



02

## **A1 - Indicative Layout Plan**

## LEGEND

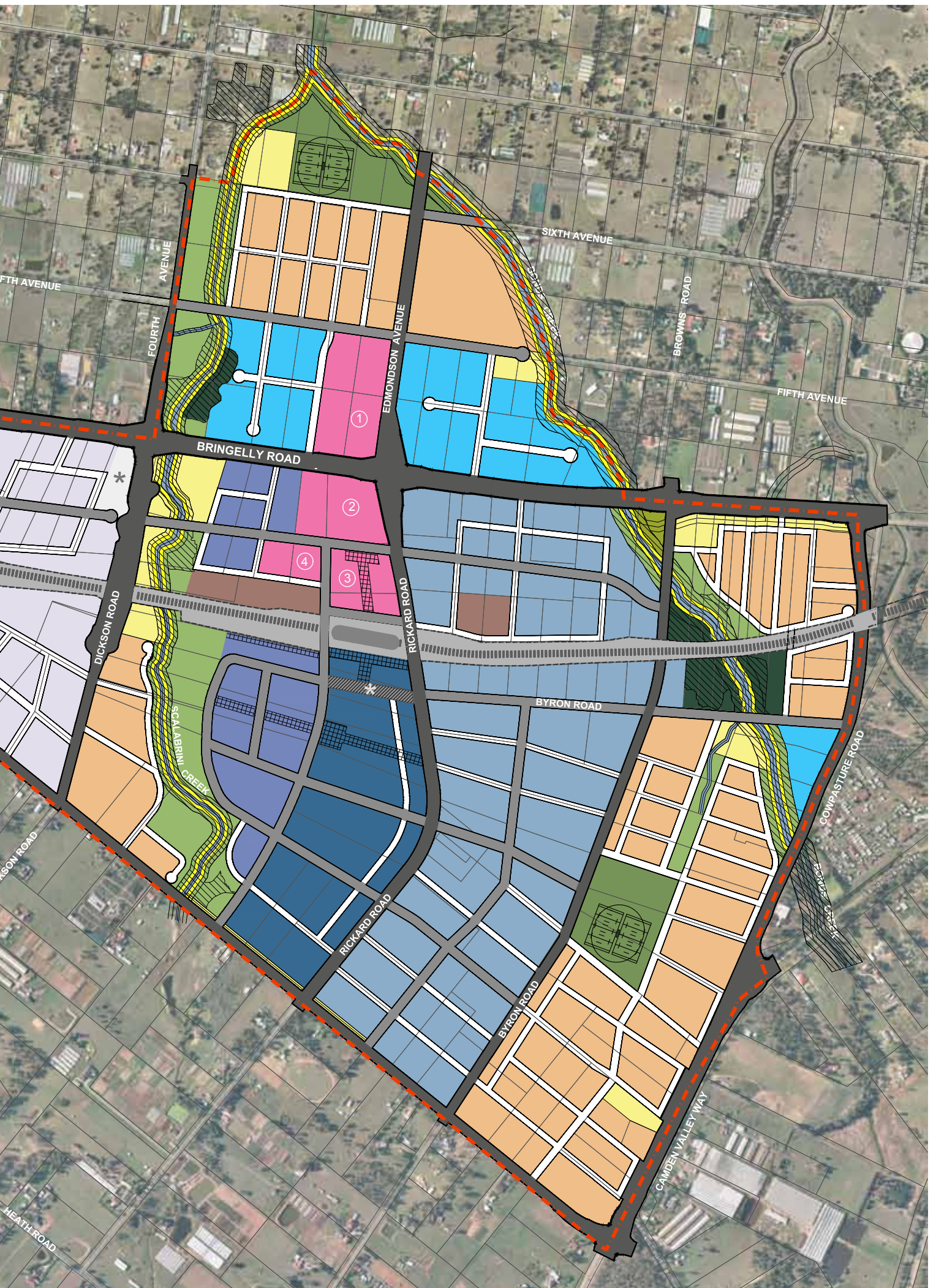
-  Site Boundary
-  Existing Creeks
-  Environmental Protection Overlay
-  Light Industrial
-  Civic Precinct : 1 - Indicative Aquatic/Indoor Recreation Location  
2 - Indicative TAFE Site  
3 - Indicative Cultural/Community Centre Location  
4 - Indicative Health Facility Location
-  Mixed Use
-  Commercial / Business Park
-  Bulky Goods Retail
-  Retail Core
-  Medium Density Residential
-  Rural Transition
-  Passive Open Space
-  Private Open Space
-  Active Open Space
-  Environmental Conservation
-  Drainage
-  Bus Interchange
-  Commuter Carpark
-  Indicative Substation Site
-  Major Roads
-  Primary Roads
-  Road Subject to Flood Plain Filling Assessment
-  Rail Corridor And Leppington Station
-  Transmission Easement
-  Plaza / Pedestrian Link



## Leppington Town Centre Masterplan



Client:  
Department of Planning & Infrastructure  
10027-SK60 Rev 7 June 2012





ONE  
WAY  
→



GREEN  
COLES  
The Singapore  
Bing Lee  
Medical Centre

51st  
OVER

## A2 - Tree & Plant Species

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### Introduction

Street tree selections are provided for the following locations:

- Nature Strip, Town Centre and small parks (Table 1).
- Larger Parks/Reserves/Town Centre/Open Space Areas (Table 2).

The selection of street trees should have regard to the following:

- Power/Gas/Water/Sewer/Cable Lines
- Street Lights
- Pruning and shaping resilience
- Infrastructure & Easements
- Driveways & Bus Stops
- Pedestrian Crossings
- House Frontages & Set Backs
- Lateral spreading habits
- Road Verge & Nature Strip widths
- Waste Service collections
- Vehicle vision lines
- Cultural and Heritage amenity.
- Above ground Services.
- Minimum setbacks from concrete structures.
- Road Authority requirements for street trees to meet road safety objectives.

Refer Table 2 for:

- Shrubs
- Climbers
- Groundcovers and sub-shrubs
- Native Herbs
- Native Grasses

For Waterfront/Riparian, Bushland Rehabilitation Areas & Bushland Corridors - refer table 3.

