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Project

Austral and Leppington North Precincts-
Addendum to the Demographic and Social
Infrastructure Assessment

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1 Executive Summary

This report provides an addendum to the Demographic and Social Infrastructure Assessment for the Austral and Leppington North Precincts prepared by Elton Consulting in association with Parkland Environmental Planning for the NSW Department of Planning and Infrastructure in August 2011. That report was based on a Draft Indicative Layout Plan (ILP) for the precincts, which anticipated a yield of about 16,240 dwellings and a future population of around 51,130 people at completion.

The Draft ILP for the Austral and Leppington North Precincts has subsequently been exhibited and revised to take account of feedback received.

The Final ILP (June 2012) proposes a yield of 17,349 dwellings, an increase over the draft ILP of 1,116 dwellings. The proposed dwelling mix includes almost 70% detached dwellings, almost 30% medium density dwellings and a small proportion of dwellings in areas of mixed use in the Leppington Major Centre.

Based on the revised dwelling yield, population forecasts for the precincts have been increased by more than 3,200 people, from 51,130 to 54,361 people. More than 49,500 (89%) residents will live within Liverpool LGA when the precincts are fully developed, with the remainder living in Camden LGA.

These changes require that the Austral and Leppington North Precincts Demographic and Social Infrastructure Assessment (August 2011) be reviewed. This Addendum presents revisions to the population forecasts for the Precincts and consequent revisions to requirements for community facilities and open space.

The population increase will not change the requirements for community facilities identified in the previous report in any significant way. Nor will it change the forecast composition of the incoming population.

However, the additional population could contribute to demand for additional space within the planned community centres. A larger population would also contribute to demand for an additional childcare centre (provided by the private sector) and, in a small way, to demands for other services provided by the private sector such as entertainment and leisure.

In terms of open space provision, the larger population will increase demand for open space within the Precincts. The final ILP shows 135.44 hectares of district and local open space for a

population of 54,361 people. This represents a shortfall of 18.4 hectares when compared with the 153.84 ha derived from the application of the Liverpool Council and DPI notional standard of 2.83 ha/1000 people, resulting in a rate of provision of 2.49 ha/1000 people. Despite this, it is understood that Liverpool and Camden Councils are satisfied with the proposed provision of open space in Austral and Leppington North as shown in the final ILP.

Needs for regional open space, sporting, aquatic and recreational facilities will be met by planned facilities in the Leppington Town Centre and in the Western Sydney Parklands.

The distribution of open space reflects opportunities and constraints such as riparian corridors and utility easements. The relatively lesser provision of open space in the eastern section of the Precincts still complies with relevant benchmarks but recognises that residents in those areas have better access to the Western Sydney Parklands.

The ratio of informal to active open space proposed across the two precincts is 60:40, which reflects the recommended ratio.

The provision of sporting fields proposed in the final ILP satisfies the adopted Council standard with regard to local sports fields, and exceeds it with regard to district playing fields. One more set of district playing fields is proposed than is required by the standards. It is understood that both councils are satisfied with the proposed level of provision of sporting fields. The provision of sporting fields is consistent with the objectives of encouraging participation in sporting activities and ensuring an appropriate mix of passive and active recreation opportunities in the Precincts.

An increase in population to 54,361 people justifies 7 key suburb parks being provided. Such parks will need to be integrated with sporting facilities and along riparian corridors. These key suburb parks should be embellished as parks with facilities and settings catering for a range of age groups and recreation preferences. Needs for key suburb parks will also be catered for in part by the Western Sydney Parklands due to its proximity to the precincts. It is understood that both Liverpool and Camden Councils are satisfied with the number and location of parks shown on the final ILP.

Provision of recreational facilities, such as children's playgrounds and shared pathways, will be determined at the masterplanning and detailed design stage. Eleven children's playgrounds and 13 play spaces for older children are recommended to be located in the open space shown on the ILP. Local parks are located within 400-500m walking distance of most residences as recommended.

Opportunities for walking and cycling routes within the precincts and linking with the Western Sydney Parklands and adjoining precincts are reflected on the ILP.

