Chapter B9 – Landscaping

1.0 Introduction

1.1 Scope of this Chapter

This Chapter is applicable to the following types of development within the Kempsey Local Government Area:

- industrial development;
- commercial development (where the placement of landscaping is possible);
- tourist development;
- multi-dwelling housing;
- residential flat building developments (i.e. three or more dwelling units);
- subdivision, particularly those involving the opening of a new road; and
- any development adjacent to or impacting on public recreation areas.

Note - Council will exercise discretion in relation to whether a landscape plan is required or not.

1.2 Relationship to Other Chapters of this DCP

The provisions contained in Chapters included in Parts C, D, E and F of this DCP override the provisions of this Chapter to the extent of any inconsistency.

Chapters in Parts C – F of this DCP will include more detailed requirements, such as:

- minimum landscaped area;
- specific Master Plans or themes to be compatible with; and
- specific height and other requirements for plantings.

2.0 Chapter Objectives

The objectives of this Chapter are:

a) To provide the guidelines for landscaping associated with the development of land in the Kempsey Shire local government area.

b) To protect, enhance and maintain key features of the natural environment.

c) To encourage plant selection that is sensitive to local climate, soils, topography, natural features, local environmental conditions and its intended function.

d) To facilitate landscaping as an integral component of urban design.

3.0 Guidelines

3.1 Types of Landscape Plans

There are two types of Landscape Plans used in development assessment, being:

a) Landscape Concept Plans; and
b) Detailed Landscape Plans.

Landscape Concept Plans graphically outline the strategy, objectives, significant site features and give a broad overview of the landscaping concept to be provided in the development. This plan should give an indication of earthworks, surface treatments (eg paving), the general nature of vegetation (ie groundcover, shrubs, trees) to be retained and provided on site and the plant's general location.

A Detailed Landscape Plan comprises a detailed plan, drawn to scale, a plant schedule and maintenance schedule. The Detailed Landscape Plan should clearly define the species of all vegetation to be retained/provided, pot sizes, surface treatments, irrigation measures and clearly define the maintenance regime.

4.0 Development Requirements – General

4.1 Landscape Plans

Desired Outcomes

DO1 – A Landscape Concept Plan is submitted to Council in conjunction with the application for development consent, for appropriate scales of development.

DO2 - A Detailed Landscape Plan is submitted and approved prior to issue of a Construction Certificate where required as a condition of development consent, or where otherwise required by Council.

DO3 - Landscape plans provide a design that will satisfy the General Principles of Good Landscaping described in Section 3.2 of this Chapter.

Development Requirements

4.1.1 Triggers for Submission of Type of Landscape Plan

a) Landscape Concept Plans are required to accompany Development Applications (DAs) for:

- industrial development;
- commercial development (where the placement of landscaping is possible);
- tourist development;
- multi-dwelling housing;
- residential flat building developments (i.e. three or more dwelling units); and
- subdivision;
- any subdivision involving the opening of a new road;

- any development adjacent to or impacting on public recreation areas; and
- any other development as determined by Council.

Note - Council will exercise discretion in whether a landscape plan will be required or not.

b) Detailed Landscape Plans are required prior to issue of a Construction Certificate, or with the development application, if determined by Council.

c) Landscaping will need to be installed prior to the issue of an Occupation Certificate or Subdivision Certificate. In the case of larger scale development, Council may ask for a Works-as-Executed drawing prior to the issue of the relevant certificate or following a reasonable maintenance period.

4.1.2 Requirements for Landscape Concept Plans

a) The information to be included in a Landscape Concept Plan must include the following as a minimum:

- property boundaries, any related DA number, adjoining land uses, details of any protection and/or conservation orders relating to the site;
- North point and scale (eg 1:100);
- contours and topographical features;
- layout and area calculations of proposed planting areas;
- any proposed excavation (cut/fill) associated with development;
- proposed buildings, surface and edging treatments including paving, roads, car parks, driveways, crossovers;
- fencing and retaining walls including style (type) and height;
- any existing trees that are to be retained as well as any existing trees that are to be removed and the reasons for removal;
- an indication of the type and location of any required tree protection measures;
- proposed tree species and proposed plant species palette;
- overland flow paths, drainage, and detention basins;
- open space within and adjoining the development, including access and links to open space;
- service connections;
- street tree placement including species; and
- landscape design principles.

b) Landscape Concept Plans are to demonstrate how the relevant requirements of this chapter and other relevant chapters are to be satisfied.

4.1.3 Requirements for Detailed Landscape Plans

a) The information to be shown on a Detailed Landscape Plan and accompanying documentation must include the following as a minimum:

i) The drawings:

- All the information required for a Landscape Concept Plan;
- proposed finished surface levels and falls;

- existing trees to be retained and details of protection strategies during construction;
- detailed design of all landscape features: retaining walls, masonry walls, fences, surface finishes;
- proposed vehicle and pedestrian access circulation patterns;
- details of soil preparation of proposed planting and turf areas;
- identify proposed turf and provide cultivation notes for installation;
- planting detail;
- tree planting details, including details of staking/cages;
- site drainage including subsurface (AG) drainage and surface preparation, overland flow paths, field gullies and detention basins;
- water tanks to meet Council requirements;
- any drying courts;
- taps: minimum one per outdoor space;
- street tree placement;
- position of all services and utilities;
- position of rubbish bins; and
- proposed irrigation system.

ii) The Specification:

- Details of all trees, shrubs and groundcovers to be provided and retained, with details identifying the following:
  - Common name, botanical name, pot size/height of plant upon installation, the expected mature height and canopy spread of the plant at maturity and quantity – for all plants to be used;
  - Cultivation notes for installation;
  - Minimum planting standards for each plant/plant group; and
- tree protection measures for:
  - protection of existing trees/vegetation to be retained; and
  - any new planting, if necessary.

b) Detailed Landscape Plans are to demonstrate how the relevant requirements of this chapter and other relevant chapters are to be satisfied.

4.2 Retention of Existing Trees and Established Vegetation

Note - This section should be read in conjunction with Chapter B10 – Tree Preservation and Vegetation Management.

Desired Outcomes

DO1 - Existing significant vegetation and ecological values are retained and protected, as far as practical.

DO2 - Trees and vegetation selected and maintained for retention are chosen taking into account the General Principals of Good Landscaping described in Section 3.2 of this Chapter.

Development Requirements

a) Species selected for retention are to be suitable for the site conditions.

b) Mature vegetation that has habitat, civic or heritage values shall be conserved.

c) All works around existing trees are to comply with Australian Standards AS 4970-2009: Protection of Trees on Development Sites. A Certificate of Compliance from a certified or registered arborist may be required to be submitted to the Consent Authority upon completion of works.

d) Tree protection fencing shall be erected prior to the commencement of any construction works. Materials and equipment are not to be stored within the fenced tree protection zone.

e) Tree protection measures are to be installed and maintained around trees to be retained in accordance with the relevant Australian Standard AS 4970-2009: Protection of Trees on Development Sites.

f) Any pruning or trimming of vegetation is to be in accordance with AS4373: Pruning of Amenity Trees. Damage to any trees as a result of pruning is to be rectified where possible. A Certificate of Compliance from a certified or registered arborist may be required to be submitted to the Consent Authority upon completion of works.

g) Plants that are known to drop large limbs should generally be removed, or kept away from carparking and development areas to minimise damage.

4.3 Landscaping Near Utility Services

Desired Outcome

DO1 - The location and habit of tree planting must not interfere with the function and accessibility of any adjacent utility services.

DO2 - Maintenance access points must be considered and accommodated for in the site planning and design process.

DO3 - Landscaping near utility services is undertaken in a manner consistent with the General Principles of Good Landscaping described in Section 3.2 of this Chapter.