**Table 1 – Town Centre Streets and Plazas, Nature Strip Street Trees and Small Parks**

| Species Name                                     | Common Name                                    | Height  | Width | Native |
|--------------------------------------------------|------------------------------------------------|---------|-------|--------|
| <i>Acer palmatum</i> 'Senkaki'                   | Coral Bark Maple                               | 4m      | 3m    |        |
| <i>Acer rubrum</i> '                             | October Glory' Red Maple                       | 9m      | 7m    |        |
| <i>Acmena smithii</i> 'Red Head'                 | Red Head Acmena                                | 6m      | 2m    | yes    |
| <i>Agonis flexuosa</i>                           | Willow Myrtle                                  | 8m      | 4m    | yes    |
| <i>Angophora costata</i> Dwarf 'Darni'           | Dwarf Angophora                                | 4m      | 2m    | yes    |
| <i>Bauhinia hookeri</i>                          | Mountain Ebony                                 | 10m     | 5m    | yes    |
| <i>Brachychiton populneus</i>                    | Kurrajong                                      | 8m      | 5m    | yes    |
| <i>Brachychiton rupestris</i>                    | Bottle Tree                                    | 8m      | 5m    | yes    |
| <i>Cercis canadensis</i> 'Forest Pansy'          | Canadian Redbud                                | 2m      | 3m    |        |
| <i>Cercis chinensis</i> 'Avondale'               | Chinese Redbud                                 | 12m     | 4m    |        |
| <i>Cercis occidentalis</i>                       | Californian Redbud                             | 5m      | 2m    |        |
| <i>Cercis siliquastrum</i>                       | Judas Tree                                     | 15m     | 5m    |        |
| <i>Cereus grandiflorus</i>                       | Night Blooming Cereus                          | 5m      | 2m    |        |
| <i>Ceretopetalum gummiferum</i>                  | NSW Xmas Bush                                  | 6m      | 3m    | yes    |
| <i>Cupaniopsis anarcardiodes</i>                 | Tuckeroo                                       | 7m      | 3m    | yes    |
| <i>Elaeocarpus reticulatus</i>                   | Blue Berry Ash                                 | 8m      | 4m    | yes    |
| <i>Eucalyptus</i> : Dwarf grafted varieties only | Eg -'Summer Red', 'Orange Beauty', 'Wild Fire' | 3m aprx |       | yes    |
| <i>Fraxinus griffithii</i>                       | Evergreen Ash                                  | 6m      | 4m    |        |
| <i>Fraxinus oxycarpia</i>                        | Raywood varieties                              | 10m     | 5m    |        |
| <i>Ginkgo biloba</i> 'Princeton Sentry'          | Tall Narrow Ginkgo                             | 10m     | 3m    |        |
| <i>Gordonia axillaris</i>                        | Poached Egg Camellia                           | 7m      | 3m    |        |
| <i>Hymenosporum flavum</i>                       | Native Frangipani                              | 7m      | 3m    | yes    |
| <i>Jacaranda mimosifolia</i>                     | Blue Haze Tree                                 | 15m     | 10m   |        |
| <i>Jubaea chilensis</i>                          | Chilean Wine Palm                              | 8m      | 4m    |        |

| Species Name                              | Common Name             | Height | Width | Native |
|-------------------------------------------|-------------------------|--------|-------|--------|
| <i>Juniperus chinensis</i> 'Keteleeri'    | Corkscrew conifer       | 4m     | 3m    |        |
| <i>Juniperus chinensis</i> 'Spartan'      | Spartan conifer         | 4m     | 2.5m  |        |
| <i>Koelreuteria paniculata</i>            | Golden Rain Tree        | 5m     | 3m    |        |
| <i>Lagerstroemia</i> species              | Crepe Myrtle            | 4m     | 3m    |        |
| <i>Laurus nobilis</i>                     | Bay Laurel              | 6m     | 3m    |        |
| <i>Leptospermum</i> species               | tea tree species        | 3m     | 3m    | yes    |
| <i>Lirodendron tulipifera fastigiatum</i> | Tulip tree              | 12m    | 5m    |        |
| <i>Lophostemon confertus</i>              | Brisbane Brush Box      | 9m     | 6m    | yes    |
| <i>Magnolia grandifolia</i> 'Exmouth'     | Magnolia 'Exmouth'      | 7m     | 3m    |        |
| <i>Magnolia grandiflora</i> 'Little Gem'  | Magnolia 'Little Gem'   | 4m     | 2m    |        |
| <i>Magnolia grandifolia</i> 'Kay Parris'  | Dwarf Perfumed Magnolia | 4m     | 2m    |        |
| <i>Magnolia x soulangeana</i>             | Tulip Magnolia          | 7m     | 4m    |        |
| <i>Magnolia soulangiana</i>               | Saucer Flower           | 6m     | 6m    |        |
| <i>Melaleuca styphelioides</i>            | Prickly Paperbark       | 6m     | 4m    | yes    |
| <i>Melaleuca decora</i>                   | White Cloud Tree        | 5m     | 2m    | yes    |
| <i>Melaleuca linariifolia</i>             | Snow In Summer          | 6m     | 4m    | yes    |
| <i>Nyssa sylvatica</i> 'Autumn Cascade'   | Weeping Blackgum        | 4m     | 3m    |        |
| <i>Nyssa sylvatica</i>                    | Black Tupelo            | 15m    | 6m    |        |
| <i>Parrotia persica</i>                   | Persian Witch Hazel     | 9m     | 3m    |        |
| <i>Pistacia chinensis</i>                 | Pistacia Nut Tree       | 13m    | 4m    |        |
| <i>Prunus</i> varieties                   | Flowering cherry s      | 4m     | 3m    |        |
| <i>Malus</i> varieties                    | Flowering apple         | 4m     | 3m    |        |
| <i>Pyrus</i> varieties                    | Flowering pear          | 6m     | 4m    |        |
| <i>Pyrus calleryana</i> 'Aristocrat'      | Flowering Pear          | 6m     | 3m    |        |
| <i>Pyrus calleryana</i> 'Chanticleer'     | Flowering Pear          | 9m     | 4m    |        |