While the early provision of social infrastructure can contribute to social cohesion and connectivity, reliance on Section 94 funding limits local government provision until development is well advanced. The integrated provision of social infrastructure could be encouraged through interagency planning by local and State government agencies. Opportunities for co-location, joint use of facilities and coordinated services delivery should also be explored. This approach has been successfully adopted elsewhere and could be taken up during the process of precinct development.

In the early stages of development, there are existing sporting facilities and areas of open space within, and in close proximity to, the Austral and Leppington North Precincts that may be able to sustain the short to medium term demand. While development of additional sporting facilities proceeds, the existing sporting facilities may require upgrading to cope with additional use, or conversion to cater for different codes.

Community cohesion and connectivity can also be promoted through community development programs. There is a need to identify new sources of funding (including partnerships and shared resources) to assist in developing connections and community cohesion.

2 Introduction

In August 2011, Elton Consulting, in association with Parkland Environmental Planning, completed a demographic and social infrastructure assessment for the Austral and Leppington North Precincts for the NSW Department of Planning & Infrastructure, as one of the studies required to support preparation of the precinct plan for the precincts of Austral and Leppington North.

The assessment was based on a draft Indicative Layout Plan (ILP), which anticipated a yield of about 16,240 dwellings, of which around 70% were to be detached dwellings, 27% were medium density dwellings and around 2% were higher density apartments. Based on this scenario, a population of around 51,130 people was forecast for the precincts, on completion. Assessment of requirements for social infrastructure and open space were based on this population estimate.

Following exhibition of the draft ILP and receipt of submissions, the ILP for Austral and Leppington North Precincts has been revised. Changes include revisions to the size and location of areas of housing, open space and some community facilities.

The Final ILP proposes an estimated yield of 17,349 dwellings, resulting in a forecast population of 54,361 people.

These changes require that the Demographic and Social Infrastructure Assessment for Austral and Leppington North Precincts be revised. This Addendum presents revisions to the population forecasts for the Precincts and the consequent revisions to the requirements for community facilities and open space. Much of the original assessment remains valid, particularly with respect to the existing policy and social contexts, the approach to social infrastructure planning and demand considerations. Consequently, these issues have not been revisited in the Addendum.

Nevertheless, this Addendum should be read in conjunction with the original Demographic and Social Infrastructure Assessment (1 August 2011), to provide a full understanding of the social infrastructure planning that has been undertaken for the precincts of Austral and Leppington North.

3 Population forecasts

3.1 Projected development yields

The final ILP (June 2012) for Austral and Leppington North, prepared by Cox Richardson and Conybeare Morrison for the NSW DP&I, proposes an area of 1,076.8 ha for residential development and an estimated yield of 17,349 dwellings. The proposed breakdown of dwelling types is as follows:

Table 1: Proposed dwelling yield and mix

Dwelling type	Land area (ha)	Dwellings / ha	No. of dwellings
Liverpool LGA			
Low density & environmental living	856.3	13.9	11,926
Medium density	138.7	25.0	3,466
Mixed use	-	-	-
Sub-total Liverpool LGA	994.9	15.5	15,393
Camden LGA			
Low density	-	-	-
Medium density	63.9	25.0	1,597
Mixed use	18.0	20.0	360
Sub-total Camden LGA	81.9	23.9	1,956
Total	1,076.8	16.1	17,349

Overall, this represents an increase of about 1,116 dwellings (or 7%) over yields in the draft ILP. While there have been changes in the numbers across all dwelling types, the major feature of the final ILP is a 22% increase in medium density housing forms within the Liverpool component of the precinct, to 3,466 dwellings. Nevertheless, this form of housing makes up only 22.5% of dwellings in this area. The great majority will continue to be low density detached or environmental living housing forms, which have also increased slightly from the draft ILP.

Within the Camden part of the precinct, the final ILP shows a small increase in the total number of dwellings due to increased numbers of medium density dwellings to 1,597. The number of dwellings in mixed use zones within Camden has been reduced slightly to 360 dwellings.