Development Requirements

a) Species mature height and root spread must not interfere with or compromise overhead and underground utility assets, including stormwater inlet pits.

b) Tree planting must be a minimum of 2m from any trunk water easements and offset 4m from any sewer main or inspection chamber.

c) Landscaping near electric lines or substations, is designed and developed to achieve the following:

(i) On land beneath, or within 5m of land beneath, an electric line , or within 5m of a substation boundary, any vegetation at maturity or landscaping structures or works do not exceed 4m in height;
(ii) Otherwise, vegetation is planted in a position that is further from the nearest edge of the land beneath electric line or substation boundary than the expected maximum height at maturity of the vegetation; and
(iii) On land adjoining an electricity substation boundary, the vegetation foliage at maturity is not within 3m of the substation boundary. However, where a substation has a solid wall along any part of its boundary, foliage may extend to, but not above or beyond, that solid wall, provided there is personnel and vehicular access available to the electricity works.

d) Plant species should be carefully selected to meet service authority requirements within easements (Refer to Appendix E for a list of plants that are unsuitable to be planted near sewer lines).

4.4 Consideration of On-site Stormwater

Desired Outcomes

DO1 - Landscaping provides an infiltration area for some of the stormwater runoff from a site.

DO2 – Appropriate sediment erosion controls are employed, where required.

DO3 - Landscaping is provided in accordance with any Stormwater Management Strategy and/or Water Sensitive Urban Design Strategy applicable to the site.

DO4 - Landscaping takes into consideration on-site stormwater management in a manner consistent with the General Principles of Good Landscaping described in Section 3.2 of this Chapter.

Development Requirements

a) Landscape design takes into account and does not adversely disrupt the flow of water along overland flow paths.

b) Landscaping maximises opportunities for on-site infiltration by:

(i) Minimising impervious surfaces and incorporating semi-permeable paving products;
(ii) Falling hard surfaces towards surfaces such as turf or mulched areas;
(iii) Maximising opportunities for turf and planting areas; and
(iv) Aligning planting areas parallel to contours to slow the flow of surface water.

c) Provision for drainage is incorporated through treatments such as sub-surface drains, swales, ponds and infiltration cells.

Note – If waterbodies are being constructed, they should be designed to have shallow edges, or include other safety measures, for community safety reasons.

d) Sediment and erosion control measures are undertaken in accordance with the relevant requirements of Chapter B4 – Earthworks and Sediment Erosion Control.

e) Planter boxes on podiums and building forecourts are plumbed to the stormwater system, in such a manner to mitigate any issues associated with erosion and contamination.

4.5 Crime Prevention Through Environmental Design

Desired Outcome

DO1 - Risks to personal safety and the potential for crime, vandalism and fear are reduced through design that has been informed by Crime Prevention Through Environmental Design (CPTED) principles in relation to:

- Surveillance;
- Access control;
- Territorial reinforcement; and
- Space management.

Development Requirements

Refer to Chapter B15 – Crime Prevention Through Environmental Design (CPTED) for development requirements.

4.6 Development Design Specifications

Desired Outcome

DO1 - Landscape and streetscape design generally conforms to the Development Design Specification D13 – Land and Street Scape Design of Council's Engineering Guidelines for Subdivision and Development.

DO2 - Landscaping generally conforms to the Development Construction Specification C273 – Landscaping of Council's Engineering Guidelines for Subdivision and Development.

Development Requirements

a) Landscape and streetscape design complies with the provisions of Development Design Specification D13 – Land and Street Scape Design.

b) Vegetation on slopes and drains complies with the provisions of Development Construction Specification C273 – Landscaping.

c) Landscape planting complies with the provisions of Development Construction Specification C273 – Landscaping.

5.0 Development Requirements – Street Reserve

5.1 Street Trees and Street Landscaping

Desired Outcomes

DO1 - Landscaping within the road reserve, particularly street trees, is provided to:

- Enhance the scale and density of the existing urban landscape;
- Compatible with the hierarchy and function of the street;
- Contribute to the overall amenity of the street and the region;

DO2 - Landscaping within the street reserve, particularly street trees, are low maintenance in terms of:

- not requiring significant supplementation by water or nutrients; and
- minimising adverse impacts on pavements, infrastructure and services.

DO3 - Street trees are provided at an appropriate rate taking into consideration:

- the size of trees being planted;
- the size of lots within the locality/subdivision; and
- the general character of the area (eg rural residential, industrial, commercial or residential).

DO4 - Street trees and street landscaping are provided in a manner consistent with the General Principles of Good Landscaping described in Section 3.2 of this Chapter.

Development Requirements

Master Plan

a) A street tree masterplan will be required for residential (including large lot residential) subdivisions (more than 10 lots) on green-field sites where a public road is proposed.

Species Selection

b) Species are encouraged to be selected from the Kempsey Indigenous Street Tree and Open Space Species Lists~~,~~ and in consultation with Council.

c) Street tree species selections are to be compatible with the theme established by existing street trees, where relevant.

d) Species and materials are used that minimise the use of water.

e) Trees are to be used that have minimal branches on the lower and mid tree trunk (to protect pedestrian and driver visibility).

Location

f) Street trees shall be provided along all road frontages at a minimum rate of 1 per 20m interval.

g) The development must ensure that all street tree plantings at their mature growth height and form will not affect solar access, this is to be demonstrated by providing Council with shadow diagrams.

h) Street trees are to be planted a sufficient distance from driveway crossovers so as to not have an adverse impact on driver visibility or required sight distances.

i) Street trees are to be planted:

(i) A minimum of 1.5m from the back of kerb;
(ii) A minimum of 4m from any domestic sewer or water service; and
(iii) A minimum of 10m from any street light;
(iv) Where these distances cannot be achieved, alternative plantings as approved by Council may be installed;
(v) Where a lesser distance is required, root barriers may be required to be installed to protect roads, pathways, driveways and other infrastructure.

APPENDICES:

Appendix A: Planting Diagrams

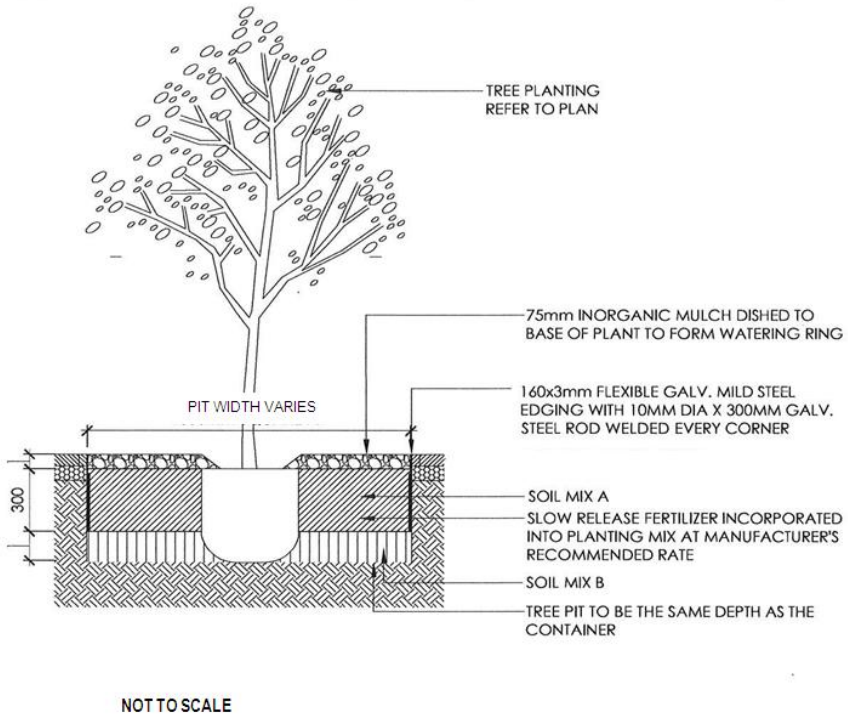

Figure B9-3: Semi-mature Tree in Tree Pit Detail

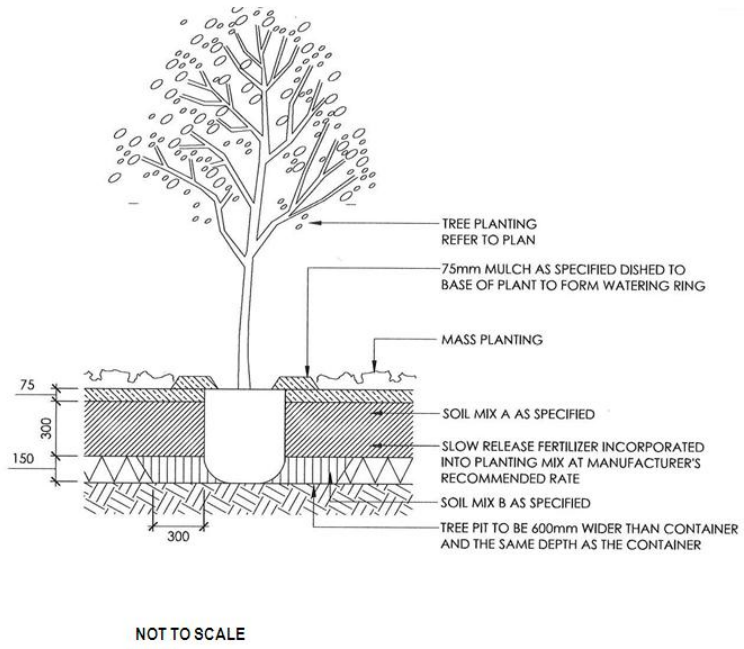

Figure B9-4: Semi-mature Tree in Tree in Mass Planting or Turf

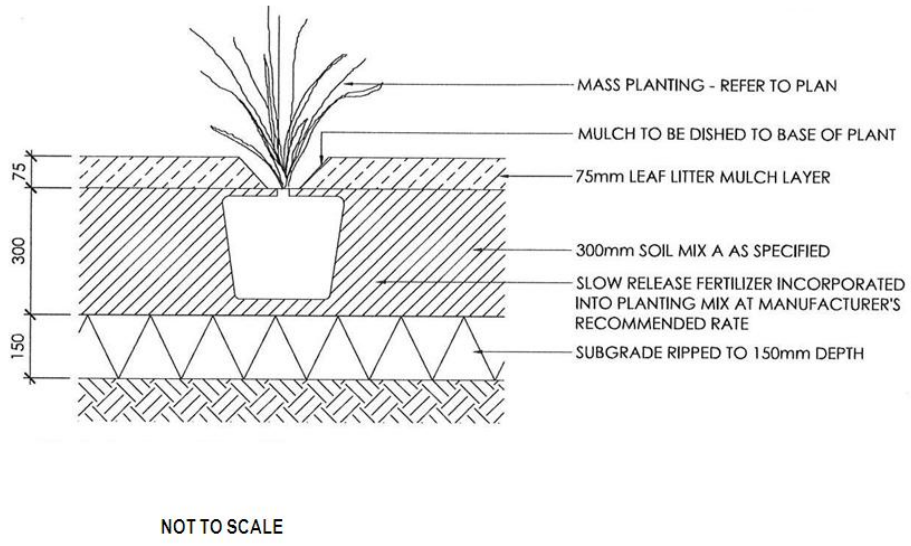

Figure B9-5: Mass Planting Detail (5 litre)