| Species Name                                  | Common Name        | Height | Width | Native |
|-----------------------------------------------|--------------------|--------|-------|--------|
| <i>Pyrus calleryana</i> 'Bradford'            | Bradford Pear      | 6m     | 3m    |        |
| <i>Pyrus calleryana</i> 'Edgedell'            | Edgedell Pear      | 5m     | 3m    |        |
| <i>Pyrus calleryana</i> 'Glens Form'          | Flowering Pear     | 8m     | 4m    |        |
| <i>Pyrus calleryana</i> 'Capital'             | Flowering Pear     | 8m     | 4m    |        |
| <i>Pyrus betulaefolia</i> 'Southworth Dancer' | Flowering Pear     | 5m     | 4m    |        |
| <i>Sapium sebiferum</i>                       | Chinese Tallowwood | 7m     | 3m    |        |
| <i>Quercus palustris</i> 'Pringreen'          | Tall Narrow Oak    | 10m    | 3m    |        |
| <i>Syzygium australe</i> 'Pinnacle'           | Narrow Syzygium    | 6m     | 2m    | yes    |
| <i>Syzygium paniculatum</i>                   | Brush Cherry       | 10m    | 4m    | yes    |
| <i>Tristaniopsis laurina</i> 'Luscious'       | Water Gum          | 7m     | 3m    | yes    |
| <i>Zelkova serrata</i>                        | Zelkova            | 10m    | 4m    |        |
| <i>Zelkova serrata</i> 'Green Vase'           | Wine Glass tree    | 10m    | 4m    |        |
| <i>Zelkova serrata</i> 'Mushashino'           | Narrow Zelkova     | 8m     | 3m    |        |

Table 2 – Larger Parks / Reserves / Town Centre / Open Space Areas

| Species Name                    | Common Name               | Height | Width | Native |
|---------------------------------|---------------------------|--------|-------|--------|
| <i>Angophora costata</i>        | Sydney Red Gum            | 30m    | 10m   | yes    |
| <i>Angophora floribunda</i>     | Rough Barked Apple        | 20m    | 6m    | yes    |
| <i>Angophora subvelutina</i>    | Broad Leaf Apple          | 18m    | 6m    | yes    |
| <i>Araucaria araucana</i>       | Monkey Puzzle Tree        | 35m    | 8m    | yes    |
| <i>Araucaria bidwilli</i>       | Bunya Bunya Pine          | 40m    | 10m   | yes    |
| <i>Araucaria cunninghamii</i>   | Hoop Pine                 | 45m    | 6m    | yes    |
| <i>Brachychiton acerifolius</i> | Illawarra Flame Tree      | 30m    | 6m    | yes    |
| <i>Brachychiton discolor</i>    | Lacebark Kurragong        | 30m    | 6m    | yes    |
| <i>Caloedendron capense</i>     | Cape Chestnut             | 15m    | 8m    |        |
| <i>Carya illinoensis</i>        | Pecan                     | 30m    | 10m   |        |
| <i>Cedrus atlantica</i>         | Atlas Cedar               | 30m    | 8m    |        |
| <i>Cedrus deodara</i>           | Deodar Cedar              | 30m    | 6m    |        |
| <i>Cupressus funebris</i>       | Funeral Cypress           | 20m    | 5m    |        |
| <i>Eucalyptus amplifolia</i>    | Cabbage Gum               | 30m    | 5m    | yes    |
| <i>Eucalyptus bauerana</i>      | Blue Box                  | 25m    | 4m    | yes    |
| <i>Eucalyptus benthamii</i>     | Camden White Gum          | 35m    | 8m    | yes    |
| <i>Eucalyptus crebra</i>        | Narrow Leaf Red Iron Bark | 30m    | 8m    | yes    |
| <i>Eucalyptus fibrosa</i>       | Broad Leaf Red Iron Bark  | 30m    | 8m    | yes    |
| <i>Eucalyptus tereticornis</i>  | Forest Red Gum            | 40m    | 8m    | yes    |
| <i>Eucalyptus viminalis</i>     | Manna Ribbon Gum          | 50m    | 8m    | yes    |
| <i>Ficus macrophylla</i>        | Moreton Bay Fig           | 30m    | 8m    | yes    |
| <i>Ficus rubiginosa</i>         | Port Jackson Fig          | 18m    | 6m    | yes    |
| <i>Flindersia australis</i>     | Australian Teak           | 25m    | 5m    | yes    |
| <i>Ginkgo biloba</i>            | Maidenhair Tree           | 30m    | 8m    |        |

| Species Name            | Common Name             | Height | Width | Native |
|-------------------------|-------------------------|--------|-------|--------|
| Jacaranda mimosifolia   | Blue Haze Tree          | 15m    | 10m   |        |
| Liriodendron tulipifera | Tulip Tree              | 40m    | 8m    |        |
| Livistona australis     | Cabbage Palm            | 20m    | 2m    | yes    |
| Macadamia integrifolia  | Macadamia Nut Tree      | 15m    | 5m    | yes    |
| Magnolia grandifolia    | Bull Bay Tree           | 18m    | 8m    |        |
| Magnolia denudata       | Yulan Tree              | 18m    | 8m    |        |
| Phoenix canariensis     | Canary Island Date Palm | 15m    | 5m    |        |
| Pinus pinea             | Italian Stone Pine      | 25m    | 4m    |        |
| Podocarpus elatus       | Illawarra Pine          | 25m    | 8m    | yes    |
| Quercus coccinea        | Scarlet Oak             | 15m    | 3m    |        |
| Quercus palustris       | Pin Oak                 | 25m    | 5m    |        |
| Quercus robur           | English Oak             | 30m    | 6m    |        |
| Schinus areira          | Peppercorn Tree         | 17m    | 5m    |        |
| Syzygium luehmannii     | Small Leaf Water Gum    | 20m    | 8m    | yes    |
| Ulmus parvifolia        | Chinese Elm             | 12m    | 5m    |        |
| Zelkova serrata         | Zelkova                 | 12m    | 4m    |        |
| Washington robusta      | Mexican Fan Palm        | 25m    | 3m    |        |