3.2 Projected population size

In line with changes to the dwelling yield and mix, forecast population numbers have also changed.

By applying average occupancy rates from the 2006 Census of Population and Housing (ABS) to the different dwelling types, estimated population numbers for the precinct are shown in Table 2.

Table 2: Projected population numbers

Dwelling type	No. of dwellings	Occupancy rate	Estimated population
Liverpool LGA			
Low density & environmental living	11,926	3.4	40,550
Medium density	3,466	2.6	9,013
Mixed use	-	-	-
Sub-total Liverpool LGA	15,393	3.2	49,562
Camden LGA			
Low density	-	-	--
Medium density	1,597	2.6	4,151
Mixed use	360	1.8	648
Sub-total Camden LGA	1,956	2.5	4,799
Total	17,349	3.1	54,361

The table suggests that the precincts, at completion, would now have a population of about 54,361. This represents an increase of 3,231 people (7%) over the estimated 51,130 in the original report.

Consistent with the increase in dwellings, much of the population increase will be in medium density dwellings within Liverpool LGA (an increase of 1,639 people). The Liverpool component will be 49,562 dwellings, or 89% of the total.

Changes to the population within Camden are relatively small, increasing by 260 people to 4,799.

Under the new ILP, the average household size is 3.1 persons per household, which is broadly consistent with the draft ILP and reflective of the predominance of low density housing forms proposed within the Liverpool LGA.

3.3 Projected demographic characteristics

The proposed changes in dwelling mix will impact to a very limited degree on the forecast demographic composition of the precinct.

The original Demographic and Social Infrastructure Assessment considered the age profiles of the Liverpool and Camden LGAs and age breakdowns for nearby suburbs in preparing a forecast age profile for the Austral and Leppington North Precincts. That age profile reflected the anticipated dwelling mix for the

precincts, which comprised mostly low and medium density housing that would likely be occupied by families with children.

The revised dwelling mix shows a slightly higher proportion (by 2-3%) of medium density dwellings than previously. As a result, the final ILP will generate a slightly higher proportion of residents who will live in medium density housing.

The demographic characteristics of the future population described in the original Demographic and Social Infrastructure Assessment allowed for large proportions of young couples and families with children, but also a greater diversity of family types and households than are found in many new fringe development areas. This is attributable to the diversity in housing types and affordability. In particular, it is expected that the smaller and medium density dwellings will appeal to residents from a variety of age groups and life stages, household types and tenures and this will contribute to diversity within the new community.

These observations will continue to apply under this final ILP.

4 Social infrastructure requirements

As outlined in the previous chapter, the forecast number of dwellings and population has increased since the original assessment to 17,349 and 54,361 respectively. The implications of this for social infrastructure are discussed in this section. The implications for open space and recreation needs are discussed in the following section.

4.1 Infrastructure requirements

The original Demographic and Social Infrastructure Assessment considered the indicative need for facilities in terms of a hierarchy of centres and catchments as well as against a number of benchmarks and standards, including those used by DP&I (*Growth Centres Development Code*) and Liverpool and Camden Councils.

The report identified a need for the following local and district level community facilities to meet the needs of the future population of Austral and Leppington North:

- 1 large multi-purpose community centre (Austral town centre)
- 3 smaller multi-purpose community centres
- 6-7 government primary schools
- 2 government high schools
- 2 private sector primary health care clinics
- A number of team medical practices
- Community services for families and individuals to be provided by non-government agencies and community organisations in leasehold accommodation
- Childcare centres to be provided by private / non-government providers
- Private schools and residential aged care facilities as need arises
- Private sector entertainment and leisure facilities
- Places of worship as demand is demonstrated

- Resourcing for community development programs, and recurrent funding for the programs, activities and services required to support the future population.

In addition, a number of regional and sub-regional community facilities were identified to be provided in the Leppington Major Centre.

The projected increase of 1,116 dwellings and 3,231 people will not change the above recommendations, as the marginal increase in demand will not reach thresholds to trigger a need for extra facilities.