Appendix B: Tree Protection Measures

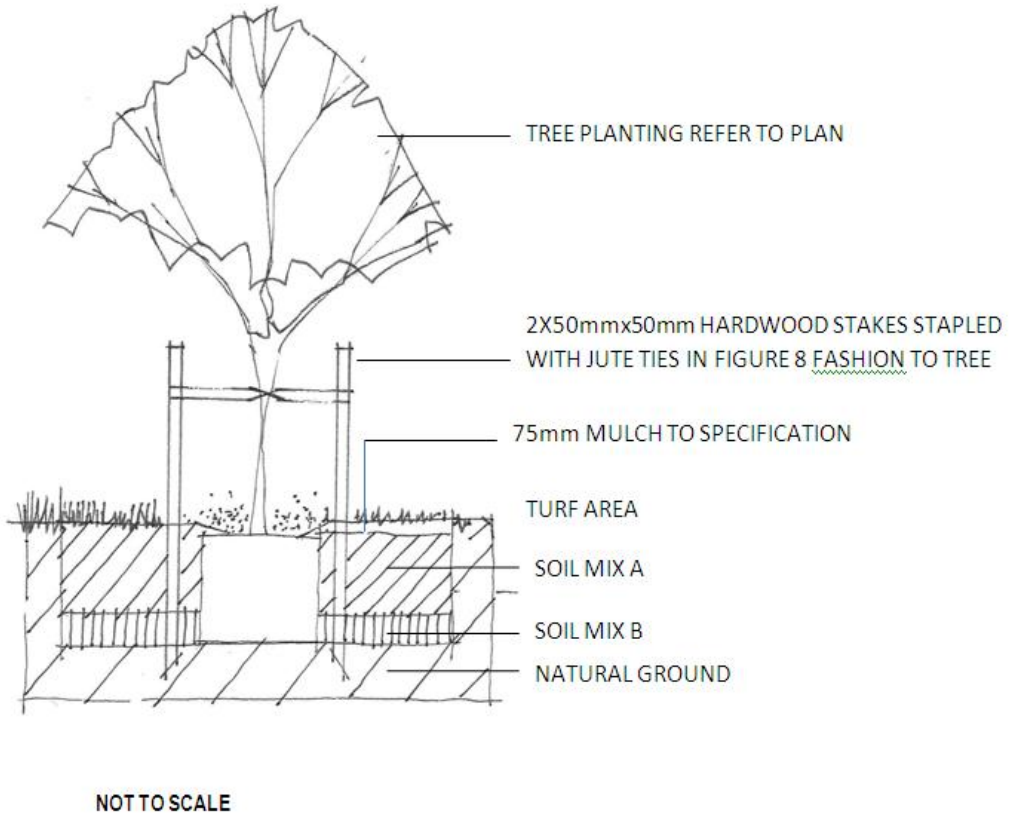

Figure B9-6: Tree Staking Details for Street Trees for Temporary Protection

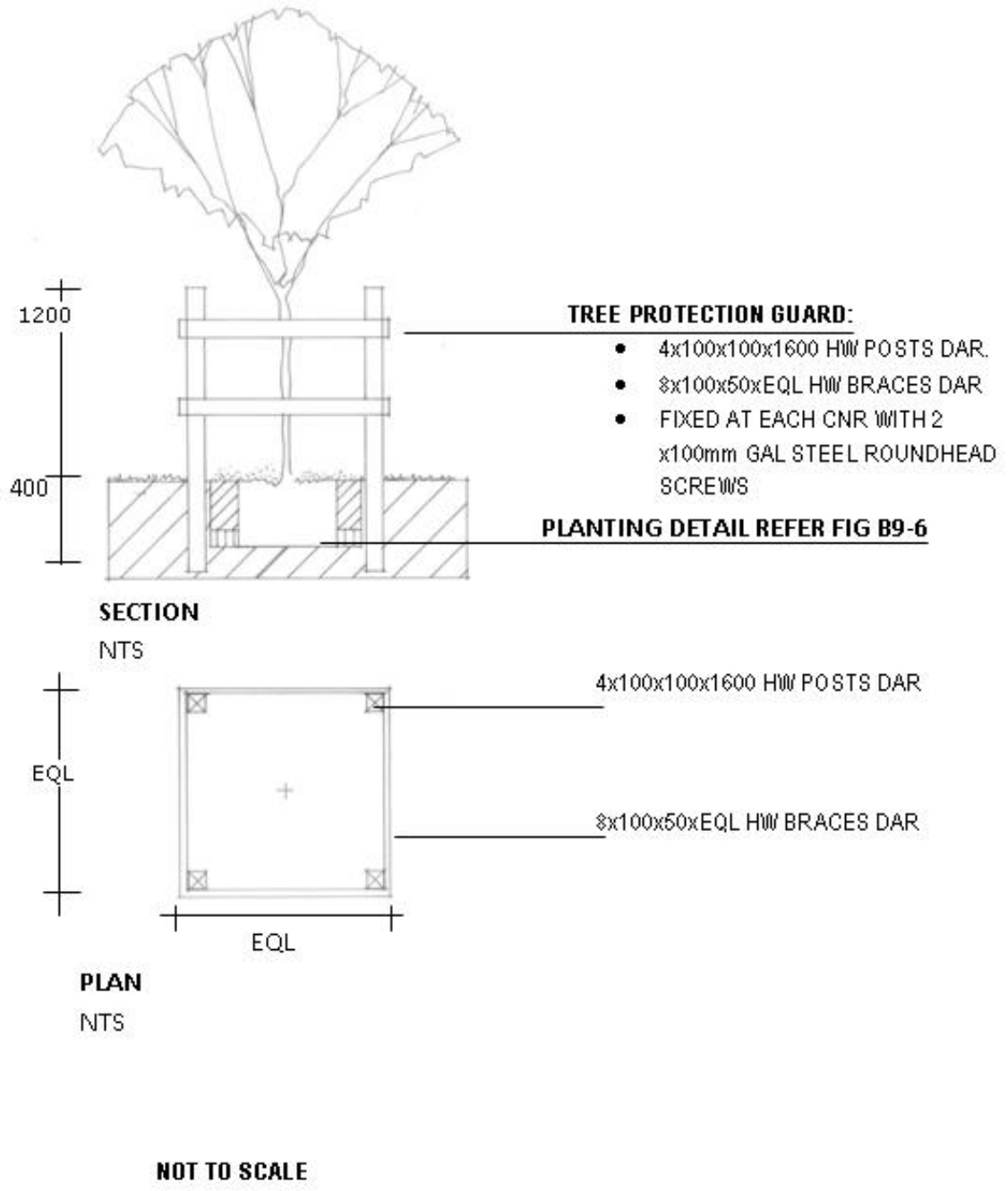

Figure B9-7: Tree Protection Guard Detail for Permanent Protection

Appendix C: Indigenous Species List for Street Trees

1.0 Introduction

According to the National Botanic Gardens, across Australia, the origin of the largest proportion of environmental weeds are from horticulture (Fagg 2007). Of these, those that are the most threat to biodiversity 65% are of horticultural origin (Weeds CRC 2007). The economic costs of weeds exceeds $4 billion per annum (Australian Weeds Strategy 2006). In recognition of the significant impacts across all land tenures the Department of Industry and Investment has developed the Invasive Species Plan. Scientific appraisal of the risk posed by individual weeds and their current extent have been conducted through a weed risk analysis algorithm. Based on this best data, the analysis results lead to the following hierarchical response:

a) prevention of new incursions;
b) early detection leading to eradication and containment of new incursions; or
c) reduction of the impacts of widespread infestations (at two levels):

    (i) defence of key agricultural, biodiversity and amenity assets whilst biological controls are sought for more effective integrated landscape-scale control of widespread weeds.

    (ii) Continued importation of 'sterile varieties' that still none-the-less contribute genetic material to the wider weed meta-population undermines these efforts.

Within the Kempsey (KSC) Local Government Area (LGA), whole landscapes are completely overrun by environmental and noxious weeds. For example Privet on in the Upper and Lower Macleay, Camphor Laurels in the floodplain and Bitou along our coasts. To date despite all of the resources available to the Council, no noxious or environmental weed has been completely eradicated. In the meantime, new species are introduced by the horticultural and nursery industry as well as by gardeners which results in multiple new infestations and new exotic species incursions being recorded across the LGA each year. Of the ten new weeds recorded in Australia annually two thirds are garden species (http://www.weeds.gov.au/weeds/where/index.html). The continuation of the status quo is clearly economically, environmentally and socially unsustainable.

For several reasons, the publicly landscaped estate has a disproportionate role to play in weed incursions and the spread of new weed species across the LGA. Because of the amenity, beauty and high visibility of past plantings by the various bodies, public landscaping has a strong influence on what people do in their own back yards. Particular arrangements and species compositions are closely watched by gardeners and rapidly emulated. In addition, the location of much of the plantings along roadways and in parks (often near to streams or along coasts) means that introduced species have a short distance to travel before they

move out of the intensively managed landscape and begin their destructive invasive role in the wider countryside. This along with the favoured use of species with delectable fruits has meant that many horticultural species are spreading rapidly into the hinterland from our publicly landscaped areas, urban gardens, rural residential and permaculture sites. In recognition of our legislative and regulatory responsibilities (see below), Council's adoption of the use of indigenous native species for landscaping in public areas under Development Control Plan 2013 is a key response to this ongoing economic, environmental and social problem. The following list of indigenous species that are suitable for street trees that are also available as NatSpec plants has been developed by council from the species that occur naturally across the Local Government Area.

2.0 How to Use this List

a) Determine the site's past vegetation community:

- Broadscale vegetation mapping of the Shire has been carried out;
- If unsure of the site's past vegetation community, contact Council for advice on the site's vegetation community that has been determined on the mapping.

b) The vegetation community (in the list below) is matched to the tree species that are best suited to planting sites.

3.0 When to Use this List

Wherever street trees are required for urban plantings and other public lands (parks, playgrounds, pedestrian thoroughfares etc.).

If the planting sites are hospitable (i.e. soils are largely intact) use only those species from the vegetation community that once used to occupy your site.

If the site is highly modified and 'plant-hostile' where soils are scalped, poor, compacted, droughty or subject to poor drainage as a result of development (such as commercial/industrial sites, paved/concreted carparks and 'intra-road plantings such as medians, street blisters and roundabouts) then any species from the list below may be included irrespective of the site's original vegetation community. This expands the palette of local species that may be 'fit for purpose' and thereby ensure successful plantings on these plant-hostile sites.

4.0 Legislation, Regulations, Policies

4.1 Federal

a) Environmental and Biodiversity Conservation Act (1999):

- Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants (2010).

b) National Strategy for Conservation of Australia's Biological Diversity (1996):

- Objective 3.3:
  - Control the introduction and spread of alien species and genetically modified organisms and manage the deliberate spread of native species outside their historically natural range";
- 3.3.4 Translocated species:
  - Promote the use of local indigenous species in rehabilitation;
  - discourage the use of non-local native species in revegetation schemes, large-scale landscaping schemes and rehabilitation programs.
  - Exercise caution in the commercial use of any new non-local native species.
  - Develop procedures to ensure that their establishment and propagation will not threaten the integrity of existing ecological systems.

c) Weeds of National Significance (WoNS) listed in 1999 :

- at least 7 of the 20 thus far nominated are of horticultural origin. Currently under review.

d) Australian Weeds Strategy (2007)

4.2 New South Wales

a) Noxious Weeds Act (1993).

- Currently under review with a proposal to restrict horticulture and nursery industry to a 'White List' of species not known to be invasive, all others being prohibited.

b) Threatened Species Conservation Act (1999):

- Key Threatening Processes:
  - Invasion and establishment of exotic vines and scramblers;
  - Invasion and establishment of Scotch Broom (Cytisus scoparius);
  - Invasion of native plant communities by bitou bush & boneseed Weed;
  - Invasion of native plant communities by exotic perennial grasses;
  - Invasion of Native Plant Communities by African Olive Olea europaea L. subsp. cuspidata; Invasion, establishment and spread of Lantana (Lantana camara L. sens. Lat).

c) New South Wales Invasive Species Strategy 2008-2015.

4.3 Regional

a) Northern Rivers Biodiversity Management Plan (2009).

b) Draft Mid North Coast Regional Conservation Plan (2010)

4.4 Local Government Area

a) Development Control Plan 2013

5.0 Key Principals

a) ***Precautionary Principle***: in the absence of complete information, do no further harm by applying a precautionary approach to minimise unintended consequences from the action under consideration:

- Planting only indigenous species minimises the risk of new exotic weed incursions.

b) ***'Fit for purpose'***: widest choice of species for harsh or inhospitable sites with substantially altered site characteristics.

6.0 Protocols

a) Soils and landform intact:

- Landscaping species selection where original soils remain should always utilise the palette from the site's original vegetation community;

- Where original soils and site characteristics remain (drainage, landform etc,) all species should be based on vegetation community. This is usual for street trees selection but is compromised in areas associated with road works and some forms of urban or commercial development.

b) Soils and landform not intact:

- Where soils have been imported or deposited on the site, the EC from the soil's source along with its new landform provide the basis for the planting palette to improve the likelihood of success these plants are 'fit for purpose'.

