities and includes outdoor sports facilities and a range of facilities for unstructured play and recreation (including picnic areas, playgrounds, bike tracks and walking paths). Ku-ring-gai presently has no indoor facilities dedicated to physical recreation. Indoor leisure activities are restricted to libraries, cultural centres and public halls.

31.3 Parks and open spaces are key components of the environmental, recreation and social infrastructure in all communities. They are used and/or valued by a wide cross section of residents, from all age groups and socio-economic backgrounds.

31.4 The total and per head provision of open space in Ku-ring-gai is illustrated in Table 7.

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Table 7 - Provision of open space per capita by type

Open Space Type	No of parks	Total Hectares	Ha/000–Existing Pop*	Ha/000–2009 Pop**
Local & district open space				
Parkland/public garden	171	66.8041	0.6196	0.5855
Sports facility – sports fields	44	93.0779	0.8633	0.8157
Sports facility – tennis/netball courts	20	10.0841	0.0935	0.0884
Sports facility – other***	3	5.9406	0.0551	0.0521
West Pymble Swimming Pool	1	0.8531	0.0079	0.0075
Ancillary space	7	0.7616	0.0071	0.0067
Sub-total	246	177.5244	1.6465	1.5558
Regional/other open space				
Natural area	134	1,130.5316	10.4855	9.9078
St Ives Showground	1	25.2205	0.2339	0.2210
Ku-ring-gai Wildflower garden	1	4.1510	0.0385	0.0364
Golf course (+ sports precinct)	3	69.2962	0.6427	0.6073
TOTAL OPEN SPACE	385	1,406.7237	13.0471	12.3283

* Estimated residential population of 107,819

** Forecast 2009 population of 114,105

*** Semi-private facilities (lawn bowls, equestrian, croquet) used exclusively by single-purpose clubs

31.5 Table 7 shows there is an existing provision of 1,407 hectares (or 13.04 ha per thousand population) of Council-controlled open space in Ku-ring-gai. This is exclusive of the extensive natural areas within the Lane Cove, Ku-ring-gai Chase and Garrigal National Parks.

31.6 The majority (80%) of this open space is classified as 'natural area' and is primarily of regional significance. Only 177 hectares (or 1.65 hectares per thousand population) is developed open space of local and district level significance.

31.7 This relatively low provision of local/district scale open space is forecast (in the absence of any future open space acquisitions) to reduce to 1.55 hectares per thousand population by 2009.

31(b) Basis of Nexus

Existing recreation facilities

31.8 Ku-ring-gai's public open space system accommodates a range of recreation facilities - including outdoor sports courts and fields, golf courses and facilities for 'unstructured' play and recreation (including open grassed areas, picnic areas, playgrounds, bike tracks and walking paths).

31.9 Specific facilities include the following:

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- 334 park and open space areas
- 44 sports ground complexes (with 52 sport fields and 29 netball courts)
- 3 golf courses (one leased to a private club)
- 71 tennis courts (at 20 centres)
- 96 playgrounds
- One skateboard facility, and 5 basketball half-courts
- Several kilometres of walking tracks
- Several kilometres of off-road cycle tracks
- 1 aquatic centre (West Pymble Pool)
- 1 dirt bike facility at St Ives Showground (not available to the general public)
- A natural area interpretive centre (Ku-ring-gai Wildflower Garden).

Adequacy of existing open space and recreation facilities

The open space study undertaken in support of the S94 Contributions Plan 2000 – Residential Development addressed the adequacy of open space and recreation facility provision in 2000. Key relevant findings included the following:

Demand for open space and recreation facilities

- Ku-ring-gai's population structure suggests that, on a national comparative basis, the demand for open space and recreation facilities is likely to be relatively average
- Consistent with this, local surveys have identified the high popularity of open space related activities (such as 'walking', 'visiting parks' and 'bushwalking') and high levels of use of parks and open space
- Local surveys have also identified widespread demands for improved open space and recreation facilities – including more walking and bike tracks, large outdoor picnic/gathering areas, new and upgraded sports grounds (including 'family friendly' facilities), improved access to and within open space areas, greater diversity of playgrounds
- Local surveys have identified significant demand for improved indoor and aquatic recreation opportunities
- Local surveys have also identified demands for improved access to natural areas and protection/improvement of those areas (through improved stormwater control, catchment management and bush regeneration)
- Supply of open space and recreation facilities

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- Compared to accepted benchmarks, such as the long standing Department of Planning guideline (which established a minimum standard of 2.8 hectares/1,000 population), Ku-ring-gai has a relatively low provision of local and district level open space
- This is reflected in the relatively high proportion of households (34%) located beyond reasonable walking distance to a local park
- The low provision is also reflected in the high use of sports fields - many of which are used at full or near to full capacity

Conclusions on open space and recreation facility adequacy

- A large number of parks are very small and should be enlarged where their potential is strategically important and where enlargement opportunities are available
- As well, a large number of parks require further embellishments to more effectively meet the recreational needs and expectations of (existing and future) recreational users
- Council's local and district parks are not (in terms of both quantity and suitability) fully meeting the recreation needs of existing populations and do not have the capacity, therefore, to absorb the recreation needs and demands of new populations

Recent research findings

31.10 The key outcomes and findings of the recent research are summarised in

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Table 8.

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Table 8 - Open Space and Recreation Studies in Ku-ring-gai – Key Findings

Broad issue or need	Specific issue or need
Current supply and distribution of open space	<ul style="list-style-type: none"> • Ku-ring-gai LGA has a generous supply of environmentally significant open space. • The provision of sports grounds is comparative to the traditional standard • Sports grounds, however, are not able to be used at their maximum carrying capacities – due to social impact constraints associated with their use on Friday evenings and all day on Saturdays and Sundays • The provision of (non-sport) developed parks is very low according to traditional benchmarks • The distribution of these parks in the LGA is moderately uneven – with relatively low per capita provision in Roseville and Gordon • Despite this, Council's playgrounds (96 playgrounds at 91 sites) are reasonably well distributed throughout the LGA • A relatively high proportion (30%) of local parks are too small to facilitate the provision of a diversity of 'walk to' recreation opportunities • Due to these distributional and size characteristics, a significant minority of the population (35%) is not adequately serviced by high quality neighbourhood open space
Demand for new <i>major</i> facilities	<ul style="list-style-type: none"> • Additional sports fields and courts (athletics, baseball AFL, cricket, hockey, netball, soccer, softball, tennis) • More facilities for women's sport (eg hockey, netball, softball) • Indoor leisure centre and year-round swimming facilities
Demand for greater diversity of recreation opportunities within <i>existing</i> parks and open spaces	<ul style="list-style-type: none"> • More linkages – walking tracks and bicycle paths • Improved barbecue facilities, shade & toilet improvements in parks • More equipment in parks - opportunities for unstructured recreation for youth • Large group/family picnic opportunities (shelters, tables, seating) in major parks • More dog 'off-leash' areas • Integration of play and informal sports facilities with formal sports facilities • More commercial facilities in parks (kiosks)

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Broad issue or need	Specific issue or need
Demand for better quality facilities	<ul style="list-style-type: none"> • Sports ground upgrades (turf, drainage, fencing, amenities, floodlighting) at several grounds • Improved sports facility, playground and toilet maintenance • Playground upgrades – with more innovative play spaces • Improved park design/plantings • Walking track and signage improvements
Demand for environmental protection	<ul style="list-style-type: none"> • Protect and enhance the 'green' environment
Demand for more support services	<ul style="list-style-type: none"> • Improved access to open spaces and facilities (paths, signs, parking and co-location of facilities) • Improved information on available recreation activities and facilities • Improved accessibility – 'access for all' facilities at more public places and improved promotion of 'accessible' facilities • More low-cost opportunities (for families, seniors and young people) • Improved booking systems for sports facilities • More equitable allocation of sports facilities, • Improved lighting (for safety) in public places and ranger/police presence, and • Various forms of assistance from Council (low cost activities, access to facilities)

Future Open Space and Recreation Facilities

31.11 As summarised above, Council already provides a range of open space, recreation and leisure facilities. These are of variable quality and adequacy. While some facilities are adequately meeting needs, others require upgrading and/or diversification to meet the needs of the future population, and there are also demands for some new facilities (as indicated above).