| SHRUBS:                                                      |
|--------------------------------------------------------------|
| Acmena varieties                                             |
| Banksia varieties                                            |
| Bauhinia galpini                                             |
| Brunfelsia - grandifolia/maliformis/<br>pauciflora varieties |
| Callistemon varieties                                        |
| Cordyline fruiticosa 'Kiwi'                                  |
| Crinum pedunculatum                                          |
| Dodonaea                                                     |
| Doryanthes excelsa                                           |
| Eucalyptus: dwarf grafted varieties.                         |
| Gordonia axillaris                                           |
| Grevillea varieties                                          |
| Erica varieties                                              |
| Eremophila varieties                                         |
| Ixora chinensis (Prince of Orange)                           |
| Kunzea varieties                                             |
| Indigofera australis                                         |
| Leptospermum species                                         |
| Loropetalum chinensis                                        |
| Magnolia grandifolia 'Little Gem'                            |
| Magnolia stellata (Star Magnolia)                            |
| Melaleuca 'Revolution Gold'                                  |
| Michelia figo (Port Wine Magnolia)                           |
| Myoporum montanum                                            |

| SHRUBS (cont.):                                                   |
|-------------------------------------------------------------------|
| Photonia 'Red Robin' and other smaller<br>growth Photonia.        |
| Viburnum varieties, eg odoratissimum                              |
| Syzygium varieties.                                               |
| CLIMBERS:                                                         |
| Clematis aristata                                                 |
| Gelsemium sempervirens                                            |
| Jasminum spp.                                                     |
| Hardenbergia violacea                                             |
| Kennedia rubicunda                                                |
| Mandevilla spp                                                    |
| Pandorea jasminoides                                              |
| Trachelospermum jasminoides                                       |
| GROUND COVERS & SUB SHRUBS:                                       |
| Acacia cognate 'Mini Cog'                                         |
| Anigozanthos "Bush Gems - varieties, eg<br>Bush Haze, Bush Ranger |
| Dianella caerulea                                                 |
| Dichondra repens                                                  |
| Convolvulus mauritanicus                                          |
| Goodenia hederacea                                                |
| Hardenbergia violacea                                             |
| Kniphofia "Maid of Orleans"                                       |
| Melaleuca pentagona 'Little Penta'                                |
| Myoporum spp                                                      |
| Myoporum parvifolium                                              |

| GROUND COVERS & SUB SHRUBS<br>(cont.):    |
|-------------------------------------------|
| Plectranthus parvifolius                  |
| Rhodanthe anthemoides                     |
| Scaevola aemula                           |
| Sedum sempervirens                        |
| HEDGES:                                   |
| Brunfelsia varieties                      |
| Buxus varieties                           |
| Loropetalum chinensis varieties           |
| Michelia varieties                        |
| Murraya varieties                         |
| Photonia x fraseri 'Little Red Robin'     |
| Viburnum varieties eg odoratissimum       |
| NATIVE HERBS:                             |
| Dianella spp                              |
| Eremophila debilis (syn. Myoporum debile) |
| Lomandra spp (eg Tanika or Nyalla)        |
| Plectranthus parvifolius                  |
| Pennisetum alopecuroides                  |
| Scaevola albida                           |

| NATIVE GRASSES:                               |
|-----------------------------------------------|
| Carex appressa                                |
| Danthonia racemosa                            |
| Dianella varieties Imperata cylindrical       |
| Lomandra varieties incl 'Tanika' 'Nyalla' etc |
| Sorghum leiocladum                            |
| Themeda australis                             |

**Table 3 – Waterfront/Riparian, Bushland Rehabilitation Areas & Bushland Corridors**

In these areas, (within the Camden, Liverpool and Campbelltown LGA's) the Trees, Shrubs, Sub Shrubs and Grasses should be selected from within the Cumberland Plain Woodland (CPW) range.

Qualified Ecologists should also assist in any planting selection for rehabilitation, revegetation or restoration works within these areas.

|                                                                                                                           |                       |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>(a) Littoral Species (littoral means the foreshores, riverbanks and the plants of that habitat).</b>                   |                       |
| <b>Species Name</b>                                                                                                       | <b>Common Name</b>    |
| Baumea articulata                                                                                                         |                       |
| Bolboschoenus fluviatilis                                                                                                 |                       |
| Carex appressa                                                                                                            | Tall Sedge            |
| Cyperus exaltatus                                                                                                         |                       |
| Gahnia sieberiana                                                                                                         | Red Fruited Saw Sedge |
| Isolepis nodosa                                                                                                           | Knobby Club Rush      |
| Juncus usitatus                                                                                                           | Common Rush           |
| Philydrum lanuginosum                                                                                                     |                       |
| Potamogeton tricarlinatus                                                                                                 |                       |
| <b>(b) Macrophyte Species (Macrophyte means the conspicuous plants that dominate wetlands, shallow lakes and streams)</b> |                       |
| <b>Species Name</b>                                                                                                       | <b>Common Name</b>    |
| Baumea articulata                                                                                                         | Jointed Twig Rush     |
| Bolboschoenus fluviatus                                                                                                   | Marsh Club Rush       |
| Carex appressa                                                                                                            | Ephemeral Marsh       |
| Cyperus exaltatus                                                                                                         |                       |
| Eleocharis sphacelata                                                                                                     | Tall Spike Rush       |
| Juncus usitatus                                                                                                           |                       |
| Phragmites australis                                                                                                      | Common Reed           |
| Potamogeton tricarlinatus                                                                                                 |                       |
| Philydrum lanuginosum                                                                                                     |                       |



ONE  
WAY  
→



GREEN L  
COLES  
The Singapore  
Bing Lee  
Medical Centre

## A3 - Material Guidelines

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### Introduction

Leppington Major Centre (LMC) will have a unified and integrated character through a consistency of complementary materials, details, finishes and treatments.