  For example if dredge spoil from the Macleay is used and reformed for the canal developments would use the following logic train to allow the EC to be determined and thereby the planting palette that now best suits the modified site:

  - Where the sands and silts are less than 0.3m in elevation (public amenity not-with-standing), mangroves would be the choice;
  - Between 0.3 and 0.5m species should be selected from Swamp Oak Forest (saline version);
  - Between 0.5-1.0m Littoral Rainforest (silt and sand) provides the planting palette; and
  - Above 1.0m elevation, Subtropical Floodplain Forest is the EC from which to choose plants for landscaping.

c) Significantly altered and harsh environments:

- In harsh or altered environments (road medians, blisters, roundabouts, car parks, exposed sites and/or poorly prepared landscape beds, that have gravel/clay/concrete bases) any species from the lists below can be used based on the principle of 'fit for purpose' (irrespective of EC) to ensure successful landscape results.

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Forest Oak	*Allocasuarina torulosa*	● Dry Sclerophyll Forest	10	open canopy			No	• Black cockatoo feed on small cones produced by the tree. • No suitable in areas of high pedestrian traffic – problems with 'needle' leaf fall and cones. • Suitable in 'rural/large lot' spaces.
Lemon Myrtle	*Backhousia citriodora*	● Subtropical Coastal Forest	8	low branching habit	white	Spring	●	Strongly aromatic foliage
Coast Banksia	*Banksia integrifolia*	● Coast Banksia Woodland ● Littoral Rainforest (clays) ● Littoral Rainforest (sands and silts) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Dry Sclerophyll Forest (sand) ● Coast Banksia Woodland	8	dense-rounded	pale yellow	Summer	●	Woody Fruit ,trunk clearance to be specified
Illawarra Flame Tree	*Brachychiton acerifolius*	● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest ● Subtropical Coastal Floodplain Forest (sand) ● Wet Sclerophyll Forest ● Gallery Rainforest	15	medium-domed	red	Spring	●	Opened fruit may shed silica hairs. Semi deciduous during flowering. A tree for larger sites, may be subject to the pest Kurrajon leaf tier
Crimson Bottlebrush	*Callistemon citrinus*	● Dry Rainforest ● Littoral Rainforest (clays) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Wet Sclerophyll Forest ● Lowland Forest	4	conical-erect	Red	Spring	●	Can tolerate very wet conditions

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Willow Bottlebrush	*Callistemon salignus*	● Dry Rainforest ● Littoral Rainforest (clays) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Wet Sclerophyll Forest ● Lowland Forest	8	conical-erect	cream	Spring / Summer	●	Basal pruning to maintain visual clearance may be required
Bottlebrush	*Callistemon viminalis*	● Dry Rainforest ● Littoral Rainforest (clays) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Wet Sclerophyll Forest ● Lowland Forest	8	conical weeping	red	Spring	●	Extremely adaptable in cultivation, weeping form
Tuckeroo	*Cupaniopsis ancardioides*	● Dry Rainforest ● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowland and foothills) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Swamp Oak Forest (saline) ● Coast Banksia Woodland	10	dense-rounded	greenish/ white	Spring	●	Inclusions must comply NATSPEC Specifying Trees

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Smooth Quandong	*Elaeocarpus obovatus*	● Dry Rainforest ● Gallery Rainforest ● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest ● Subtropical Coastal Floodplain Forest (alluviums) ● Wet Sclerophyll Forest ● Lowland Forest ● Swamp Oak Forest (saline)		dense-rounded				Buttress when mature
Blueberry Ash	*Eleocarpus reticulatus*	● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Subtropical Coastal Floodplain Forest ● Heathy Woodland ● Dry Sclerophyll Forest (on sand) ● Coast Banksia Woodland ● Lowland Forest	8	medium-dome	white	Summer		
Tallowwood	*Eucalytpus microcorys*	● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Dry Sclerophyll Forest (clay) ● Lowland Forest		open canopy-spreading	white	Winter	●	• Large tree suited to open space planting only. • Koala food tree • Not suitable for residential or town centre street planting.
Small Fruited Grey Gum	*Eucalytpus propinqua*	● Subtropical Coastal Floodplain Forest (alluviums) ● Wet Sclerophyll Forest ● Dry Sclerophyll Forest (clays)	15	dense-rounded	white			• Large tree suited to open space planting only. • Koala food tree. • Not suitable for residential or town centre street planting.
Swamp Mahogany	*Eucalytpus robusta*	● Swamp Sclerophyll Forest	20	open canopy-spreading	white	Summer	●	• Large tree suited to open space planting only. • Koala food tree. • Not suitable for residential or town centre street planting.

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Forest Red Gum	*Eucalytpus tereticornis*	● Wet Sclerophyll Forest ● Subtropical Coastal Floodplain Forest (alluviums) ● Swamp Sclerophyll Forest ● Dry Sclerophyll Forest (clays) ● Lowland Forest	20	open canopy-spreading	white	Spring / Summer	●	• Large tree suited to open space planting only. • Koala food tree. • Not suitable for street planting in town centre.
Cudgerie	*Flindersia schottiana*	● Dry Rainforest	25	open canopy-spreading	white	Spring / Summer	●	
Native Frangipani	*Hymenosporum flavum*	● Gallery Rainforest ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest	8	dense-rounded	yellow	Spring		
Cabbage Fan Palm	*Livistona australis*	● Littoral Rainforest (clays) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish)	25	palm	cream	Summer	●	Serrated leaf base advanced planting only
Brushbox	*Lophostemon confertus*	● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest (Comboyne Plateua) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Wet Sclerophyll Forest ● Lowland Forest	15	medium to broad-domed	white	Spring	●	Cup Moth
Flax-leaved Paperbark	*Melaleuca linarifolia*	● Subtropical Floodplain Forest (sands) ● Swamp Sclerophyll Forest ● Lowland Forest	8	dense/rounded	white	Summer		
Broad Leaved Paperbark	*Melaleuca quinquenervia*	● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Coastal Floodplain Forest (alluviums) ● Subtropical Coastal Floodplain Forest (sands) ● Swamp Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Lowland Forest	15	medium to broad-domed	white	Summer	●	Large tree planting

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Screw Pine	*Pandanus tectorius* var. *australianus*	● Coast Banksia Woodland ● Themeda Headland		dense/spreading				
Turpentine	*Syncarpia glomulifera*	● Subtropical Coastal Floodplain Forest (sand) ● Wet Sclerophyll Forest ● Lowland Forest	15	medium to broad-domed	cream	Spring		Large tree planting
Brush Cherry	*Syzigium australe*	● Gallery Rainforest ● Littoral Rainforest (sands) ● Subtropical Rainforest	12	broad-domed	white	Spring		• Large tree planting • Not suitable for street planting.
Weeping Lilly Pilly	*Syzigium floribundum (syn. Waterhousia floribunda)*	● Gallery Rainforest (lowlands and foothills) ● Subtropical Rainforest (lowlands and foothills) ● Wet Sclerophyll Forest	15	medium-domed	cream	Summer	●	Large tree suited to open space planting only
Lilly Pilly	*Syzygium leuhmanii*	● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest ● Subtropical Coastal Floodplain Forest (sands) ● Dry Sclerophyll Forest (sands) ● Lowland Forest	10	medium domed	white	Spring		
Lilly Pilly	*Syzygium smithii*	● Gallery Rainforest (lowlands and foothills) ● Gallery Rainforest ● Littoral Rainforest (clays) ● Littoral Rainforest (sands) ● Subtropical Rainforest (lowlands and foothills) ● Subtropical Rainforest ● Wet Sclerophyll Forest ● Swamp Oak Forest (brackish) ● Dry Sclerophyll Forest (sands) ● Lowland Forest	15	dense-rounded	cream	Spring	●	Trunk clearance to be specified
Water Gum	*Tristaniopsis laurina*	● Gallery Rainforest (lowlands and foothills) ● Gallery Rainforest ● Littoral Rainforest (clays) ● Subtropical Rainforest (lowlands and foothills) ● Wet Sclerophyll Forest	8	medium-domed	yellow	Summer	●	