31.12 Council has been addressing these issues through its annual relevant works programs – with open space and recreation facility provision and major improvement works undertaken since adoption of the 2000 S94 Plan including the following:

- Bannockburn Oval and Barra Brui Oval upgrades
- Vernon Street Village Green upgrade
- St Ives Village Green upgrade
- Queen Elizabeth Park – access works

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- Samuel King, Wellington and Turramurra Memorial Ovals - lighting upgrades
- Various tennis court refurbishments.

31.13 The recent Ku-ring-gai Open Space Strategy addresses the needs issues further and includes an action plan containing a range of initiatives including:

- Provide open space of sufficient quality to meet the recreation needs of the existing and forecast populations
- Ensure compatibility between open space uses and the uses of neighbouring land
- Continue to review the need for and, if necessary, an appropriate sites for a major indoor sport and/or aquatic facility in Ku-ring-gai
- Develop new sports facilities (for formal and informal sporting activities) in line with expected population growth and in accordance with demonstrated needs
- Ensure that all children have reasonable access to play facilities in open space areas
- Provide a diversity of age-appropriate play environments for children (and their carers) and youth
- Provide a range of facilities and amenities (toilets, shelters, play areas, picnic facilities, shelters) in accordance with management plans and site master plans
- Provide places of natural and landscaped beauty for quiet activities, solitude and other passive recreation activities
- Provide a diversity of informal recreation activities for all age groups
- Plan and manage Ku-ring-gai's open space as an integrated system with individual land parcels linked through landscape features, habitat corridors, water courses, pedestrian/cycle paths and 'park streets'
- Provide pedestrian and cycle paths in appropriate linear reserves
- Improve bicycle support facilities (on and off-road routes, signs, storage) and intra and inter-LGA links
- Provide night lighting in high use areas and strategic corridors (in accordance with Australian Standards)
- Increase access to environmentally significant areas while ensuring that access does not cause significant detrimental impacts to the environmental values of those areas

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Needs of New Population

- 31.14 Current population projections indicate that the population of Ku-ring-gai will increase up to 15% between 2004 and 2026. A 15% increase in the number of people means, other things being equal, a 15% increase in recreation demand. It means an additional 16,000 potential users of Council's recreation services by 2026 - many of whom are likely, in varying ways, to utilise Council's local and district open space resources. Between 2004-2009, this increase is estimated to be nearly 5,000 potential users.
- 31.15 Ku-ring-gai's population structure suggests that, overall, the demand for developed open space and recreation programs and facilities is likely to be average. The relatively low proportions of (high-participating) children and young adults and the high proportion of (low participating) older people (55+ years) will have a 'dampening' effect on demand. Offsetting this, however, are the higher participation effects of the high proportions of youth, couple families with children and high income levels and the relatively low levels of ethnic diversity in the community¹.
- 31.16 Having noted the above, it is also emphasised that population structures and recreation needs are not static. There will be ongoing local shifts in population size and structure and broader changes in recreation interests and expectations.
- 31.17 These shifts are evident in Ku-ring-gai. The population declined slowly over much of the past 15-20 years but has recently recommenced slow growth. There is also an expectation of substantial growth in the 50+ age groups and, with implementation of the Residential Development Strategy, acceleration of overall growth with possible associated changes in socio-economic structure.
- 31.18 Population shifts will occur most markedly in those areas affected by the Residential Development Strategy. These changes will require on-going monitoring to identify required changes in the quantity and mix of open space and recreation resources.
- 31.19 Additionally, as the existing population ages, leisure and recreation interests and capacities change – and this also has implications for the management and use of open space and recreation facilities and services.
- 31.20 These changes will cause changes in recreation demands and needs – but these changes are difficult to forecast. Key issues include the following:
- An aging population is normally associated with a trend to lower participation rates across most away-from-home sport and recreation activities (although there are exceptions to this, such as walking for pleasure)
 - The participation rates of aging people in the future may not decline in the same way as they have in the past due to increased health awareness, changing expectations and higher participation rates

¹ The under 20 age cohorts are typically the largest users of outdoor sport and recreation activities and the participation rates of 'culturally and linguistically diverse populations' have been found to be generally lower than those of Australian-born people.

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- If participation rates do decline with age, their impacts may be offset by other population shifts – such as the possible inflow of ‘high participating’ younger well-educated adults and children with implementation of the Residential Development Strategy.

31.21 The incoming RDS populations will contribute to the demand for open space and recreation facilities (including indoor and outdoor sport, passive recreation and aquatic facilities).

31.22 The assessments of existing open space and recreation facilities² provide the basis for assessing the likely facility requirements of these incoming populations.

31.23 These studies found that, in terms of quantity or quality or both, the currently available facilities are insufficient for existing populations – and will certainly not meet the additional needs generated by new development.

31.24 In particular, there is a need for more sports facilities (indoor and outdoor), higher quality sports facilities and a greater diversification of ‘unstructured’ recreation opportunities in parks. Other relevant needs are summarised in Table 9 according to the typical needs of the expected new resident age profiles.

² Including the *Ku-ring-gai Open Space Strategy*, the *Business Strategy for West Pymble Pool* and the *Tennis Court Facility Business Plan*

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Table 9 - Required open space and recreation opportunities x new resident age profile

Age profile	Age profile trends	Key activities	Open space and recreation needs
0-14 years	<ul style="list-style-type: none"> • Increasing numbers and proportions of children in all age groups 0-14 years between 1996 -2001 • 0-4 year olds were the fastest growing age group in the LGA • Most significant absolute increase was for 5-9 year olds 	<ul style="list-style-type: none"> • The recreation needs of children vary according to their age – but all require safe, familiar environments, multi-sensory stimulation, challenge, opportunities for creativity • The recreation of children in the 0-4 years age group primarily centres around the home, playgroups and small local parks with suitable play equipment • Children 5-12 years will also use local parks but less as they grow older if equipment is not challenging. Some will also play in streets, vacant lots, natural areas • Many will get more involved in community recreation and cultural activities – eg. visits to pools and libraries and participation in sport and/or cultural clubs and activities 	<ul style="list-style-type: none"> • Local and regional playgrounds and parks – with appropriate provision for both young children and adult supervision (seating, shade) and located near schools, shops and community centres where possible • Indoor recreation (sport, gym and dance) and swimming facilities (for recreation, fitness and motor learning skills) • Sports fields and courts • Safe cycle and pedestrian links between homes and parks
18-29 years	<ul style="list-style-type: none"> • The number and proportion of people aged 15–24 and 25-39 years declined significantly between 1996-2001 • The possibility of a reversal in the decline of young people aged 18-24 and 25-29 with the development of multi unit housing around railway stations 	<ul style="list-style-type: none"> • Young people, in general, have a high rate of participation in recreation – both structured and unstructured. In fact, participation by young people (up to 25 years) in most leisure and recreation activities – including organised sport and physical activities, social life and entertainment - is significantly higher than it is for older age groups • Youth-friendly public space and skate facilities are particularly important for young people not interested in structured activities • Participation in sport declines slightly after 25 years but is offset by higher participation in family activities as people commence having children 	<ul style="list-style-type: none"> • Sports fields and courts • Indoor sport and aquatic facilities • Fitness gyms and facilities • Cycle paths and walking trails • Large park and or natural area settings for picnics and social activities • Large park areas for informal play

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Age profile	Age profile trends	Key activities	Open space and recreation needs
40+ years	<ul style="list-style-type: none"> • Between 1996-2001 the number and proportion of adults aged 40+ increased • The greatest growth occurred in the 50-64 age group - the second fastest growing group in the LGA • In 2001 Ku-ring-gai LGA had above average and increasing numbers and proportions of people 65+ years • a significant proportion of older people are moving from larger family homes to medium density housing 	<ul style="list-style-type: none"> • Participation in structured sport and recreation activities declines steadily • Family recreation activities – such as visits to district scale parks – is popular for the 40 -55 age groups • Many less structured activities – walking, walking the dog, golf – remain popular through all age groups • People over the age of 55 years have a diversity of skills, interests and physical and mental abilities. Some will be regular users of 'mainstream' recreation facilities and programs. Others will require various levels of assistance – including transport, facilities designed and constructed in accordance with 'access for all' requirements and/or special programs and activities 	<ul style="list-style-type: none"> • Cycle paths and walking trails • Large park and or natural area settings for picnics and social activities • Swimming pools • Dog 'off leash' areas

31.25 As detailed above, there are 78 hectares of parkland³ and 107 hectares of sports fields and courts in Ku-ring-gai⁴. Based on the year 2004 estimated residential population (of 109,824 people), this amounts to 0.71 hectares/1,000 people of parkland (or 0.63 hectares/1,000 if the 'regional' scale components are excluded), and 0.97 hectares/1,000 of sports fields/courts - a total of 1.68 hectares/1,000.