Advice from Department of Education and Communities (DEC) contained in the original report suggests that an additional new primary school would be required with an increase in 2,000-2,500 dwellings. The revised increase in dwelling yields fall below this level.

An increase of 3,231 residents would contribute to demand for childcare in the area. Pre-school and long day care services are typically planned at a ratio of 1 place per 5 children aged 0-4 years (*Growth Centres Development Code*). This may contribute to a demand for extra places amounting to one additional childcare centre within the precincts. However, Camden and Liverpool Councils will not be providing new Council-operated childcare centres and instead, childcare will be provided by the private sector.

The increase in population may also contribute to demand for additional space within some larger facilities such as libraries and community centres. Council guidelines for library provision are based on a floor space per 1,000 people:

- Liverpool Council – 42m² per 1,000 people
- Camden Council – 39 m² per 1,000 people plus 20% extra for circulation space.

However, the proposed library will be located within the Leppington Major Centre and will be sized to meet the needs of a much larger regional catchment.

Likewise, Council guidelines for community centres take into consideration rates of provision per 1,000 people. This would imply there is a need to plan for slightly larger facilities to accommodate the increase of 3,231 residents. Applying the Liverpool Council standards, as used in the original Demographic and Social Infrastructure Assessment would increase the demand for total Gross Floor Area of community facilities by 150-200m². However, given the range of sizes proposed for the three smaller community centres within the original report (600-750m² each, with a combined GFA of 1,800-2,250m²), this increase can be accommodated in future detailed planning and design.

In summary, the additional population under the final ILP is likely to create demand for one additional childcare centre and additional space within the multi-purpose community centres. The larger population will also contribute in a minor way to demands for other community facilities, as well as to services provided by the private sector such as entertainment and leisure.

4.2 Meeting demands within the ILP

The final ILP has been examined to ensure the recommendations within the original Demographic and Social Infrastructure Report have been addressed and that the demands of the increased population can be met.

The ILP shows 7 schools, rather than 8 under the earlier ILP. It is understood that this has occurred following advice to DP&I from DEC that there will be capacity within other local high schools in the surrounding area to meet some of the future demand. As such, the ILP now identifies sites for 1 high school and 6 primary schools within the precincts. Land areas and locations are acceptable to DEC and consistent with its guidelines.

The ILP also shows some changes in the positioning of community centres with respect to areas of open space. All community centres are now located within retail centres, following advice from Councils that this increases visibility and encourages greater usage. Within the Austral Town Centre, the community centre is located adjacent to a plaza area. Two other community centres, at Gurner Avenue and Tenth Avenue, are in close proximity to local parks. Each of the smaller community centres is also located near schools. Land areas allocated are adequate for the sizes of centres proposed in the Demographic and Social Infrastructure Report. Locating the community centres in neighbourhood centres near schools and plazas will contribute to high levels of usage by many groups within the community and allow residents to conveniently meet a variety of needs.

4.3 Integrated planning and delivery

Submissions to the public exhibition raised the need for integrated interagency service planning and delivery so that social infrastructure can be provided in a coordinated manner early in the development. Early provision of social infrastructure can contribute to social cohesion and connectivity, while co-ordinated provision makes more efficient use of limited resources, and allows for implementation of best practice principles such as co-location.

Local councils generally will be responsible for delivering key social infrastructure to serve the future population of the Precincts. Typically, this

social infrastructure is funded by Section 94 contributions, paid by developers as land is developed. The funding of social infrastructure by local governments is therefore limited until significant development has taken place. However, this funding mechanism for social infrastructure is currently under review.

State Government agencies also have a role in the provision of social infrastructure such as schools, health care, TAFE and government services.

The integrated planning and provision of social infrastructure through interagency planning would encourage both local and State government agencies to consider opportunities for co-location, joint use of facilities and coordinated services delivery. Such an approach has been successfully adopted elsewhere and could be taken up during the process of precinct development.