Criteria for the selection and use of materials, elements and finishes within the public domain of LMC are:

- design – items are to be functional and meet the needs of LMC;
- aesthetics – items are to relate to the scale, style and character of LMC;
- availability and ongoing supply – selection of items such as furniture and pavements e.g. should have a long term view of availability and supply for replacement parts and servicing;
- cost – items are to be affordable and within the means of ongoing LMC public domain managers;
- maintenance – items must be easily maintained and not have onerous demanding ongoing maintenance requirements
- life span / longevity – items selected should be looking at as long a lifespan as feasible to ensure LMC public domain managers are not incurred with expensive recurrent replacement costs;
- workability – items should be chosen for their simplicity;
- sustainability – ESD principles of each item selected should be reviewed prior to final selection;
- accessibility – all items must conform to the Australian Disability Discrimination Act 1992 and relevant Australian Standards;
- vandal resistance – all items must be implemented with view to reducing vandalism and a suitable repair programme in place;
- safety - items must conform to relevant codes and Australian Standards.
- Engineering Standards - items must comply with Council's Engineering Specifications

| Item            | Element                                   | Guideline                                                                                                                                                                                                                                                                                              |
|-----------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Concrete Insitu | Joints                                    | <ul style="list-style-type: none"> <li>Expansion and control joints to align with building and alternative path edges where possible.</li> <li>Trip stops or equivalent to be used near trees - refer to Council's Engineering Specifications.</li> </ul>                                              |
|                 | Base Course                               | <ul style="list-style-type: none"> <li>Compaction and material to be determined by consent authority - refer to Council's Engineering Specifications.</li> </ul>                                                                                                                                       |
|                 | Finish                                    | <b>Streets</b> <ul style="list-style-type: none"> <li>Even textured slip resistant surface to finish level Class B.</li> <li>Perpendicular Broom Finish with steel trowel margins</li> </ul>                                                                                                           |
|                 | Colour                                    | <ul style="list-style-type: none"> <li>Main path colour to be standard grey concrete.</li> <li>Feature concrete areas to be determined by consent authority. Dark tones can be used to create contrast with the main concrete colour, but limit area of coverage to reduce heat absorption.</li> </ul> |
|                 | Hazard and Directional Tactile Indicators | <ul style="list-style-type: none"> <li>Stainless Steel studs or product determined by consent authority.</li> <li>Provide 45% luminance contrast in accordance with (AS1428.4)</li> </ul>                                                                                                              |
|                 | Testing/Slip Resistance                   | <ul style="list-style-type: none"> <li>Slip resistance test results required on sample installation.</li> </ul>                                                                                                                                                                                        |
|                 | Maintenance/Cleaning                      | <ul style="list-style-type: none"> <li>High pressure hosing / street sweeper.</li> <li>Maintenance program to be determined by consent authority.</li> </ul>                                                                                                                                           |
| Unit Pavers     | Unit Size                                 | <ul style="list-style-type: none"> <li>To be determined by consent authority. Typically 400x400mm in stretcher bond pattern</li> </ul>                                                                                                                                                                 |
|                 | Base Course                               | <ul style="list-style-type: none"> <li>Concrete slab support base approved by consent authority - refer to Council's Engineering Specifications.</li> <li>Pavers mortared onto concrete base</li> </ul>                                                                                                |
|                 | Joints/Sealants                           | <ul style="list-style-type: none"> <li>Expansion and control joints to align with building and alternative path edges where possible.</li> <li>To be determined by consent authority (Australian Standards)</li> <li>Pavers to be sealed in accordance with consent authority (AS)</li> </ul>          |
|                 | Finish                                    | <ul style="list-style-type: none"> <li>Streets/Pathways: semi-honed.</li> </ul>                                                                                                                                                                                                                        |
|                 | Colour                                    | <ul style="list-style-type: none"> <li>To be determined by consent authority. Mid-tones are preferred to reduce glare and minimise heat absorption.</li> </ul>                                                                                                                                         |
|                 | Hazard and Directional Tactile Indicators | <ul style="list-style-type: none"> <li>Stainless Steel studs or product determined by consent authority.</li> <li>Provide 45% luminance contrast in accordance with (AS1428.4)</li> </ul>                                                                                                              |
|                 | Testing/Slip Resistance                   | <ul style="list-style-type: none"> <li>Slip resistant test results on loose tile samples with sealer and a sample installation.</li> </ul>                                                                                                                                                             |
|                 | Maintenance/Cleaning                      | <ul style="list-style-type: none"> <li>Sealant applied in outdoor dining areas</li> <li>High pressure hosing / street sweeper cleaning.</li> <li>Maintenance program to be determined by consent authority.</li> </ul>                                                                                 |
|                 | Tree Pit Edging                           | <ul style="list-style-type: none"> <li>Steel edging to be installed tree pit perimeter edges to contain pavers. Steel edging to be secured to support concrete slab subbase.</li> </ul>                                                                                                                |

| Item      | Element                           | Guideline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lighting  | Lighting Levels                   | <ul style="list-style-type: none"> <li>Streets/Road Reserves: P1 - P5</li> <li>Pathways (Including Cycleways): P1 - P4</li> <li>Public Activity Areas and Open Space (Excluding Car Parks): P6-P8</li> <li>Connecting Elements (Steps, Stairways, Ramps, Footbridges, Pedestrian ways): P9-P10</li> <li>Outdoor Carparks: P11 - P12</li> </ul>                                                                                                                                                                           |
|           | Poles                             | <ul style="list-style-type: none"> <li>Unpainted</li> <li>Proprietary Banner mounting system for Main Street</li> <li>Height of luminaires mounting determined by lighting engineer</li> </ul>                                                                                                                                                                                                                                                                                                                           |
|           | Luminaries                        | <ul style="list-style-type: none"> <li>Luminaries to be consistent with lighting levels and Light spill requirements.</li> <li>To be determined by consent authority (AS)</li> </ul>                                                                                                                                                                                                                                                                                                                                     |
|           | Light Spill                       | <ul style="list-style-type: none"> <li>Lighting not to spill into residential areas.</li> <li>Lighting to focus on Street and Pedestrian pavements.</li> <li>To be determined by consent authority (AS)</li> </ul>                                                                                                                                                                                                                                                                                                       |
|           | Catenary Lighting                 | <ul style="list-style-type: none"> <li>Catenary lighting can be used in Town Square.</li> <li>To be determined by consent authority (AS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                      |
| Furniture | Bollards                          | <ul style="list-style-type: none"> <li>Bollards to be used to control where maintenance vehicle access is required into pedestrian plaza areas</li> <li>Removable bollards required in emergency access and maintenance access areas.</li> <li>Bollards to be of consistent design.</li> </ul>                                                                                                                                                                                                                           |
|           | Barriers                          | <p><b>Fence/Balustrade</b></p> <p><b>Structural</b></p> <ul style="list-style-type: none"> <li>Designated fencing to be provided along high level road medians and street edges to discourage pedestrian road crossing.</li> <li>Custom or proprietary fencing design to be determined by consent authority.</li> </ul> <p><b>Planting</b></p> <ul style="list-style-type: none"> <li>Designated hedge planting installed at medium level road edges and road medians to discourage pedestrian road crossing.</li> </ul> |
|           | Rubbish Bins                      | <ul style="list-style-type: none"> <li>Rubbish Bins to be provided at pedestrian nodes, including crossing points. All rubbish bins to be of consistent design.</li> <li>Recycling Rubbish Bins to be provided in pedestrian gathering areas.</li> <li>Bin selection should consider bird/animal protection.</li> <li>Rubbish Bins and rubbish removal maintenance schedules to be determined by consent authority.</li> </ul>                                                                                           |
|           | Bench Seating/<br>Feature Seating | <ul style="list-style-type: none"> <li>Bench seating to be provided at regular intervals in the Town Centre Streets.</li> <li>Timber slat seating and backrest supports preferred.</li> <li>Custom bespoke seating can be considered in the Town Square.</li> </ul>                                                                                                                                                                                                                                                      |