31.26 The forecast RDS and other population increases between 2004 and 2009 will place additional demands on existing local and district open space facilities. In fact, in the absence of further acquisitions, the supply of open space is forecast to drop to 0.67 hectares/1,000 people of parkland, and 0.93 hectares/1,000 of sports fields by 2009.

31.27 But as identified in the supporting document for the S94 Plan 2000 – Residential Development and, more recently, in the Ku-ring-gai Open Space Strategy, the current provision of open space in the LGA is relatively low – particularly in some areas such as Roseville, Lindfield and Gordon. The additional demands of the new populations will therefore exacerbate existing demand pressures. In these

³ This includes 63 hectares of local and district scale parkland and 15 hectares of 'regional' scale open space (ie 9 hectares of the St Ives Showground - the areas not used for sport and/or leased to or used by specialist groups – and the non-sport components of the Ku-ring-gai Bicentennial Park)

⁴ This includes an 'allowance' of 4 hectares for the sports field facilities at St Ives Showground but does not include the 20-22 hectares of sports facility 'demand space' (lawn bowls, croquet, equestrian and motorised sports) in the LGA (more than half of which is within the St Ives Showground)

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circumstances many parks and spaces, due to their specific locations and/or capacities, will not be able to adequately cater to the increased demands.

- 31.28 In this context it would be desirable to acquire open space facilities at least at the current (relatively low) per capita levels of provision for the LGA as a whole - to both meet the reasonable demands of the new population and to maintain service standards for the existing population.
- 31.29 Accordingly, the existing supply of local and district open space in the LGA (ie 0.63 hectares/1,000 people of parkland and 0.97 hectares/1,000 of sports reserves) is considered the appropriate benchmark for determining additional open space requirements.
- 31.30 However, because of the very high cost of acquiring land in Ku-ring-gai, it is not considered reasonable or practicable to acquire open space at this level. As well, any land acquired also requires embellishment – also at substantial cost. The suggested alternative approach is twofold and entails the acquisition of ‘affordable’ quantities of new open space (comprising strategically important sites in accordance with performance criteria detailed in the Open Space Strategy) and substantial improvements, through appropriate embellishments, in the ‘carrying capacity’ of existing open space areas. This approach will still maintain contributions at a lesser level than would have been required should the desired benchmark for open space acquisition alone been applied.
- 31.31 Accordingly, with respect to acquisition, it is proposed to apply a 100% discount to the existing supply benchmark for sports fields and courts is proposed. That is no further acquisition will be required for land for sports fields and courts – rather existing facilities will be embellished to make them “work harder”.
- 31.32 With respect to parkland a policy of differential acquisition by precinct is proposed due to the unevenness of parkland distribution between precincts and the need to ensure that open space is acquired in those areas where it is most needed by new populations. The proposed differential acquisition is based on a ‘weighting factor’ which adjusts (that is, discounts) proposed acquisitions at the precinct level according to the deemed appropriate benchmark (of 0.63 hectares/1,000 people or 5.82m² per capita) and precinct differences in both the existing quantity and accessibility of open space.
- 31.33 For those precincts with lower than average quantities of space, the discounting should be less. This is because, in these precincts, there is less scope to meet the needs of new populations through the embellishment of existing open space (that is, there is less space in these precincts that can be made to ‘work harder’ through appropriate upgrading). Any discounting of the acquisition benchmark in these precincts, therefore, would have a greater negative impact on the open space needs of new populations.
- 31.34 Specifically, it is proposed not to discount those precincts - Lindfield and Gordon - with well under average provisions of open space. Precincts with marginally under average and/or poorly distributed space - Roseville, Killara, St Ives, Pymble and Wahroonga - are discounted by 25%. One precinct - Turramurra-Warrawee - with an above average supply and good distribution of space is discounted by 50%.

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31.35 The resulting precinct acquisition requirements ranged from 2.91m² to 5.82m² per capita – as illustrated in Table 10.

31.36 Killara and Pymble have significantly greater than LGA-average per capita quantities of parkland (7.01m² and 7.52m², respectively, compared to 5.82m² for the LGA). However, it is not appropriate to apply a larger than 25% discount to these precincts because of the very uneven distribution of parkland within both of them. In Pymble, for example, a large percentage of that precinct's parkland is part of Bicentennial Park. Large portions of the precinct – particularly in the areas to the north, east and immediate south of the Avondale Golf Course and to the south and north of the Pymble Golf course – have a very poor supply of parkland and any discount applied to the precinct would reduce the ability to meet the needs of future new residents in and/or adjacent to these areas.

Table 10 - Proposed Urban Park Acquisitions

Precinct	Existing open space supply			New open space required		
	Ha	Ha/ 1000	m ² / per capita	Deemed reasonable requirement	Discounted requirement	
				m ² per capita	WF (%)	m ² per capita
Roseville	4.7	0.48	4.79	5.82	75	4.37
Lindfield	4.47	0.38	3.77	5.82	100	5.82
Killara	8.59	0.7	7.01	5.82	75	4.37
Gordon	2.9	0.44	4.37	5.82	100	5.82
St Ives	10.62	0.56	5.58	5.82	75	4.37
Pymble	10.93	0.75	7.52	5.82	75	4.37
Turrumurra/ Warrawee	12.93	0.63	6.26	5.82	50	2.91
Wahroonga	7.51	0.59	5.86	5.82	75	4.37
TOTAL	62.65	0.58	5.82			

31.37 Both the land to be acquired and existing areas of open space will require substantial embellishment to adequately meet the needs of new users. The key requirement is to enhance their carrying capacity and extend their usability in order to 'compensate' for the reduced per capita quantum of open space.

31.38 The range of required embellishments include tree plantings, earthworks, water supply, fencing, lighting, circulation pathways, car parks, furniture (benches, picnic settings, barbecues, litter bins, shelters), bubblers toilets/amenities, signage, formal gardens, playgrounds and sports facilities.

31.39 The embellishment works proposed to increase the utility of existing open spaces – to make them 'work harder' are detailed in the following two sections.

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31(c) Proposed Facilities

31.40 Council has proposed a variety of embellishments and works to enhance the carrying capacity and usability of existing open space.

31.41 The projects include the following:

- walking track links
- more recreation facilities (picnic areas, walking tracks, playgrounds)
- upgrades to existing recreation facilities
- sports facility upgrades.

31.42 The works focus on increasing the capacity of existing open spaces and facilities to accommodate use through a range of relevant improvements (including multipurpose site layouts, new/extended equipment and enhanced accessibility).

31.43 In this way, the works can reduce the need for additional open space by getting existing spaces and facilities to 'work harder' to meet the recreation needs and demands of the incoming populations associated with new development.

31.44 The key projects are summarised in Table 1.

31.45 The projects are consistent with the findings of the Open Space Strategy and previous studies in identifying key needs. The projects are also consistent with the expected changing demographics of the LGA, that is, the emphasis on play grounds, walking and cycling facilities, family picnic areas and sports facilities is consistent with the needs of a population with the following characteristics:

- A growing population of children and young people (0-15)
- a growing population aged 40 and over
- a significant proportion of older people who are moving from larger family homes to medium density housing
- an influx of new families taking the place of these people in larger family homes and replacing older dwellings with new family homes
- the possibility of a reversal in the decline of young people aged 18-24; and 25-29 with the development of multi unit housing around railway stations.

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- 31.46 Finally, and perhaps most importantly, the projects also extend the 'carrying capacities' of a large number of parks within the RDS areas or within a reasonable travel distance⁵ of them.
- 31.47 The 'carrying capacities' will be enhanced through extending the number of usable hours (lighting and turf improvements), the 'hardening' of facilities (more constructed walking and cycle tracks), the expansion of facilities (larger play grounds, additional toilets, more shelters) and/or the provision of new facilities (picnic areas and recreation facilities – new play areas, chess tables, cricket nets and similar facilities).
- 31.48 This improvement in 'carrying capacities' is a critical requirement in meeting the needs of new populations in the context of the unavoidable decline in the quantum of per capita open space with implementation of the residential strategy.