In the early stages of development, there are existing sporting facilities and areas of open space within, and in close proximity to, the Austral and Leppington North Precincts that may be able to sustain the short to medium term demand. While development of additional sporting facilities proceeds, the existing sporting facilities may require upgrading to cope with additional use, or conversion to cater for different codes.

Community cohesion and connectivity can be promoted through physical planning, the provision of social infrastructure and through community development programs. There is a need to identify new sources of funding (including partnerships and shared resources) to assist in developing connections and community cohesion.

5 Open space and recreational facilities

5.1 Quantum of open space

A revised analysis of potential demand for open space has been undertaken, based on a forecast increase in total population to 54,361 people, compared with the population of 51,130 in the draft ILP.

A further increase in demand for open space is expected due to this increase in population.

The benchmark used to guide provision of open space adopted by Liverpool Council and the Department of Planning and Infrastructure is 2.83 hectares per 1,000 people. While Camden Council has adopted a slightly higher benchmark (3.64 ha/1000) in its Contributions Plan, it has been decided to adopt the DPI and Liverpool Council benchmarks in this study.

Applying this rate, a population of 54,361 suggests a need for 153.84 hectares of open space to be provided across the two precincts.

In total, the final ILP shows 135.44 ha of open space. This represents a notional shortfall of 18.4 ha across the two precincts, when the benchmark of 2.83 ha/1000 is applied. It will result in an overall rate of provision of 2.49 ha/1000 people.

When the distribution of open space across the two local government areas is considered, it is apparent that the notional shortfall is concentrated in Liverpool LGA. The final ILP shows 115.92 hectares of open space in Liverpool, resulting in a rate of 2.34 hectares per 1,000 people. The final ILP also shows 19.51 hectares of open space in Camden, resulting in a rate of 4.07 hectares per 1,000 people, when only the population of the Leppington North Precinct in Camden LGA is considered. Camden Council has agreed to apportion the costs of some district open space along the Scalabrini Creek corridor to residents in the adjoining Leppington Precinct (where Precinct Planning has recently commenced). The provision of open space at a higher rate in Camden LGA reflects this arrangement.

The difference in proposed rate of provision between the two local government areas is not considered to be problematic. Rather it reflects the location of riparian corridors, existing areas of open space, the Leppington Major Centre and urban design opportunities, and recognises that the future

population of the precincts will utilise open space across the local government boundary.

Although the quantum of open space provision proposed in the final ILP is less than that suggested notionally by the adopted benchmark, it is understood that both Councils and DP&I are satisfied with the quantum of open space proposed in the final ILP.

5.2 Relationship to Western Sydney Parklands

The original Demographic and Social Infrastructure Assessment argued that the needs for regional open space and recreation facilities of the forecast population of Austral-Leppington North could be satisfied by taking advantage of the Precincts' close proximity to the Western Sydney Parklands (which provides for regional informal parkland and metropolitan sporting facilities), and through development of a regional indoor aquatic and leisure centre located within the Leppington Town Centre.

The *Western Sydney Parklands Plan of Management* (2010) sets out the potential nature and location for such spaces and facilities in the Parklands, including the Bringelly Sports and Active Recreation and Tourism Hub. The final ILP reflects those proposals for the Parklands by showing only district and local open space and outdoor sporting facilities in the precincts. It is assumed that provision of metropolitan and regional open space and sporting facilities in the Western Sydney Parklands, and development of the indoor aquatic and leisure centre in the civic precinct in the Leppington Town Centre north of Bringelly Road, will proceed as recommended.

It is noted that the Western Sydney Parklands Trust has raised concerns that funding has not been allocated for the Parklands to deliver such metropolitan and regional sporting facilities, cycleways and informal passive open space. However, it is reasonable to assume that metropolitan level sporting and regional recreational facilities will be provided within the Parklands in accordance with the Plan of Management. If such facilities are planned for the Parklands it would be a waste of resources for another organisation to replicate them in Austral-Leppington North. Funding of metropolitan and regional sporting and recreation facilities in the Western Sydney Parklands would be determined by the NSW Government.