KEMPSEY NATSPEC-AVAILABLE INDIGENOUS SPECIES LIST FOR STREET TREES								
Common name	**Latin name**	**Vegetation community**	**Height (m)**	**Canopy features**	**Flowers**	**Flowering time**	**Advanced stock available 100-200 litre**	**Notes**
Spotted Gum	*Corymbia maculata*	● Relatively limited distribution in Shire but common in following communities: ● Hunter Macleay Dry Sclerophyll Forest ● Coastal Grassy Woodlands	15	medium domed	white/cream		Y	• Spectacular bark
Brown Kurrajong	*Commersonia bartramia*	● Main locations are: ● Subtropical Coastal Flood Plain Forest ● Subtropical Rainforest (Hills) ● Lowland Rainforest on Floodplain ● Littoral Rainforest ● Wet Sclerophyll Forests	10	medium dense	white	Spring / Summer	N	• Attractive mottled bark and clusters of white flowers
Foambark	*Jagera pseudorhus*	● Wide distribution across a variety of soils and communities but commonly found in the following communities: ● Subtropical Coastal Flood Plain Forest ● Subtropical Rainforest (Hills) ● Lowland Rainforest on Floodplain ● Littoral Rainforest ● Wet Sclerophyll Forests	10	broad medium	white/cream	Spring	N	• Striking red fruit follows flowering • New bronze coloured foliage in spring
Jackwood	*Cryptocaria glaucescens*	● Littoral Rainforest ● Wet Sclerophyll Forests	10	medium	pale green/white	Late Spring-Summer	N	• Small blue/black fruits • Good browse/forage species for fruit eating birds
Red Ash	*Alphitonia excela*	● Wide distribution across various soil types and communities including: ● Subtropical Rainforest (Hills) ● Lowland Rainforest on Floodplain ● Littoral Rainforest ● Wet Sclerophyll Forests	10-15	open-broad	insignificant	Spring to Summer	Y	• Attractive dark green foliage with white underside of leaf • Pale mottled bark • Clear trunk
Small Leaf Fig	*Ficus obliqua*	● Variable distribution across various soil types and communities including: ● Subtropical Rainforest (Hills) ● Lowland Rainforest on Floodplain ● Littoral Rainforest ● Wet Sclerophyll Forests	10	broad	insignificant		Y	• Small yellow gold fruits • Good browse/forage species for fruit eating birds
Red Cedar	*Toona ciliata var australis*	● Subtropical Rainforest (Hills) ● Lowland Rainforest on Floodplain	15	broad	insignificant	Spring	Y	• Winter deciduous species

Appendix D: Indigenous Species List for Open Space Landscaping

1.0 Introduction

According to the National Botanic Gardens, across Australia, the origin of the largest proportion of environmental weeds are from horticulture (Fagg 2007). Of these, those that are the most threat to biodiversity 65% are of horticultural origin (Weeds CRC 2007). The economic costs of weeds exceeds $4 billion per annum (Australian Weeds Strategy 2006). In recognition of the significant impacts across all land tenures the Department of Industry and Investment has developed the Invasive Species Plan. Scientific appraisal of the risk posed by individual weeds and their current extent have been conducted through a weed risk analysis algorithm. Based on this best data, the analysis results lead to the following hierarchical response:

a) prevention of new incursions;

b) early detection leading to eradication and containment of new incursions; or

c) reduction of the impacts of widespread infestations (at two levels):

   (i) Defence of key agricultural, biodiversity and amenity assets whilst biological controls are sought for more effective integrated landscape-scale control of widespread weeds.

   (ii) Continued importation of 'sterile varieties' that still none-the-less contribute genetic material to the wider weed meta-population undermines these efforts.

Within the Kempsey (KSC) Local Government Area (LGA), whole landscapes are completely overrun by environmental and noxious weeds. For example Privet on in the Upper and Lower Macleay, Camphor Laurels in the floodplain and Bitou along our coasts. To date despite all of the resources available to the Council, no noxious or environmental weed has been completely eradicated. In the meantime, new species are introduced by the horticultural and nursery industry as well as by gardeners which results in multiple new infestations and new exotic species incursions being recorded across the LGA each year. Of the ten new weeds recorded in Australia annually two thirds are garden species (http://www.weeds.gov.au/weeds/where/index.html). The continuation of the status quo is clearly economically, environmentally and socially unsustainable.

For several reasons, the publicly landscaped estate has a disproportionate role to play in weed incursions and the spread of new weed species across the LGA. Because of the amenity, beauty and high visibility of past plantings by the various organisations, public landscaping has a strong influence on what people do in their own back yards. Particular arrangements and species compositions are closely watched by gardeners and rapidly emulated. In addition, the location of much of the plantings along roadways and in parks (often near to streams or along coasts) means that introduced species have a short distance to travel before they move out of the intensively managed landscape and begin their destructive invasive role in the wider countryside. This along with the favoured use of species with delectible fruits has meant that many horticultural species are spreading rapidly into the hinterland from our publicly landscaped areas, urban gardens, rural residential and permaculture sites. In recognition of our legislative and regulatory responsibilities (see below), Council's adoption of the use of indigenous native

species for landscaping in public areas under Development Control Plan 2013 is a key response to this ongoing economic, environmental and social problem.

2.0 When to Use this List

Wherever landscape plants are required for urban plantings and other public lands (parks, playgrounds, pedestrian thoroughfares etc.)

If the planting sites are inhospitable (i.e. soils are highly modified and the landscaping environment is also 'plant-hostile'), then any species from the list below may be included irrespective of the site's original vegetation community. Examples of landscaping environments that may be plant hostile include:

- where soils are scalped, poor, compacted, droughty or subject to poor drainage as a result of development (such as commercial/industrial sites, paved/concreted carparks; and

- 'intra-road plantings such as medians, street blisters and roundabouts).

This expands the palette of local species that may be 'fit for purpose' and thereby ensure successful plantings on these plant-hostile sites.

3.0 Legislation, Regulations, Policies

3.1 Federal

a) *Environmental and Biodiversity Conservation Act (1999):*
- Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants (2010).

b) National Strategy for Conservation of Australia's Biological Diversity (1996):
- Objective 3.3:
  - Control the introduction and spread of alien species and genetically modified organisms and manage the deliberate spread of native species outside their historically natural range";
- 3.3.4 Translocated species:
  - Promote the use of local indigenous species in rehabilitation;
  - discourage the use of non-local native species in revegetation schemes, large-scale landscaping schemes and rehabilitation programs.
  - Exercise caution in the commercial use of any new non-local native species.
  - Develop procedures to ensure that their establishment and propagation will not threaten the integrity of existing ecological systems.

c) Weeds of National Significance (WoNS) listed in 1999 :
- at least 7 of the 20 thus far nominated are of horticultural origin (Currently under review).

d) Australian Weeds Strategy (2007)

3.2 New South Wales

a) *Noxious Weeds Act (1993).*

- Currently under review with a proposal to restrict horticulture and nursery industry to a 'White List' of species not known to be invasive, all others being prohibited.

b) *Threatened Species Conservation Act (1999):*

- Key Threatening Processes:
  - Invasion and establishment of exotic vines and scramblers;
  - Invasion and establishment of Scotch Broom (Cytisus scoparius);
  - Invasion of native plant communities by bitou bush & boneseed Weed;
  - Invasion of native plant communities by exotic perennial grasses;
  - Invasion of Native Plant Communities by African Olive Olea europaea L. subsp. cuspidata; Invasion, establishment and spread of Lantana (Lantana camara L. sens. Lat).

c) New South Wales Invasive Species Strategy 2008-2015.

3.3 Regional

a) Northern Rivers Biodiversity Management Plan (2009).

b) Draft Mid North Coast Regional Conservation Plan (2010)

3.4 Local Government Area

a) Development Control Plan 2013

4.0 Key Principles

a) ***Precautionary Principle***: in the absence of complete information, do no further harm by applying a precautionary approach to minimise unintended consequences from the action under consideration.
- Planting only indigenous species minimises the risk of new exotic weed incursions.

b) ***'Fit for purpose'***: widest choice of species for harsh or inhospitable sites with substantially altered site characteristics.

5.0 Protocols

a) **Soils and landform intact:**

- Landscaping species selection where original soils remain should always utilise the palette from the site's original vegetation community;
- Where original soils and site characteristics remain (drainage, landform etc,) all species should be based on vegetation community. This is usual for street trees selection but is compromised in areas associated with road works and some forms of urban or commercial development.

b) **Soils and landform not intact:**

- Where soils have been imported or deposited on the site, the EC from the soil's source along with its new landform provide the basis for the planting palette to improve the likelihood of success these plants are 'fit for purpose'.