31(d) Basis of Apportionment

Parkland Acquisitions

- 31.49 Land for parkland is to be acquired to satisfy the reasonable parkland open space requirements of the projected new population.
- 31.50 Given the relatively low provision of parkland open space in Ku-ring-gai (compared to the average for Sydney), these reasonable requirements are deemed to be the existing LGA wide per capita provision of parkland (0.63 hectares/1,000 people).
- 31.51 However, for affordability reasons, given that embellishment is also to be levied - as detailed in section 28(c), above – it is proposed that the acquisition requirement for parkland be according to the differential weighting factor detailed in Table 10.
- 31.52 The 'threshold' requirement for new development will therefore range between 2.91m² and 5.82m² per capita. On this basis, the anticipated new population of 4,998 persons will require an additional 2.3083 hectares of parkland. At the precinct level, the new requirement ranges from 0.1210 Ha in Roseville to 0.5296 Ha in Lindfield – as illustrated in Table 11. While Council will attempt to distribute the purchase of open space according to these requirements, practicalities may dictate that a more generalised spatial approach to acquisition is adopted.

⁵ 'Reasonable travel distance' is normally defined as up to 500 metres walking/cycling distance for small parks and a 5-10 minute drive for larger 'district scale' parks (ie those with picnic facilities, vantage points, high quality play facilities an/or specialist facilities such as children's bike tracks and dog exercise areas)

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Table 11 - Local open space acquisition requirements x precinct

Precinct	Pop increase (2004-9)	Land requirement		Cost \$/(m ²)
		Per capita (m ²)	Total (m ²)	
Roseville	277	4.37	1,210.49	\$1,580.00
Lindfield	910	5.82	5,296.20	\$1,630.00
Killara	575	4.37	2,512.75	\$1,420.00
Gordon	618	5.82	3,596.76	\$1,660.00
St Ives	541	4.37	2,364.17	\$1,500.00
Pymble	783	4.37	3,421.71	\$1,260.00
Turrumurra/Warrawee	667	2.91	1,940.97	\$1,400.00
Wahroonga	627	4.37	2,739.99	\$1,200.00
Total	4,998		23,083.04	

31.53 An Open Space Acquisition Strategy which is to be funded from development contributions was commissioned to identify priority sites for the acquisition program. This is required to ensure that the new open space is appropriately configured to most effectively meet the open space needs of new residents. The Strategy is currently in draft form and, once adopted, will be a core supporting document for the acquisition of open space supported by this Contributions Plan. The Draft Strategy indicates the acquisition priority areas as it is not possible or desirable in this situation to identify individual sites. Acquisitions will concentrate on Priority 1 and 2 areas

Parkland embellishments

31.54 The open space to be acquired may include new parks and/or extensions to existing parks, depending on opportunities. All acquired areas will require embellishment which, depending on the location, may include landscaping, plantings, park furniture, play and recreation equipment, pathways and public art.

31.55 The average cost to embellish the newly acquired parkland is \$140 per m².

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31.56 The needs of new populations are also to be met through the further embellishment of a significant number of existing open space areas. These embellishments will expand the carrying capacities of these areas with the key requirements including the following:

- The expansion of opportunities and 'hardening' of strategically important parks within or proximate to the RDS areas - in accordance with expected needs of the incoming populations
- Linking RDS areas to natural areas – with appropriately located pedestrian and/or cycle paths.

31.57 The upgraded parks – due to the type and quality of the proposed embellishments – are likely to attract 'drive to' as well as 'walk to' visitors. The 'flagship' parks (St Ives Village Green, Turramurra Memorial Park and Wahroonga Park) are likely to have an LGA-wide visitor catchment. The other parks proposed for embellishment are likely to have smaller catchment areas but still extending over two or more suburbs. Accordingly, the projects have been classified as 'southern area', 'northern area' or 'LGA-wide' projects according to their assessed visitor catchment (or benefit) areas. This is shown in Table 1.

31.58 The total estimated cost of the required parkland embellishments (including the walking track links) is \$4.2 million. Of this, nearly 50% (or \$1.98 million) encompasses LGA-wide projects, 20% (0.83 million) are 'southern area' projects and 33% (1.4 million) are 'northern area' projects. Because the embellishments are required to meet the additional needs of new residents, they have been 100% apportioned to new development.

Sports ground acquisitions and embellishments

31.59 Land for sports fields could also be required to satisfy the reasonable sports facility requirements of the projected new population. These requirements could be deemed to be the existing LGA wide per capita provision of 'sports reserve'.

31.60 The 'reasonableness' of this requirement is supported by the high use of these facilities – including the full utilisation of peak time capacity at most playing fields. However as detailed above, the existing LGA wide provision of sports reserve is 0.97 hectares/1000 people. Therefore, the additional sports reserve requirement for the five year projected population increase of 4,998 persons would be 4.848 hectares (or 9.7m² per capita). Given the extremely high land values in Ku-ring-gai and the difficulty of acquiring suitable large parcels of land, such a requirement would be an unreasonable burden on development.

31.61 Instead, in order to maintain the existing provision of sporting facilities to the year 2009, it is proposed to undertake stage 2 of the two sports field embellishment projects in the current S94 Plan (the North Turramurra Sports Field Development and reconfiguration of fields at Koola Park) and to upgrade a cross-section of other sports reserves – to make them 'work harder' - thus maintaining the contribution for sporting facilities to a reasonable level.

31.62 These upgrading projects are required to expand facility capacities to meet the needs of the new populations. The existing facilities are only sufficient to meet the

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needs of existing populations. The key requirements include sports turf improvements, irrigation, drainage, amenities, spectator facilities, parking and/or floodlighting. The costs of these embellishments have therefore been 100% apportioned to new development.

- 31.63 Twelve additional sports facility upgrading projects are proposed. These are well-distributed around the LGA and all have LGA-wide catchment areas. The total estimated cost of these projects is \$6.589 million – which translates to \$1,318 per capita for the anticipated new population of 4,998 persons.

West Pymble Pool upgrade

- 31.64 Contemporary swimming opportunities are required by both the existing and incoming populations. Council has considered a number of proposals upgrade the pool complex to meet the needs of existing and future population. The cost of the current proposed centre upgrade – comprising substantial improvements to the facility - is \$10.9 million.

- 31.65 To ensure that the incoming population only pays for its share of the total demand it is considered reasonable that new development contributes at an equivalent rate to this as the new population – because existing and new residents will be equal beneficiaries of the upgraded centre. Therefore the cost of upgrading this facility is apportioned between existing and new residents in direct proportion to their relative numbers. The facility is planned to meet the needs of the population over the longer term planning horizon. It may be implemented in stages.

SECTION C3: TRAFFIC, PEDESTRIAN AND CYCLEWAY FACILITIES AND PUBLIC DOMAIN IMPROVEMENTS

32. Overview of proposed facilities and services

32.1 The proposed traffic, pedestrian and cycleway facilities and services are as follows:

Traffic Management Improvements and Road Safety Improvements

Pedestrian Facilities

Cycleways

Public Domain Improvements including

- Shopping Centre Improvement Program
- Roadway Lighting and
- Street Trees
- Public Domain Study

Traffic Studies

32(a) Factors Affecting Supply

32.2 Ku-ring-gai LGA's population is presently serviced by an existing movement system which may be regarded as an asset. The amenity and overall level of service provided by this asset reduces progressively as a consequence of both age and the increased traffic generated by new development.

32.3 Therefore, in order to ensure that levels of service do not deteriorate, in addition to normal maintenance (which is not included in S94), it is essential that new development contribute to additional works and facilities as appropriate and help to progressively replace the asset. These works and facilities include measures required to maintain or improve road capacity, road safety, accessibility and amenity, as population increases and the number of vehicles using Ku-ring-gai's roads increase. In addition, given the aims of urban consolidation in the Stage 1 RDS Areas to reduce car usage, the facilities may relate to vehicular, pedestrian any bicycle movement.

32.4 The implementation of Stage 1 of the RDS will concentrate future development along the Pacific Highway-railway spine corridor and at St Ives. Consequently the need for additional transport works generated by new development will be focussed in these areas.

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32(b) Basis of Nexus

32.5 The demand for the provision of traffic and transport facilities has been determined as follows:

- by assessing the existing movement network to identify existing deficiencies which require addressing to meet the needs of existing and future development
- by assessing the need for additional facilities that will be required in response to additional demands created by future development.