| Item              | Element                   | Guideline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Furniture (cont.) | Bicycle Racks             | <ul style="list-style-type: none"> <li>• Provide bicycle racks on hardstand areas only.</li> <li>• Locate clear of pedestrian thoroughfares.</li> <li>• Surface mounted, with tamper-proof fixings. (source: Oran Park PDS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                              |
|                   | Bicycle Rails             | <ul style="list-style-type: none"> <li>• Locate in accordance with Austroads Part 14 – Bicycles.</li> <li>• To be fabricated in accordance with Camden Council Standard Pathway Rails SD06. (source: Oran Park PDS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                   | Drinking Fountains        | <ul style="list-style-type: none"> <li>• Drinking fountains to be universally accessible.</li> <li>• Locate clear of pedestrian thoroughfares.</li> <li>• Drinking fountain to be surface mounted. (source: Oran Park PDS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                               |
|                   | Shelters                  | <p>Shelters and shade structures are to be:</p> <ul style="list-style-type: none"> <li>• provided in open space areas and riparian corridors where sufficient immediate shade or weather protection is not available or where a sense of enclosure is considered desirable;</li> <li>• provided over table and bench settings and table seats where weather protection is desirable;</li> <li>• sited so that roof water is shed into garden areas;</li> <li>• installed on hard wearing surface;</li> <li>• surface mounted, with tamper-proof fixings;</li> <li>• installed level, not at grade with pavement. (source: Oran Park PDS)</li> </ul> |
|                   | Viewing Platforms         | <ul style="list-style-type: none"> <li>• Boardwalks and Viewing Platforms maybe used to:</li> <li>• provide access over spillways or viewing opportunities over water bodies;</li> <li>• provide recreational or interpretational opportunities in riparian corridors or wetland areas;</li> <li>• installed on hard wearing surface;</li> <li>• surface mounted, with tamper-proof fixings;</li> <li>• installed level, not at grade with adjacent surface. (source: Oran Park PDS)</li> </ul>                                                                                                                                                     |
|                   | Tables                    | <ul style="list-style-type: none"> <li>• provided in association with benches in open space areas.</li> <li>• installed on hard wearing surface.</li> <li>• surface mounted, with anti-vandal fixings.</li> <li>• installed level, not at grade with pavement. (source: Oran Park PDS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
|                   | Handrails and balustrades | <ul style="list-style-type: none"> <li>• Handrails and balustrades to be in accordance with BCA and AS 1428. (source: Oran Park PDS)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                    |                      |                                                                                                                                                                                                                                                                                                                            |
|--------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Street Trees       | Tree Guards          | <ul style="list-style-type: none"> <li>Tree Guards to be installed in major pedestrian gathering intersections. To be consistent design along street.</li> <li>To be determined by consent authority.</li> <li>Root guards to be installed.</li> </ul>                                                                     |
|                    | Tree Pits            | <b>Pit Covers</b> <ul style="list-style-type: none"> <li>Pit covers to be consistent along street and be flush with adjacent paving.</li> <li>To be determined by consent authority.</li> </ul> <b>Edging</b> <ul style="list-style-type: none"> <li>Steel edging required for trees in Unit Paving and Asphalt</li> </ul> |
| Playgrounds        | Playing Surface      | <b>High use areas (eg. District Playground)</b> <ul style="list-style-type: none"> <li>Rubber softfall to Australian Standards</li> </ul> <b>Low use areas (eg. Local Playground)</b> <ul style="list-style-type: none"> <li>Bark mulch to Australian Standards</li> </ul>                                                 |
|                    | Playground Equipment | <ul style="list-style-type: none"> <li>Refer Landcom Open Space Design Guidelines (2008), p25-26.</li> </ul>                                                                                                                                                                                                               |
| Exercise stations  | Exercise Equipment   | <ul style="list-style-type: none"> <li>Exercise equipment to cater for a range of age groups.</li> <li>Provide proprietary items to Australian Standards installed to manufacturer's recommendations.</li> </ul>                                                                                                           |
| Tactile indicators | Pedestrian walkways  | <ul style="list-style-type: none"> <li>Provide tactile indicators on pedestrian crossing points as required by the consent authority. Consider other users impeded by tactile indicators such as wheelchairs and prams. Coordinate locations with pavement layout.</li> </ul>                                              |



02

## **A4 - Vision Workshop**

### **Vision Workshop**

A Vision Workshop was held with key stakeholders from Camden and Liverpool City Council representatives on Tuesday 3rd April 2012 at the Narellan Administration Centre in Narellan.

The workshop was facilitated by the AECOM project team: Greg Burgon, Nicole Dennis, Katie Joyner and Cameron Greatbatch.

The Department of Planning and Infrastructure was represented by Paul Robilliard and Matt Cooper.