The Western Sydney Parklands Trust has also expressed a view that open space is not equitably distributed to the eastern side of the Precincts, which may create an expectation for future residents that their local/ neighbourhood park needs are provided within the Parklands.

The Demographic and Social Infrastructure Assessment recognises that the Western Sydney Parklands is regional open space and provides a valuable part of the supply of open space in the south-west Sydney region. Adequate land for district and local open space has been allocated throughout the Precincts to serve local and district open space needs.

Open space has been distributed in the final ILP taking into account factors such as riparian corridors, flood-labile land, other land uses, topography, utility easements and transport routes. On the eastern side of the precinct, rates of open space provision are lower, due to constraints such as the limited occurrence of watercourses for linear parks, the water supply pipeline, and the gas transmission line. Nevertheless, the proposed distribution of open space will still meet the benchmark of allowing most residents to have access to a local park within 4-500 metres walking distance.

The relatively lesser provision of open space in the eastern section of the Precincts may result in residents in those areas using the Western Sydney Parklands as they are more accessible than other open spaces in the Precincts. Despite the Parklands being designated as regional open space, it is not unreasonable to expect that residents adjoining the Parklands will most likely use them frequently because of their accessibility to their homes, irrespective of whether they are classified as 'regional' open space or not.

5.3 Active to informal open space ratio

Calculations of required open space in the precinct undertaken in July 2011 resulted in a ratio of 60% informal:40% active open space, which is reflected in the final ILP. The informal:active open space ratios for both LGAs in the final ILP are within 1% of the recommended ratios, which is acceptable.

5.4 Active open space

In the original Demographic and Social Infrastructure Assessment (August 2011), a rate of provision of 1 double playing field per 5,000 people was recommended, based upon actual levels of provision achieved in Camden and Liverpool in the past. The number of double playing fields required in Austral and Leppington North was calculated on this basis.

At the same time, it was noted that Liverpool Council had adopted a notional minimum standard of 1 double playing field per 10,000 people for its future release areas.

The discrepancy between the two benchmarks has been further considered and a decision has been made to adopt the Liverpool Council standard of 1 double playing field (minimum 4 hectares) per

10,000 people as a local sportsground in planning for Austral and Leppington North. The Liverpool Council standard of 1 district sportsground (2 double playing fields, minimum 6 hectares) per 60,000 people has also been adopted.

Based upon these standards, a forecast population of 54,361 people would give rise to a need for:

- 5-6 double playing fields as local sportsgrounds
- 1 district sportsground, comprising 2 double playing fields as well as outdoor courts

The final ILP shows a total of 20 sports fields, comprising 6 double sports fields (12 fields) as local sportsgrounds and 2 district sportsfield complexes (8 fields). As such, the final ILP satisfies the standard for local sports fields, and exceeds the standard for district sportsgrounds, providing two district sports complexes, rather than the one required to satisfy the Council standard. The provision of sporting fields is consistent with the objectives of encouraging participation in sporting activities and ensuring an appropriate mix of passive and active recreation opportunities in the Precincts.

It is understood that both Councils are satisfied with the provision of sporting fields proposed in the final ILP.

The original Demographic and Social Infrastructure Assessment recommended that schools are located adjacent to, or nearby, sporting fields to facilitate school sport. The Final ILP shows that some schools (Gurner Avenue, corner Fourth Avenue and Thirteenth Avenue, corner Kelly and Ninth) are not located close to sporting fields/courts, or at least a large flat grassed area for ball games. However, this is not a significant shortcoming, as the Department of Education and Communities does not require primary schools to be close to sporting fields.

5.5 Informal open space

The original Demographic and Social Infrastructure Assessment recommended that informal open space be provided in the form of key suburb (district) parks, local open space, open space along riparian corridors, and walking/cycling linkages.

5.5.1 Key suburb parks

The original report recommended that 6-7 key suburb parks with a minimum size of 3 ha should be provided for a population of 51,130 people. An increase in population to 54,361 people justifies 7 key suburb parks. Such parks will need to be integrated with sporting facilities and along riparian corridors. These key suburb parks should be embellished as parks with facilities and settings catering for a range of age groups. Needs for key

suburb parks will also be catered for in part by the Western Sydney Parklands due to its proximity to the precincts.