32.6 In general terms, existing deficiencies across the transport network relate to existing demands and these deficiencies cannot be funded under Section 94. However, to the extent that these deficiencies may be further exacerbated by new development, then this development contributes to a further deterioration in conditions and therefore should be assessed for inclusion in the Section 94 Plan.

32.7 It is notable that at the community consultation held during the preparation of the S94 Plan, facilities for adequately meeting the traffic, parking, cycleway, footpath and movement infrastructure needs of new development were considered the second highest priority area of need.

32.8 In October 2002, Council adopted a Traffic and Transport Policy in recognition of the importance of traffic and transport issues in Council's current management plan. Council has also endorsed a long term plan for managing traffic on Council's roads. This plan identified criteria adopted by Council in prioritising works required to meet existing and future needs.

32.9 Consistent with these policies, Council has identified a schedule of works required to meet existing and predicted future needs. Some of these works are incorporated into Council's 5 year works program.

32.10 In determining a development application, Council may impose a condition allowed under Section 80A(1)(f) of the EP&A Act requiring off-street traffic and pedestrian works to be undertaken. These works might relate to improvements to footpaths of carriageways in the vicinity of the site as a direct consequence the development. The works in the work schedule to this plan are in addition to any works required as a condition of development consent. Works required to be undertaken in fulfilment of a condition of development consent, other than a condition imposed under S94, will not be considered as works in kind.

32(c) Proposed Facilities

32.11 Improvements have been assessed in various categories as follows. It will be evident that many of the proposals have several benefits that span different categories. For example, many of the traffic management proposals have related road safety and pedestrian benefits etc. In this case the improvement has been included in the category that serves its primary objective.

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Traffic Management Improvements and Road Safety Improvements

- 32.12 Consistent with Council's Traffic and Transport Policy and long term plan for managing traffic on Council's roads, Council officers have identified work required to improve road safety and to improve traffic flows. These are listed in Appendix 1. These works have been identified based on a series of investigations into traffic conditions, analysis of accident data and inspection of sites. Council intends to undertake capital works to improve traffic flows and road safety to meet the needs of existing and future development as envisaged under Stage 1 of the RDS.
- 32.13 Council has identified needs over the next 5 years based on its expected capital works program. While needs substantially exceed those identified, Council's ability to contribute matching resources where the cost of facilities is apportioned, limits the facilities which have been included in the plan. Individual works items included in Appendix 1 may change as a result of changing priorities or funding availability.
- 32.14 It is recognised that some traffic works will be undertaken as a condition of development consent of the type allowed under Section 80A(1)(f) of the EP&A Act. The works identified for this plan are works that are not related to a specific development proposal.
- 32.15 The investigations into road safety undertaken were not conducted as formal road safety audits. Such audits may be undertaken in the future. In addition Council is undertaking additional traffic investigations and analyses. Any additional needs identified through these investigations may require an amendment to the work schedule in this S94 Plan.
- 32.16 Works identified relate to Council roads only. Required upgrading to intersections with RTA managed roads are not included in the S94 Plan, as Council is not responsible for funding such improvements. If subsequent investigations indicate the requirement for a contribution to the cost of such works to meet the needs of new development, an amendment to the S94 Plan may be required.

Pedestrian and Bicycle

- 32.17 A long term strategy for improvements to footpaths and cycleways has been identified by Council in a similar manner to the traffic and road safety improvements, and are also listed in Appendix 1. It will be noted that off-street cycleway and pedestrian facilities are included in the open space section of this Plan.
- 32.18 Pedestrian improvements relate to the provision of new footpaths in areas where none already exist.
- 32.19 Council has identified needs over the next 5 years based on its expected capital works program. While needs substantially exceed those identified, Council's ability to contribute matching resources where the cost of facilities is apportioned, limits the facilities which have been included in the plan. Individual works items may change as a result of changing priorities or funding availability.

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Other Public Domain Improvements

- 32.20 The streets of Ku-ring-gai are an important recreational resource and are a key element of the movement system. This is particularly so in the existing centres where pedestrian activity is related as much to recreation as to movement and access. Improvements can be made to all streets within the LGA. However for the level of contribution and committed works programme to be reasonable, the works need to be prioritised.
- 32.21 Emphasis is given in this plan to improvements to shopping centres, street lighting and street trees. These works are in addition to the footpath and cycleway improvements outlined above.
- 32.22 Council is considering the identification of a programme of further public domain improvements to accommodate growth associated with Stage 1 and Stage 2 of the RDS. Council will be undertaking a public domain investigations to identify works to improve the public domain as a consequence of implementation of Stage 1 and Stage 2 of the RDS. Subsequent plans or amendments to this plan may identify additional improvements to the public domain to accommodate the street based recreational and movement requirements of new residents.

Shopping Centre Improvements

- 32.23 Residential development will generate additional trips to existing shopping centres requiring works to upgrade existing pedestrian systems in centres, to improve street furniture and the like. Council proposes to spend in the order of \$185,000 per annum on such works over the life of the plan. While needs substantially exceed those identified, Council's ability to contribute matching resources where the cost of facilities is apportioned, limits the facilities which have been included in the plan. These works will benefit all residents of the LGA who will visit the existing centre.

Roadway Lighting

- 32.24 Roadway lighting has been identified by Council officers as requiring improvement within and around all centres. This has been assumed to incorporate lighting within the vicinity of existing shopping centres to improve safety for those using the streets. The lighting upgrade does not only relate to pedestrian access to stations, but also to movement within the centres generally and the use of streets as a recreational resource.
- 32.25 It has been assumed that the lighting in all local streets within 500 metres distance of the centres would be upgraded by the provision of an additional pole and luminaries on one side of the street at an interval of 80 metres, thereby resulting in a lighting interval of 40 metres when account is taken of existing luminaries.
- 32.26 These lighting improvements will be of benefit to existing and future residents.
- 32.27 Expected expenditure over the next 5 years is included in the works schedule.

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Street Tree Planting

- 32.28 Council implements a program for street tree planting to replenish and extend the street tree canopy. The program will benefit existing and future residents. Expected expenditure over the next 5 years is included in the works schedule. The money will be spent in accordance with the street tree planting program. This program will provide trees over and above any street trees required as a condition of development consent or provided as part of a development.

Underground Power

- 32.29 Council intends to institute the undergrounding of power lines within the LGA wherever possible on environmental and aesthetic grounds.
- 32.30 While it has not been possible to incorporate undergrounding power into this S94 Contributions Plan at this stage, it will generally be a condition of approval that developers are required to pay for undergrounding of power in the vicinity of their development.
- 32.31 This initiative will further increase the value of the public domain as a leisure and recreation resource for new residents, and is considered particularly important in RDS Areas to increase the use and vitality of streets as a supplement to traditional forms of open space.

Traffic Studies

- 32.32 Council is undertaking or has undertaken a number of studies into traffic and parking in order to identify the works required to meet the needs of the expected population associated with Stage 1 of the RDS.
- 32.33 Council is proposing to undertake an update of the Traffic and Transport Base Study prepared by GHD in 2000 to identify in detail the demand for traffic management measures associated with Stage 1 of the RDS.
- 32.34 Additional studies will be undertaken in the area of public domain improvements.

32(d) Basis of Apportionment

- 32.35 Apportionment of costs for the above traffic, pedestrian and cycleway facilities has been determined on the basis of those who will benefit from the works. Consequently the costs have been apportioned over the total population over the life of the plan.

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SECTION C4: ADMINISTRATION

33. Overview

- 33.1 The earlier parts of this plan have demonstrated that the new incoming population of Ku-ring-gai LGA will need improvements and additions to facilities and services of a variety of types which are not currently available.
- 33.2 S94 provides the mechanism by which contributions can be collected to provide these. However the administration of a S94 Plan requires resources which otherwise would not be devoted to this purpose. Since these would not be required if a S94 Plan was not to be put in place, they are directly attributable to new development.
- 33.3 The needs which have been identified in this regard are:
- preparation of Council's S94 Plan and amendments to the plan
 - a S94 Officer to implement the plan.

34. S94 Plan

34(a) Factors Affecting Supply

- 34.1 Planning studies which establish a comprehensive approach to the administration of S94 and which are outside of the daily work undertaken by Council can be funded through contributions. Only the costs of studies which directly result in a Contributions Plan can be included in S94 charges.