The workshop was attended by :

- Heath James (Camden Council)
- Hendro Harsojo (Camden Council)
- Mairead O'Connell (Camden Council)
- Richard Smith (Camden Council)
- Lila Sawko (Camden Council)
- Denise Pritchard (Camden Council)
- Cheryle Yin Lo (Camden Council)
- Noelene Rudolf (Camden Council)
- Barry Millwood (Liverpool Council)

The workshop consisted of group exercises designed to draw out and define the vision for Leppington Major Centre from the group. This was followed by a presentation and discussion of 'Three Big Moves' that AECOM pitched as key structural solutions to existing issues under the Indicative Layout Plan as it stood in April 2012. There was then a time for general feedback and comments on the vision and identification of issues and opportunities from the group.

### **Desired Future Place Character Exercise**

The group was asked to call out answers to the question 'If Leppington Major Centre was a guest at a dinner party, what would they be like?'

There was a variety of responses describing Leppington's character presently and how they imagine the centre to be in the future. Responses also included descriptions of the existing and expected future community.

The following page presents the responses given.



# Who is Leppington?

## Place Character Exercise - Who is Leppington?

### Demographics

- Leppington should be a place for young couples, perhaps those who have done the city life and now want a larger house. Maybe they have one young child
- We see extended families living in the area, perhaps grandparents moving in with existing local families
- We anticipate a lot of second generation Australians in the area
- Many may speak English as a second language
- Many people stay in the area when they move house, possibly because of family and community ties
- Families do feel connected to the area - elders have established family
- Around 50% in the school system speak Cantonese. These young people are likely to buy in the area in the next 10 to 20 years
- Local people are not necessarily low-income earners
- Local market garden owners may be likely to stay in the area, but will form a small proportion of the eventual new population
- This is not likely to be a transient population, when families grow they generally stay and upsize, or upgrade their home
- We should cater for a variety of price-ranges and improve diversity - cater for elders and downsizers

### What is the attraction of Leppington?

- The railway station will be a key attractor
- People who study or work in the city currently have to go from Camden to Campbelltown into the city
- We should aspire to create a walkable city
- Many people have longer commutes to work and therefore less free time. Camden is on the opposite side of the city to the Global Arch
- Cafe culture is quiet. Many local people don't have the time to spend in the local area during the week as they are likely to be working or commuting. This reinforces the desire for a mix of uses and to provide local employment
- There appears to be a very different mentality between Narellan and Camden. There is a strong sense of local loyalty in each of these areas
- We should aim to plan for sports clubs, cafes and markets next to the town centre, to try and activate the town centre during different times of the week, and night and day
- The local library programs are very popular, however there is a lack of facilities/functions for younger people. Many may go to the pubs in Camden. There is little of interest in terms of shopping, clothes shops etc. Many will go to the clubs in Campbelltown
- There is a lack of facilities such as bowling clubs and RSLs in the SW
- We should not allow for big box type retail to dominate the town centre. Loading docks on the main street can kill the pedestrian environment
- We must allow development to happen. Small lots must amalgamate, but it is often too expensive for a wider vision to come to fruition. We must be very wary of this
- Implementation is really important. The vision must be realistic and achievable

### Group Typology Exercise

The group split into three groups of between three to four people. They were each asked to view a set of flashcards which consisted of a variety of photographs. The set of images comprised of public domain typology examples; some which may be perceived as successful and some as unsuccessful. The group was asked to select cards that represented their vision for Leppington Major Centre and to explain their views in regard to function and use, social interaction and sensory experience and cultural and traditional elements.

The groups responses are summarised as follows:

#### Group A

##### Streets

- The street examples chosen demonstrated good connections, which were active with passing traffic. The streets were shared with pedestrians and cyclists
- The group preferred examples that were active, landscaped and screened

##### Parks

- The park examples were chosen because they had active edges
- They suggested a festival atmosphere and social interaction
- There was shading, and a lot of activity

##### Plazas

- The group liked the sense of activity
- The plazas chosen were fairly small and intimate
- The spaces were active and vibrant
- The plazas were connected to the street
- The group liked to see outdoor trading in the plaza spaces. Night and day activities were preferred
- The group preferred to see seating in the shade and with hard surfaces

#### Group B

##### Streets

- The group preferred examples of mixed-use streets
- Bring cars, bikes and pedestrians together
- Encourage cars along streets to facilitate night-time surveillance
- Layer uses, ie shop-top housing
- Make streets bike-friendly

##### Parks

- The group preferred the multi-function of the chosen park spaces be the use of leads
- Public art should be encouraged in park spaces

##### Plazas

- The group liked the examples of children's play spaces
- The spaces should be large to bring together the different streams of the community
- Encourage the use of public art
- The group preferred examples where trees and other planting was evident
- Community garden may be an opportunity to link with the history of market gardens in the area

## Group C

### Streets

- There was a preference for pedestrian and cyclists together on the street
- Examples were preferred where people were encouraged to wander. We should be mindful of the uses and edges between land uses to encourage passive use of the street
- The group referred to streets that appeared to be safe environments for pedestrians to cross the road
- Smaller-scale streets were preferred where there were heritage elements

### Parks

- The parks selected showed social gathering and interaction
- They demonstrated multi-use of space
- Planter beds were picked-out as they contributed to the open space, as were community gardens. There might be the opportunity to link to past uses of the land by these means
- The group liked the informal spaces for picnics and dog-walking
- Street furniture was preferred where they encouraged social interaction. The interface between cyclists and pedestrians was preferred
- The group favoured the multi-function of stormwater drainage

### Plazas

- The group liked the principle of flow-on uses into the plaza spaces, for example cafes
- There is the opportunity to mix uses in the plazas
- Encourage seating and planting to be welcoming to people to want to simply stop and enjoy the space

## General Comments

Following the group typology exercise there was some discussion around the principles behind some of the successful and unsuccessful precedent examples. Key notes were:

- Some of the European examples in particular have had many years to evolve and this is difficult to replicate when designing a new centre
- Could perhaps use more cultural and traditional examples - Camden Council offered to provide some photographs
- Need to keep in mind that this is Western Sydney and what implications this may have on the need for shade, and where the prevailing winds come from
- Investigate the use of colonnades
- Investigate locating plazas facing onto the parks. This might be better for surveillance at night with active frontages
- Consider providing larger plazas for monthly local markets and think of how these spaces are used for the remainder of the month.
- Cycle routes need destinations and should link to the M7