It is understood that both Liverpool and Camden Councils are satisfied with the number and location of parks shown on the final ILP.

5.5.2 Local parks

Local open space was recommended to be located within 400-500m walking distance of 90% of dwellings. This is reflected on the final ILP in the form of either local parks or riparian open space being within 400-500m walking distance of most dwellings.

5.5.3 Riparian corridors

A focus of open space provision in the Precincts has been on making appropriate use of land that is affected by flooding. This is reflected on the final ILP where most of the open space is located along riparian corridors.

5.5.4 Elevated land

A key principle for locating open space in the Precincts was to use elevated land where possible for public open space, so that park users could enjoy views rather than relying largely on lower-elevation land which may be affected by flooding for open space. Some of the small local parks are located on elevated land on the final ILP.

NSW Health has suggested that habitat corridors connecting remnant vegetation along higher points could serve to reduce groundwater salinity risks. However, the ability to increase the amount of open space on elevated land is limited by the characteristics of the Precincts and the need to provide open space consistent with the demands of the new population and the available funding under Section 94.

5.6 Recreational facilities

Provision of recreational facilities in informal open space will be determined at masterplanning and detailed design stage. However playgrounds for young children, play spaces for older children, and walking/cycling linkages require special consideration.

5.6.1 Playgrounds and play spaces

The original Demographic and Social Infrastructure Assessment recommended that, based on the forecast population of children and young people in a population of 51,130 people, 11 playgrounds for young children and 13 play spaces for older children should be provided. On that basis, the proposed

increase in population will not result in additional playgrounds or play spaces being required.

5.6.2 Linkages

Continuous pedestrian and cycle routes linking residential areas, workplaces, transport, community and educational facilities, and open space/recreation facilities are important for physical activity and alternative transport. Continuous, sufficiently wide, interesting and varying linkages which connect to locations adjoining the route are sought by pedestrians and cyclists.

The location of pedestrian paths, cycleways, and shared pathways in the precincts will be determined in masterplanning and detailed design.

There are restrictions on what type of embellishment or works that can be carried out in close proximity to the existing creeklines. Where possible, the provision for pedestrian cycle links along the existing creeklines has been accommodated in the ILP. Depending on the location of off-road creek crossings the final ILP shows a continuous open space linkage is possible along most of the length of the riparian corridors.

The Western Sydney Parklands Trust identified that the ILP relies heavily on the street network to provide pedestrian/cycle links. To address this, the Trust suggested an additional pedestrian/cycle link should follow the unnamed creek from Gurner Road to the entrance of the Parklands at Tenth Avenue. DPI responded that the suggested link would be investigated as part of an open space review. If it is not possible to zone an open space link for the full distance, it is recommended that a shared path could be integrated with the drainage land, and an on-road path used to make the final link along Tenth Avenue and to the Parklands entrance north of Tenth Avenue.

The Trust also expressed concern that the pedestrian and cycleway network currently shown in Figure 5-8 of the Precinct Planning Report does not provide for adequate connectivity between the Precincts and the Parklands. There needs to be a continuous east-west pedestrian/cycle link between Boyd Street and the Parklands along Sixth Avenue which should have a minimum width of 2.5 metres. Shared paths should comply with the local Council engineering standards, which typically require shared paths to have a minimum width of 2.5 metres. The DCP specifies a road reserve of 20 metres for a collector road, which is approximately equivalent to the road reserve of Sixth Avenue. The DCP specifies shared paths of 2.5 metres on both sides of collector roads. Upgrading of Sixth Avenue to a collector road standard is not justified based on traffic generation from the Precincts. However, there is sufficient space for it to be upgraded, or for wider footpaths to be installed,

at a later stage should it be necessary and should funding be available.

Bicycle parking facilities should be located at transport nodes, recreational and community facilities, and along the creek corridors and other recreational linkages.