34(b) Basis of Nexus

- 34.2 As work was undertaken with the specific intention of preparation of a S94 Plan and amending this plan, and would not otherwise have been undertaken by Council, then the cost of preparing the study and plan can be directly and fully attributed to S94.
- 34.3 This Contributions Plan was prepared specifically for the purposes of enabling contributions to be levied where the anticipated development is considered likely to increase the demand for facilities and services. The costs of preparing the plan and its amendment includes a range of studies specifically related to the plan preparation, legal advice on the plan and land valuations used in the plan and in contribution rate adjustments.

34(c) Proposed Facilities

- 34.4 The proposed facility is the cost of preparation of the S94 Plan and the cost of amending the plan and indexing the plan.

34(d) Basis of Apportionment

- 34.5 In view of the above, 100% of the cost of the Contributions Plan and its amendments are proposed to be met by new development.

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35. S94 Officer

35(a) Factors Affecting Supply

- 35.1 The management of the Development Contributions system requires significant Council resources including the employment and training of a S94 Officer to administer the Contributions Plan.
- 35.2 Council needs to employ and train resources to prepare and review the Contributions Plan. Tasks to be undertaken include and monitoring plan implementation in terms of moneys contributed and rates of development, responding to legal precedent, reviewing legislative changes, monitoring reviews and indexing, managing consultants and the like. This involves a range of skills and divisions in the organisation.

35(b) Basis of Nexus

- 35.3 A full-time S94 officer is not currently employed, although Council has employed a S94 Accounting Officer. The role of the S94 staff will continue to be needed throughout the life of this plan to ensure the effective and accountable implementation of S94 Development Contributions systems.

35(c) Proposed Services

- 35.4 The making and implementation of a S94 Plan is considered a serious responsibility, under which Council must undertake to expend the funds collected in a reasonable time and in accordance with the Plan. New requirements which have been instituted since the last plan was put into place require increased accountability and transparency. There is an on-going need for continuing professional development in order to respond to new legislation and changes in S94 procedures and practices.
- 35.5 To meet these responsibilities, Council prepares a Ten Year Financial Model which analyses funding capability for S94 projects. The preparation and maintenance of material for this model requires expertise outside that of normal planning officers. This necessitates an officer of Council to change from existing duties to administration of the Plan.
- 35.6 In the case of some facilities, there may also be significant further consultation, planning and discussions required to ensure that the design and modifications to facilities meet the needs of potential users, and that existing services can continue to operate while upgrading occurs.
- 35.7 It is envisaged that this position will be a full time position within Council for the life of the Plan, including standard on-costs associated with establishment and maintenance of the position. Alternatively, part of the role of a Section 94 Officer can continue to be undertaken on a consultancy basis or the role can be undertaken by existing staff of the Council.

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35(d) Basis of Apportionment

35.8 The need for a S94 Officer is generated only by the existence of the Contributions Plan. Therefore 100% of the equivalent cost of a full-time officer and on-costs is to be met by new development.

Contributions Rates Calculation

36. How is the contributions rate calculated?

36.1 The contributions rate for each residential development is calculated by adding the contribution for each facility or service determined as per the formulae in Section 7.

36.2 The relevant populations contributing to the various facilities or services are shown on Table 2. This table shows the contribution for different precincts or parts of the LGA, as shown on Figure 1.

36.3 To convert these rates to a contribution per dwelling, the following bedroom occupancy rates have been derived from the 2001 ABS Census.

Table 12: Average Occupancy Rates per Dwelling, Ku-ring-gai LGA

Dwelling Size	No persons/ dwelling ⁶
Bedsit and 1 bedroom dwelling	1.27
2 bedroom dwelling	1.78
3 bedroom dwelling	2.56
4 bedroom dwelling	3.33
5 bedroom dwelling	3.88
SEPP (Seniors Living) Housing	1.3
New Lot Subdivision ⁷	3.48

36.4 “bedroom” means, for the purposes of this Contributions Plan, any room which, in the opinion of Council, is, by its physical design, capable of being used as a bedroom. Separately accessible rooms designated a bedroom, study, studio, den, attic, home office, home theatre or the like, including in some circumstances partially enclosed mezzanine levels, may be classified as bedrooms for the purposes of this plan. If a room is called a “study” and it is capable of being used as a separate room, it will be defined as a bedroom i.e. a unit described as a one bedroom plus study is a two bedroom dwelling for the purposes of this contributions plan unless the study is, by virtue of its design, incapable of being used as a bedroom.

37. What is the staging of facilities and services to be provided?

37.1 The anticipated timing of provision of the identified facilities and services is shown on Table 2. This may be subject to change dependent on availability of matching

⁶ Occupancy rates derived from ABS 2001 Census – No. Bedrooms Private Dwelling by Summation Options, Ku-ring-gai LGA

⁷ Occupancy rates for new lot subdivisions based on average occupancy for 4 and 5 bedroom dwelling, being the typical size of dwellings constructed on new lots.

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funds, changing priorities and other factors. Hence, it should be considered indicative. In some cases works will be undertaken when population thresholds are reached.

37.2 The estimated timing of provision of facilities will be updated in Council's Ten Year Financial Model. This will be available for public scrutiny throughout the life of the plan.

38. What is the priority for facilities and services to be provided?

38.1 Table 2 also provides an indication of priorities for expenditure. It is intended that these priorities will be followed in the event that funds are pooled. These priorities are subject to change based on Council priorities and rates of development in different parts of the LGA.

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PART D : SUPPORTING DOCUMENTS

39. What resource, statistical and support material is relevant?

39.1 The Ku-ring-gai contributions plan is based on various studies, plans and policies which have been undertaken and/or adopted by Ku-ring-gai Council. Relevant documents which support this plan include:

- Ku-ring-gai Council Section 94 Community Facilities Background Report (2004)
- Ku-ring-gai Council Section 94 Recreation/Open Space Background Report (2004)
- Ku-ring-gai Social Plan 2000
- Child Care Services Plan (1995)
- Access and Equity Policy (1997)
- Public Art Policy (1997)
- Disability Discrimination Act Plan (1998)
- Demographic Profile of Ku-ring-gai (1998)
- 1989 Recreational Needs Survey
- 1999 Leisure Needs Survey
- 1999-2002 Management Plan
- Traffic and Transport Base Study (GHD) (2000)
- Parking Study (GHD) (2001)
- Ku-ring-gai Council Traffic and Transport Policy
- Long Term Plan for Managing Traffic adopted by Council on 3 June 2003

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Appendices

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Appendix 1

Transport Works

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Transport Works

TRAFFIC MANAGEMENT AND ROAD SAFETY IMPROVEMENTS

Traffic Management Improvements (RDS Area)

1. Fox Valley Rd at Ada Ave - Kerb blisters on Fox Valley Road to increase deflection.
2. Kylie Ave at Northcote Ave - Channelisation at intersection
3. Werona Ave at Greengate St - Seagull islands on side streets
4. Werona Ave at Locksley St - Median islands in Werona Avenue
5. Werona Ave at Robert St - New traffic signals
6. Balfour St at Bent St - Channelisation at intersection
7. Grosvenor Rd - Reconstruct footpath at bus stop
8. Hill St at Victoria St - Channelisation incorporating pedestrian facility
9. Lindfield Ave at Tryon Rd - New traffic signals
10. Nelson Rd - Install traffic calming treatments
11. Ayres Rd at Mona Vale St - Widen roadway to permit two lanes on exit from Ayres Road
12. Horace St at Stanley St - Install/modify splitter islands to better accommodate pedestrians
13. Killeaton St at Cowan Rd - New signals
14. Station St at Hope St - Channelisation at intersection
15. Woodbury Rd - Install traffic calming treatments

Traffic Management Improvements (Outside RDS Area)

16. Fox Valley Rd at Amaroo St - Roundabout/Channelisation - further investigation required
17. Yanko Rd at Kooloona Cr (north) - Channelisation/Intersection improvements - further investigation required
18. Yanko Rd at Lofberg Rd - Channelisation/Intersection improvements - further investigation required
19. Yanko Rd at Yarrara Rd - Channelisation/Intersection improvements - further investigation required
20. Yanko Rd at Congham Rd - Channelisation/Intersection improvements - further investigation required
21. Lady Game Dr at De Burgh Rd - RT bay on Lady Game Drive
22. Lady Game Drive at Bowes Ave - Seagull island on side street - further investigation required

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23. Chelmsford Ave at Mcleod Ave - Roundabout/Channelisation - further investigation required
24. Sydney Rd at Woodlands Rd - Roundabout
25. Eastern Arterial at Burraneer Ave (north) - Channelisation Requires further investigation
26. Eastern Arterial Rd at Barra Brui Cr - Install extended length of raised median
27. Yarrabung Rd at Catherine St / College Cr - Roundabout/Channelisation - further investigation required
28. Burns Rd at Westbrook Ave / Ancona Rd – Channelisation/intersection improvements.
29. Burns Rd at Hampden Rd – Channelisation/intersection improvements.
30. Eastern Rd at Braeside St – Channelisation/intersection improvements.
31. Eastern Rd at Kintore St – Channelisation/intersection improvements.
32. Eastern Rd at Tennyson Ave - Channelisation/intersection improvements.
33. Junction Rd at Wahroonga Ave - Channelisation/intersection improvements.