  For example the dredge spoil from the Macleay if been used and reformed for the canal developments would use the following logic train to allow the EC to be determined and thereby the planting palette that now best suits the modified site:

  - Where the sands and silts are less than 0.3m in elevation (public amenity not withstanding), mangroves would be the choice;
  - Between 0.3 and 0.5m - species should be selected from Swamp Oak Forest (saline version);
  - Between 0.5-1.0m - Littoral Rainforest (silt and sand) provides the planting palette; and
  - Above 1.0m elevation - Subtropical Floodplain Forest is the EC from which to choose plants for landscaping.

c) **Significantly altered and harsh environments:**

- In harsh or altered environments (road medians, blisters, roundabouts, car parks, exposed sites and/or poorly prepared landscape beds, that have gravel/clay/concrete bases) any species from the lists below can be used based on the principle of: 'fit for purpose' (irrespective of vegetation community) to ensure successful landscape results.

KEMPSEY - INDIGENOUS SPECIES LIST FOR OPEN SPACE LANDSCAPING									
Common name	Latin name	Dimensions (h x w in metres)	Features	Uses	CONTEXT				Substitute for previously used species CAUTIONS
					Park planting	L/scape planting	Blisters/ medians	R/abouts	
TREES									
Bonewood	*Acradenia euodiiformis*	5-30 x3-10	Foliage, form	Light shade tree, bark					
Yellowwood	*Acronychia oblongifolia*	10-25 x 3-7	Foliage, flowers, trunk	Specimen tree, forms copses useful for screening					
Black Booyong	*Agyrodendron actinophyllum*	50 x 20	Red new foliage, canopy, foliage, trunk	Shade, amenity					
Turnipwood	*Akania bidwellii*	10-15 x 3-7	Foliage, perfumed flowers, fruit	Medium sized tree					
Beach Birds-eye	*Alectryon coriaceus*	4-8 x 2-4	Foliage, frontline species	Dense foliage plant for exposed position					Mirror-bush, Norlfolk Island Hibiscus
Black Sheoak	*Allocasuarina littoralis*	4-8 x 2-4	Foliage, wind harp	Light shade, screen, host for mistletoe					Pines
Forest Oak	*Allocasuarina torulosa*	8-25 x 5-10	Foliage, wind harp	Light shade, screen, host for mistletoe and epiphytes					Pines
Red Ash	*Alphitonia excels*	7-25 x 5-10	Foliage, form, bark	Light shade, host for mistletoe					
Pink Laceflower	*Archidendron grandiflorum*	15 x 5-7	Foliage, perfumed flowers, fruit	Small feature tree					
Bangalow Palm	*Archontophoenix cunninghamiana*	20-25 x 5	Form, foliage, fruit	Feature tree or clump planting			both		Cocos (Queen) Palm
Coogera (Rose-leaf Tamarind)	*Arytera divaricate*	5-10 x 3-5	Stunning new foliage, fruit	Feature and shade tree (alternative to or with Tuckeroo)					*Viburnum odorantissimum*
Grey Myrtle	*Backhousia myrtifolia*	10-30 x 2-4	Foliage, flowers	Hedging, shade			blisters		Murraya, Lilly Pillys
Wallum Banksia	*Bankisa aemula*	3-5 x 3	Form, foliage, flowers, cones	Small feature tree					
Mountain Banksia	*Banksia integrifolia* ssp. *A*	10-20 x 5-10	Form, foliage, flowers, cones	Medium sized tree					
Coast Banksia	*Banksia integrifolia* ssp. *Integrifolia*	10-20 x 5-11	Form, foliage, flowers, cones	Medium sized tree, frontline species					Norfolk Island Hibiscus
Saw-tooth Banksia	*Banksia serrata*	10-20 x 5-12	Form, foliage, flowers, cones	Medium sized tree					
Grey Walnut	*Beilschmiedia elliptica*	10-30 x 5-15	Form, foliage	Large shade tree					
Illawarra Flame Tree	*Brachychiton acerifolius*	10-40 x 10-15	Form, foliage (deciduous), flowers	Feature and street tree					
Black Wattle	*Callicoma serratifolia*	3-10 x 4-6	Form, trunk, foliage, flowers	Rapid growing, tolerates wetter (well-drained) sites					
Willow Bottlebrush	*Callistemon salignus*	5-15 x 3-5	Foliage, flowers	Street, park and landscape feature tree					
Weeping Bottlebrush	*Callistemon viminalis*	5-12 x 3-5	Form, flowers	Street, park and landscape feature tree					
Port Macquarie Pine	*Callitris macleayana*	10-18 x 5-10	Foliage, form	Specimen tree					Pencil Pines, cypress
Oyster Bay Pine	*Callitris rhomboidea*	3-10 x 2-3	Foliage, form	Specimen tree					Pencil Pines, cypress
Brush Caper Berry	*Capparis arborea*	2-5 x 1-5	Foliage, flowers (but spiny)	Specimen tree, barrier planting					
River Oak	*Casuarina cunninghamiana*	10-30 x 10-12	Foliage, wind harp	Specimen tree for large parks					Pines
Horsetail Sheoak	*Casuarina equisetifolia*	5-20 x 5-10	Foliage, wind harp	Frontline species, parks, beaches, dunes					Pines
Swamp Oak	*Casuarina glacua*	8-30 x 5-12	Foliage, wind harp, salt tolerant, frontline	Suckers: parks, salt and inundation tolerant					Pines
Native Celtis	*Celtis paniculata*	3-10 x 3-5	Foliage	Shade					*Celtis australis, Celtis chinensis*
Coachwood	*Ceratopetalum apetalum*	10-20 x 5-8	Form, bark, foliage, flowers	Specimen tree, requires well-drained clay soils					
Christmas Bush	*Ceratopetalum gummiferum*	3-10 x 2-6	Foliage, flowers	Specimen tree, landscaping, screening, hedging					*Photinia, Viburnum odorantissimum*