6 Conclusions

6.1 Community facilities

The revised dwelling and population forecasts do not change the recommendations of the original Demographic and Social Infrastructure Assessment for the Austral and Leppington North Precincts with regard to community facility needs.

The additional population is not sufficient to justify provision of additional community facilities. Advice from Department of Education and Communities (DEC) contained in the original report suggests that an additional new primary school would be required with an increase in 2,000-2,500 dwellings. The increase in dwelling yields falls below this level.

However, the additional population may contribute to demand for one additional childcare centre (provided by the private sector) and additional space within the multi-purpose community centres. The larger population will also contribute in a minor way to demands for other community facilities, and to demands for entertainment, leisure and other privately provided activities and services.

It is noted that the DEC has revised its assessment of school requirements since the original Demographic and Social Infrastructure Assessment was prepared, and has advised that six primary schools and only one high school will now be required to meet the needs of the two precincts.

6.2 Open space

The final ILP shows 135.44 hectares of district and local open space for a population of 54,361 people. This represents a shortfall of 18.4 hectares when compared with the 153.84 ha derived from the application of the Liverpool Council and DPI notional standard (2.83 ha/1000 people), resulting in a rate of provision of 2.49 ha/1000 people. Despite this, it is understood that Liverpool and Camden Councils are satisfied with the proposed provision of open space in Austral and Leppington North as shown on the final ILP.

Needs for regional open space, sporting, aquatic and recreational facilities will be met by planned facilities in the Leppington Town Centre and in the Western Sydney Parklands.

The distribution of open space reflects opportunities and constraints such as riparian corridors and utility easements. The relatively lesser provision of open space in the eastern section of the Precincts still

complies with relevant benchmarks but recognises that residents in those areas have better access to the Western Sydney Parklands.

The ratio of informal to active open space proposed across the two precincts is 60:40, which reflects the recommended ratio.

The provision of sporting fields in the final ILP satisfies the adopted Council standards with regard to local sports fields, and exceeds it with regard to district playing fields. One more set of district playing fields is proposed than is required by the standards. It is understood that both councils are satisfied with the proposed level of provision of sporting fields. The provision of sporting fields is consistent with the objectives of encouraging participation in sporting activities and ensuring an appropriate mix of passive and active recreation opportunities in the Precincts.

An increase in population to 54,361 people justifies 7 key suburb parks being provided. Such parks will need to be integrated with sporting facilities and along riparian corridors. These key suburb parks should be embellished as parks with facilities and settings catering for a range of age groups and recreation preferences. Needs for key suburb parks will also be catered for in part by the Western Sydney Parklands due to its proximity to the precincts. It is understood that both Liverpool and Camden Councils are satisfied with the number and location of parks shown on the final ILP.

Provision of recreational facilities, such as children's playgrounds and shared pathways, will be determined at the masterplanning and detailed design stage. Eleven children's playgrounds and 13 play spaces for older children are recommended to be located in the open space shown on the ILP. Local parks are located within 400-500m walking distance of most residences as recommended.

Opportunities for walking and cycling routes within the precincts and linking with the Western Sydney Parklands and adjoining precincts are reflected on the ILP.

6.3 Integrated delivery

Integrated delivery is about achieving coordination and efficiency to make the best use of limited resources.

While the early provision of social infrastructure can contribute to social cohesion and connectivity, Section 94 funding limits local government provision until development is well advanced. The integrated provision of social infrastructure could be encouraged through interagency planning by local and State government agencies. Opportunities for co-location, joint use of facilities and coordinated services delivery should also be explored. This

approach has been successfully adopted elsewhere and could be taken up during the process of precinct development.

In the early stages of development, there are existing sporting facilities and areas of open space within, and in close proximity to, the Austral and Leppington North Precincts that may be able to sustain the short to medium term demand. While development of additional sporting facilities proceeds, the existing sporting facilities may require upgrading to cope with additional use, or conversion to cater for different codes.

Community cohesion and connectivity can also be promoted through community development programs. There is a need to identify new sources of funding (including partnerships and shared resources) to assist in developing connections and community cohesion.