Road Safety Improvements (RDS Area)

34. Fox Valley Rd at Roland Ave - Roundabout incorporating pedestrian facility
35. Gilroy Lane - Widen footpath and undertake study of feasibility of introducing a shared zone treatment
36. Arthur St at Kylie Ave / Elva Ave - Roundabout incorporating pedestrian facility
37. Khartoum Ave at Werona Ave - Pedestrian refuge at Khartoum Avenue
38. McIntosh St at Arthur St - Roundabout incorporating pedestrian facility
39. Park Ave at Werona Ave / Pearson Ave - Ped refuges/kerb blisters at marked crossings
40. Park Ave at Rosedale Rd - Roundabout, incorporating Memorial as a central island
41. Powell St at Karranga Ave / Wattle St - Correct adverse crossfall through intersection
42. Rosedale Rd at Nelson St - Extended refuge incorporating ped crossing and splitter island at roundabout
43. Rosedale Rd at Robert St - Roundabout incorporating pedestrian facility
44. Spencer Rd at Calvert St - Roundabout incorporating pedestrian facility
45. Stanhope Rd at Nelson Rd - Roundabout incorporating pedestrian facility
46. Stanhope Rd at Springdale Rd - Roundabout incorporating pedestrian facility
47. Wade Lane - Widen footpath and undertake study of feasibility of introducing a shared zone treatment
48. Werona Ave at Railway Underpass - Roundabout incorporating pedestrian facility

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49. Werona Ave at McIntosh St - Roundabout incorporating pedestrian facility
50. Chapman Lane - Flat top threshold with marked footcrossing at Lindfield Arcade
51. Hill St at Lord St - Flat top threshold with marked footcrossing at Lindfield Arcade
52. Kochia Lane - Widen footpath between Lindfield Avenue and Chapman Lane
53. Lindfield Ave at Woodside Ave - Roundabout incorporating pedestrian facility
54. Lindfield Ave at Russell Ave - Pedestrian refuge
55. Provincial Rd at Cook Rd - Roundabout incorporating pedestrian facility
56. Roseville Ave at Hill St - Pedestrian refuge
57. Shirley Rd at Glen Rd - Roundabout incorporating pedestrian facility
58. Grandview St at Station St - Roundabout incorporating pedestrian facility
59. Link Rd at Killeaton St - Median island treatment at intersection
60. Telegraph Rd at Station St - Pedestrian refuges/channelisation
61. Bannockburn Rd at Rushall St – Roundabout/intersection treatment incorporating pedestrian facility
62. Bannockburn Rd at Selwyn St - Intersection improvements
63. Billyard Ave at Young St - Roundabout incorporating pedestrian facility
64. Bobbin Head Rd at Berrillee St / Rushall St - Roundabout incorporating pedestrian facility
65. Burns Rd at Grosvenor St / Cleveland Rd - Roundabout at Burns/Grosvenor and channelisation at Burns/Cleveland
66. Cleveland St at Stuart St - Roundabout incorporating pedestrian facility
67. Cleveland St at Billyard Ave - Roundabout incorporating pedestrian facility
68. Eastern Rd at Karuah Rd - Roundabout incorporating pedestrian facility
69. Eastern Rd at Bangalla St - Roundabout incorporating pedestrian facility
70. Ku-ring-gai Ave at Boomerang St - Roundabout incorporating pedestrian facility
71. Millewa Ave at Cleveland St - Roundabout incorporating pedestrian facility
72. Redleaf Ave at Railway Ave - Roundabout incorporating pedestrian facility

Road Safety Improvements (Outside RDS Area)

73. Pentecost Ave at Merrivale St - Roundabout
74. Pentecost Ave at Bannockburn Rd - Roundabout
75. Burns Rd at Bobbin Head Rd - RT arrows/bays in Burns Road/Bobbin Head Road

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76. Eastern Rd at Chilton Pde - Roundabout
77. Billyard Ave at Mona St – Roundabout/intersection improvement
78. Burns Rd at Clissold Rd - Install new seal on poor surface
79. Eastern Rd at Billyard Ave - Roundabout
80. Tennyson Ave at The Chase Rd - Roundabout/Speed reduction measures in The Chase Road
81. Burns Rd at Ellalong Rd - Intersection improvements at curve
82. Burns Rd at Bedford Ave - Intersection improvements at curve
83. Burns Rd at Trentino Rd - Restrict turning movements/intersection improvements
84. Eastern Rd at Trentino Rd – Roundabout/intersection improvements
85. Burns Rd at Eastern Rd - Improvements to signalised intersection
86. Junction Rd at Grosvenor St - Improvements to roundabout / construct kerb blisters and ped refuge treatment in Junction Rd
87. Bobbin Head Rd at Pentecost Ave / Boomerang St - RT arrows/bays in Bobbin Head Road
88. Bobbin Head Rd at Milton Rd - Roundabout
89. Junction Rd at Coonanbarra Rd - Improvements to roundabout
90. Junction Rd at Eastern Rd - Improvements to signalised intersection
91. Douglas St at Acron Rd - Roundabout
92. Warrimoo Ave at Dalton Rd - Roundabout
93. Yarrabung Rd at Stanley St - Roundabout
94. Telegraph Rd at Ganmain Rd - Roundabout
95. Killeaton St at Benaroon Ave - Intersection improvements
96. Horace St at Hunter Ave / Eucalyptus St - Improvements to roundabout
97. Acron Rd at Woodbury Ave - Roundabout
98. Killeaton St at Acron Rd - Intersection improvements
99. Killeaton St at Carbeen Ave - Intersection improvements
100. Killeaton St at Warrimoo Ave - Intersection improvements
101. Collins Rd at Toolang Rd - Roundabout
102. Killeaton St at Collins Rd - Intersection improvements - further investigation required
103. Melbourne Rd at Allambie Ave / Adelaide Ave – Roundabout/intersection improvements

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104. Melbourne Rd at Wellington Rd – Roundabout/intersection improvements
105. Archbold Rd at Chelmsford Ave - Seagull islands on side streets
106. Archbold Rd at Margaret - St - Intersection improvements
107. Archbold Rd at Bancroft Ave - Intersection improvements
108. Archbold Rd at Addison Ave - Improvements to signalised intersection
109. [Deleted]
110. Addison Ave at Moore St - Roundabout
111. Archbold Rd at Duntroon Ave - Seagull islands on side streets
112. Duntroon Ave at Moore St - Roundabout
113. Archbold Rd at Middle Harbour Rd - Seagull islands on side streets
114. Archbold Rd at Lord St - Intersection improvements
115. Lady Game Dr at Provincial Rd - Intersection improvements
116. Archbold Rd at Tryon Rd - RT arrows/RT bays in Tryon Road
117. Archbold Rd at Roseville Ave - Intersection improvements
118. Archbold Rd at Park Ave - Intersection improvements
119. Archbold Rd at Dudley St - Intersection improvements
120. Archbold Rd at Owen St - Intersection improvements
121. Lady Game Dr at Grosvenor Rd - Improvements to roundabout
122. Lady Game Dr at Highfield Rd / Moore Ave - Improvements to roundabout
123. Highfield Rd at Primula St - Roundabout
124. Park Ave at Moore St - Roundabout
125. Eastern Arterial Rd at Koola Ave - Improvements to signalised intersection
126. Eastern Arterial Rd at Springdale Rd - Restrict turning movements - further investigation required
127. Koola Ave at Churchill Rd - Intersection improvements
128. Lady Game Dr at Fiddens Wharf Rd - Improvements to roundabout - further investigation required
129. Eastern Arterial Rd at Fairlight St - Intersection improvements - further investigation required
130. Rosebery Rd at Koola Ave / Wattle St - Improvements to roundabout - further investigation required