## Three Big Moves

Greg took the opportunity to suggest some changes to the draft Indicative Layout Plan that could assist in achieving a high quality and more functional public domain. These were:

1. The reduction of open space around the heritage item on Byron Road and the relocation of the sports field to nearer the town centre
2. The nomination of the main street being two blocks west of Rickard Road
3. The suggested revision of the town centre block structure and sizing to allow for larger block sizes

The group had a series of queries, comments and suggestions related to each of the Three Big Moves:

- The dual function of sports facilities and drainage/detention doesn't always work. The

facilities can remain unusable for a long time after it has rained

- PR suggested that the stream categories are potentially being revised and we may not require this land to act as drainage. We may require less basin area
- There was concern regarding the backs of properties facing the creek in the current plan configuration. Opening up the creek to the sports field will help with this matter
- We don't want to be providing too much open space, there is already an over provision and this impacts on council in terms of upkeep and maintenance
- We should look at locating perimeter roads along the extent of the riparian corridor
- We need to address how the Main Street will be staged and how it will operate in the early stages of development in particular. This will be a challenge as Rickard Road is an existing street. How will we ensure that the loading and service access to retail is where we envisage it to be in the long term?
- Be mindful of critical mass. The DCP must control and guide opportunistic development, particularly in the early stages so that examples like how the Narellan town centre was developed can't happen again

### Refining the objectives

At the end of the workshop the group reflected on what was discussed, and was asked to revisit and refine the vision for Leppington. Thoughts included:

- Think about where we are going in terms of technology in the future and how we can facilitate this
- Consider lighting and integrated systems, interactive play and public art
- Public art strategies have to be integrated from early planning Stages
- Consider theming for public art strategies
- Look into playground companies that are designing play areas for the next generation
- Think of sustainability and the future
- Keep in mind the topography
- Think about who will pay for it
- Active streets may be more difficult to achieve in the future – people increasingly use on-line

shopping - centres must be more than retail destinations to be successful

- There is also the increasing trend to drive to one place, shop there and leave - need to devise ways to draw people out and through the centre
- It may be better to mix civic and retail uses up rather than have them on separate sides of the railway line
- Encourage a good mix of uses, and allow flexibility in mixed-use zones
- Consider permitting convenience shopping in the civic side to help encourage visitors to perform multiple tasks in the town centre

### Key Findings

The workshop revealed the following key findings:

#### People

- The expected incoming community will have a large proportion of families, extended families, high proportions of people with English as a second language in particular Cantonese speaking
- The community is not necessarily all low income, there is a diversity
- There is currently a lack of facilities and entertainment for youth and young adults
- The centre needs to provide for the diversity of the community by providing a public domain that caters to varying price points and cultural uses of public space
- There is a lack of free time in the local community particularly during weekdays due to long commuting times to employment - this affects the use of the public domain

#### Place

- There are currently strong local identities in regards to place - particularly between Narellan and Camden
- Need to understand staging and a strategy that is realistically implemented - principles must be consistent and easily stages
- The railway station will be a key attractor and destination which will support a variety of additional uses and services

- The centre needs to be walkable and people focuses in design – it should cater to the pedestrian experience
- Need a variety of activities and uses in order to achieve place activation

### **Streets**

- Streets should be well connected, active, vibrant and people focused
- There should be a strong focus designing and planning for the pedestrian and cyclist
- Streets should be mixed use
- Shop top housing should be encouraged
- Need to beware of vacant laneways and spaces in between places and destinations
- Passive uses should be encouraged on the street
- Smaller scale streets were preferred overall by the group

### **Parks**

- Parks with active edges that provided a variety of activities were preferred
- Parks which encouraged social interaction were highly desired
- Public art was requested in parks, integrated into play equipment, furniture and historical interpretation
- A community garden was desired to encourage social interaction and mark the past use of the area as market gardens
- Stormwater open spaces should have a variety of uses and functions

### **Plazas**

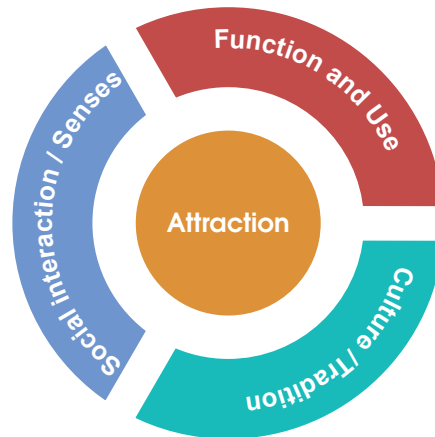
- Plazas that were active and vibrant, connected to the street and intimate were preferred by the group
- Plazas that included trading out and a variety of activities and complementary uses were desired, eg cafes, markets and vendors
- Plazas should provide day and night time activities and uses
- Children's play can be integrated into plazas including a larger proportion of the community
- A community garden could be integrated into a plaza as an historic element
- Plazas were desired that create a sense of welcome and invited people to stop, sit and enjoy

## Leppington Major Centre

PUBLIC REALM STRATEGY  
VISION WORKSHOP

### STREETS

Work in groups to choose the cards that best represent the character, look and feel of streets that you would like to see at Leppington Major Centre.



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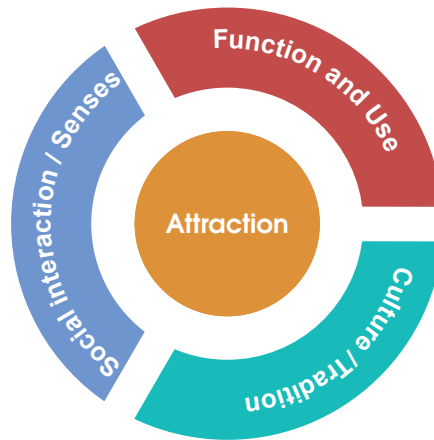


## Leppington Major Centre

PUBLIC REALM STRATEGY  
VISION WORKSHOP

### PLAZAS

Work in groups to choose the cards that best represent the character, look and feel of town square that you would like to see at Leppington Major Centre.



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## Leppington Major Centre

PUBLIC REALM STRATEGY  
VISION WORKSHOP

AECOM

### PARKS

Work in groups to choose the cards that best represent the character, look and feel of the parks and open space that you would like to see at Leppington Major Centre.