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131. Maxwell St at Geoffrey St – Roundabout/intersection improvements
132. Comenarra Pwy at Fox Valley Rd - RT arrows/bays in Comenarra Parkway
133. Kissing Pt Rd at Catalpa Cr (south) - Roundabout/intersection improvements
134. Lucinda Ave at Eastbourne Ave - Roundabout/intersection improvements
135. Yanko Rd at Kendall St - Improvements to roundabout - further investigation required
136. Fox Valley Rd at Lucinda Ave - Improvements to roundabout - further investigation required
137. Yanko Rd at Wallalong Cr (north) - improvements to signalised intersection - further investigation required
138. Yanko Rd at Wallalong Cr (south) - Restrict turning movements
139. Fox Valley Rd at Stone Ave - Improvements to ped x'ing approaches/skid resistance - further investigation required
140. Comenarra Pwy at Ravenhill Rd - Delineation around curve - further investigation required

Pedestrian Networks (RDS Area)

141. Tryon Rd - Extension of footpath across front of church property Ref 88/5805/01
142. Werona Ave - Adjacent to Nos 83/85 No 83 10/86
143. Bangalla St at Warrawee Ave to No 31 - northern side (to eliminate ponding of water)
144. Drovers Way at Beaconsfield Pde to northern end (to complete) - 134m
145. Werona Ave - Footway west side from Stanhope to Arnold
146. Everton St - Adjacent to No2-52m2
147. Arnold St - Footway north side Werona to Locksley
148. Woonona Ave at Pacific Highway to Warwilla Ave - western side - reconstruction in asphalt - 300
149. Memorial Ave - Footway near No 65 and remove trees
150. Nelson Rd - No 9 to Tryon Rd east side
151. Shinfield Ave at Mona Vale Rd to Pildara Ave - south side
152. Boyd St at southern side Jersey to Kissing Point Road
153. Illoura Ave - Footway on west side north from Stuart - 88/2915/01

Pedestrian Networks (Outside RDS Area)

154. Lady Game Drive at Fiddens Wharf Rd to crossing at No 57 north side
155. Eppleston Pl - full length No 1 5/87

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156. Kendall St at Ryde Rd to Grayling St No 14 1/90
157. Bent La - Extend narrow footway Balfour St to Bent St 88/6275/03
158. Auluba Rd at Kissing Point Rd to Kindergarten south-eastern side 171m²
159. Auluba Rd - north side from Chisholm St to Balmaringa Ave
160. Mona Vale Rd at Bundabah Ave to Woodbury Rd - western side
161. The Comenarra Pwy at Fox Valley Rd to Browns Rd - northern side - 780m No 39 Browns Rd 3/76
162. Mona Vale Rd at Woodbury Rd to Ayres Rd - western side No 322 Mona Vale Rd 5/89
163. Link Rd at Mona Vale Rd to Stanley St - 2 metre c'way
164. Kiparra St - footway Pee Wee Park to Kooyong
165. Kiparra St - footway Pee Wee Park to Ryde Rd
166. Norfolk St - footway Essex to Cecil north side
167. Duneba Ave - shops to Kiparra St
168. Kulgoa Rd - footway east side Cameron to Richmond Park
169. Warrington Ave - Existing path in Koola Ave to northern end - 420m No 2 Harcourt St 1/83
170. Ayres Rd at Mona Vale to Acron Rd - southern side - 664m² No 46 4/75; No 44 3/75
171. Bobbin Head Rd - Huon Park to school east side
172. Boundary St - Construct pedestrian ramp where steps currently exist opposite Archer
173. Glencroft Rd at Bencroft Ave to Lord St - eastern side - 140m
174. Cherry St - footway over rail bridge
175. Crana Ave at Allambie Ave to Ormonde south-eastern side
176. Bobbin Head Rd at Leura Cr to Lady Davidson Hospital entrance
177. Eucalyptus St from existing path to eastern Arterial Rd - southern side - 330m No 5 Susse
178. Mt Pleasant Ave - Footway south side from existing to retirement village - 88/4200/01
179. Binalong St - Footway one side from grayling to shops - 88/0700/01
180. Murrua Rd - Senior citizens centre to Bobbin Head Rd - south western side - petition 62
181. Merriwa St - North west side from pacific Highway to Fitzsimons Lane construction of conc
182. Coonanbarra Rd from Woniora Ave to Burns Rd - western side - 160m² total reconstruction ref 8
183. Eastern Arterial Rd - south of Burraneer Ave - 130m No 78 10/77

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184. inlay Rd at Pacific Highway to Denman St - south eastern side Warrawee school
185. Romney Rd at Toolang Rd to opposite Shelby St, eastern side - 496m2 No 19 hillside Ave 7/7
186. Blytheswood Ave - Low level footway, northern side at school
187. Burns Rd - westerly from Eastern Rd - northern side No 92 11/88
188. Congham Rd - Nos 18/20 Wallalong Cr, south eastern side to complete - 346m2 No 4 8/72
189. Randolph St (Lane) - Complete laneway to Billyard Ave
190. Ada Ave at The Glade Walk to Tanderra St - western side No 21 12/89
191. Grandview St from existing path at No 23 to Mona Vale Rd No 17 2/83
192. Archbold Rd - Lowering of footpath / nature strip area adjacent to Nos 33&35
193. Junction Rd at Eastern Rd to Wahroonga Ave, south side - 550m ref88/3010/03 (7/10/98)
194. Eastern Rd at Burns Rd to Junction Rd east side
195. Boomerang St between Ku-ring-gai Ave and Turramurra Ave ref 88/0805/01
196. Hunter Ave - Path and steps on demand line on embankment near Yarabung Rd
197. Chilton Pd - Nos 34&36 to Eastern Rd, southern side No 37 71/7436 (K&G required first)
198. Robinson St at Tryon Rd to Damour Ave, south eastern side - 1260m2
199. Water St from eastern boundary Wahroonga public school to Mona St - n'side con
200. Chilton Pd at Warrawee Ave to pathway between Nos 34&36 southern side

Cycle Networks (RDS Area)

201. Hill St - from Boundary St to Clanville Rd
202. Clanville Rd - from Hill St to Rawhiti St
203. Rawhiti St - from Clanville Rd to Waimea Rd
204. Waimea Rd - from Rawhiti St to Strickland Ave
205. Strickland Ave - from Chelmsford Ave to Lindfield Ave
206. Lindfield Ave - from Strickland Ave to Kenilworth Rd
207. Werona Ave - from Stanhope Rd to Elva Ave
208. Culworth Ave - from Rail Station to Marian St
209. Marian St - from Culworth Ave to Pacific Highway
210. Werona Ave - from Forsythe St to Park Ave
211. Pearson Ave - from Park Ave to Mt William St

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212. Park Ave - from Pacific Highway to Rosedale Rd
213. Rosedale Rd - from Park Ave to Melkin End
214. Turuga St - from Warrangi St to Ku-ring-gai Ave
215. Ku-ring-gai Ave - from Turuga St to Wonga Wonga St
216. Wonga Wonga St - from Ku-ring-gai Ave to Turramurra Ave
217. Turramurra Ave - from Wonga Wonga St to Gilroy Lane
218. Gilroy Lane - from Turramurra Ave to Gilroy Rd
219. Gilroy Rd - from Gilroy Lane to Eastern Rd
220. Eastern Rd - from Gilroy Rd to Brentwood Ave
221. Hastings Rd - from Cherry St to Warrawee Ave
222. Warrawee Ave - from Hastings Rd to Bangalla St
223. Bangalla St - from Warrawee Ave to Millewa Ave
224. Millewa Ave - from Bangalla St to Freeway
225. Collins Rd - from Village Green Pde to Bimburra Ave
226. Rosedale Rd - from Mona Vale Rd to Pentecost Ave
227. Mona Vale Rd - from Pentecost Ave to Link Road
228. Link Rd - from Stanley St to Killeaton St
229. Pentecost Ave - from Stanley St to Mona Vale Rd
230. Grandview Pd - from Fern St to Station St
231. Station St - from Grandview Pd to Carson St
232. Kissing Point Rd - from Pacific Highway to Catalpa Cr

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Appendix 2

Work Schedule Maps