KEMPSEY - INDIGENOUS SPECIES LIST FOR OPEN SPACE LANDSCAPING									
Common name	**Latin name**	**Dimensions (h x w in metres)**	**Features**	**Uses**	**CONTEXT**				**Substitute for previously used species CAUTIONS**
					Park planting	**L/scape planting**	**Blisters/ medians**	**R/abouts**	
TREES									
Brown Myrtle	*Choriocarpa leptopetala*	5-12 x 3-5	Foliage, flowers	Specimen tree, landscaping, screening, hedging	■	■			
Olivers Sassafras	*Cinnamomum oliveri*	15-30 x 10-15	Foliage, form, shade	Specimen tree, shade	■	■			
Brush Kurrajong	*Commersonia fraseri*	2-6 x 1-3	Form, flowers	Arbors, screening (suckers freely)	■	■			Clumping Bamboos
Pink Bloodwood	*Corymbia intermedia*	10-30 x 10-20	Form, flowers, nectar	Parks, street trees, specimen trees	■	■			Flowering gums
Jackwood	*Cryptocarya glaucescens*	10-30 x 5-15	Form, foliage	Shade, specimen tree biodiversity (birds)	■	■			
Murrogun	*Cryptocarya microneura*	10-25 x 5-12	Form, foliage, wetter soils	Shade, specimen tree biodiversity (birds)	■	■			
Pepperberry	*Cryptocarya obovate*	20-40 x 10-15	Form, foliage	Shade, specimen tree biodiversity (birds)	■	■			
Rose Maple	*Cryptocarya rigida*	10-30 x 5-15	Form, foliage	Shade, specimen tree biodiversity (birds)	■	■			
Tuckeroo	*Cupaniopsis anacardioides*	8-15 x 6-15	Form, bark, trunk, foliage, fruits	Specimen and amenity tree, frontline (including sand)	■	■			Norfolk Island Hibiscus
Small-leaved Tuckeroo	*Cupaniopsis parvifolia*	10-20 x 5-8	Form, bark, trunk, foliage, fruits	Specimen and amenity tree, ?hedging		■			*Viburnum odorantissimum*
Rough Tree Fern	*Cyathea australis*	5-10 x 3-5	Single trunked, foliage, form	Specimen tree, group plantings, screening, feature planting		■		■	Golden Cane Palm, Dwarf Date Palm
Straw Tree Fern	*Cyathea cooperi*	5-10 x 3-6	Single trunked, foliage, form	Specimen tree, group plantings, screening, feature planting	■	■			
Yellow Persimmon	*Diospyros australis*	4-10 x 1-3	Foliage	Bushy small tree		■			
Native Tamarind	*Diploglottis australis*	10-20 x 3-8	Rusty distinctive foliage, habit	Specimen tree	■	■			
Sassafras	*Doryphora sassafras*	20-30 x 5-10	Foliage, fragrant flowers	Specimen tree	■	■			
Rosewood	*Dysoxylon fraserianum*	12-25 x 3-8	Form, foliage, fragrant flowers, fruits	Elegant, specimen tree	■	■			Kaffir Plum
Koda	*Ehretia acuminate*	10-25 x 5-12	Foliage (deciduous), fragrant flowers, fruit	Mixed plantings		■			
Smooth Quandong	*Elaeocarpus obovatus*	15-25 x 5-12	Form, foliage, flowers, fruit	Specimen and amenity tree, screening, brackish tolerant	■	■			
Blueberry Ash	*Elaeocarpus reticulatus*	8-15 x 3-5	Form, foliage, fragrant flowers, fruit	Specimen and amenity tree		■			
Red Olive Plum	*Elaeodendron austral*	5-10 x 3-5	Form, foliage, fruit	Specimen tree, salt-hardy	■	■			
Rose Walnut	*Endiandra discolour*	10-25 x 5-12	Fragrant flowers	Specimen tree	■	■			
Green-leaved Rose Walnut	*Endiandra muelleri*	15-20 x 5-12	Foliage	Specimen tree	■	■			
Corkwood	*Endiandra sieberi*	10-25 x 5-10	Form, bark, foliage	Specimen tree (on sand and clay)	■	■			
Large Fruited Grey Gum	*Eucalyptus biturbinata*		Bark in summer	Specimen tree (koala food tree)	■				
Flooded Gum	*Eucalyptus grandis*		Form, bark	Specimen tree	■	■			
Tallowwood	*Eucalyptus microcorys*	10-45 x 10-20	Form, foliage, flowers	Specimen tree (koala food tree)	■	■			
Blackbutt	*Eucalyptus pilularis*	25-40 x10-20	Form	Specimen tree	■				
Grey Ironbark	*Eucalyptus placita*	25 x 15	Form	Specimen tree	■				
Small-fruited Grey Gum	*Eucalyptus propinqua*	20-30 x 10-25	Bark in summer	Specimen tree (koala food tree)	■				
Red Mahogany	*Eucalyptus resinifera*	20-35 x 10-15		Specimen tree (koala food tree)	■				
Swamp Mahogany	*Eucalyptus robusta*	20-25 x 10-25	Flowers (nectar)	Specimen tree	■				
Sydney Blue Gum	*Eucalyptus saligna*	20-45 x 10-25	Form, bark	Specimen tree	■	■			

KEMPSEY - INDIGENOUS SPECIES LIST FOR OPEN SPACE LANDSCAPING									
Common name	**Latin name**	**Dimensions (h x w in metres)**	**Features**	**Uses**	**CONTEXT**				**Substitute for previously used species CAUTIONS**
					Park planting	**L/scape planting**	**Blisters/ medians**	**R/abouts**	
TREES									
Scribbly Gum	*Eucalyptus signata*	10-15 x 10-15	Form, bark	Specimen tree					
Forest Red Gum	*Eucalyptus tereticornis*	20-30 x 10-25	Form, bark, flowers (nectar)	Specimen tree (koala food tree)					
Bolwarra	*Eupomatia laurina*	4-10 x 1-5	Glossy foliage, fragrant flowers	Specimen tree, group plantings, screening, ?hedging					Murraya
Port Macquarie Beech	*Euroschinus falcatus*	20-30 x 10-25	Form, foliage, fruit	Specimen tree, shade					
Watery Fig	*Ficus fraseri*	10-15 x 3-20	Leaves, fruit, habit, deciduous	Smallest fig specimen tree, summer shade, winter sun					
Moreton Bay Fig	*Ficus macrophylla*	15-35 x 30-60	Leaves, fruit, habit, grandeur	Iconic specimen tree for very large spaces (60m+diameter)					*Ficus hillii*
Small-leaved Fig	*Ficus obliqua*	15-30 x 25-60	Foliage, habit, buttressing	Specimen tree for very large spaces (60m+diameter)					Local equivalent of *Ficus hillii* etc.
Deciduous Fig	*Ficus superba* var. *henneana*	6-25 x 10-40	Foliage, fruit, habit	Specimen tree for very large spaces (40m+diameter)					*Ficus hillii*
Nipple Fig	*Ficus watkinsiana*	25-35 x 25-60	Foliage, habit, buttressing	Specimen tree for very large spaces (60m+diameter)					*Ficus hillii*
Cheese Tree	*Glochidion ferdinandii*	6-10 x 5-10	Foliage, biodiversity	Shade (deciduous), disturbed roots are likely to sucker					
White Beech	*Gmelina leichhardtii*	8-15 x 15-20	Form, foliage (deciduous), flowers, fruit	Shade or specimen tree **POISONOUS FRUIT**					**Poisonous, not for high traffic areas**
Scrub Ironwood	*Gossia acmenoides*	15-18 x 5-10	Bark	Feature tree (probably slow-growing)					
Python Tree	*Gossia bidwillii*	10-25 x 5-8	Form, bark, foliage, fragrant flowers	Feature tree for deep shade (slow growing)					
Guioa	*Guioa semiglauca*	10-15 x 5-10	Form, bark	Shade or street, mistletoe host (biodiversity)					
Oblong-leaved Tulip	*Harpullia hillii*	6-15 x 5-8	Form, fruits	Shade, street or landscape, dense crown					
Leather Oak	*Helicia glabriflora*	6-15 x 3-8	Bark, flowers, fruit	Crown diffuse, feature tree for flowers and fruit					
Coast Hibiscus	*Hibiscus tilaceus*	6-9 x 6-14	Frontline, flowers	Flowers, foliage, shade					
Golden Ash	*Hodgkinsoniana ovatiflora*	6-25 x 3-8	Crown, trunk	Light-green dense crown, specimen tree					
Native Frangipani	*Hymenospermum flavum*	4-20 x 3-7	Habit, fragrant flowers	Sculptural plant (pagodiform), showy fragrant flowers					
Jacksonia	*Jacksonia scoparia*	3-5 x 1.3-3	Silver foliage, bark, sprays of gold flowers	Clumping, feature plantings, foliage contrast, salt-tolerant			both		Coastal Rosemary
Foambark	*Jaegera pseudorhus*	6-10 x 5-15	Form, foliage, trunk, fruits	Deciduous, elegant tree					
Brown Bolly Gum	*Litsea australis*	10-20 x 5-12	Form, foliage	Shade tree, specimen tree					
Bolly Gum	*Litsea reticulatus*	15-30 x 10-18	Form, foliage	Shade tree, specimen tree, tolerates poor soils					
Cabbage Fan Palm	*Livistona australis*	20-30 x 5	Form, foliage	Specimen tree, clumped planting					*Livistona decora,* Cotton Palm
Brush Box	*Lophostemon confertus*	10-15 x 5-10	Form, bark foliage	Specimen tree					
Red Kamala	*Mallotus philippensis*	8-12 x 4-8	Foliage, fruit	Screening plant, clump plantings					
Flax-leaved Paperbark	*Melaleuca linearifolia*	6-10 x 3-8	Foliage, flowers	Specimen and shade tree, feature tree					
Prickly Paperbark	*Melaleuca nodosa*	4-6 x 2-4	Foliage, flowers	Barrier planting, screening, clump planting					
Broad-leaved Paperbark	*Melaleuca quinquinervia*	8-20 x 5-10	Form, bark, flowers (nectar)	Specimen and shade tree, feature tree					

KEMPSEY - INDIGENOUS SPECIES LIST FOR OPEN SPACE LANDSCAPING									
Common name	**Latin name**	**Dimensions (h x w in metres)**	**Features**	**Uses**	**CONTEXT**				**Substitute for previously used species CAUTIONS**
					Park planting	**L/scape planting**	**Blisters/ medians**	**R/abouts**	
TREES									
Prickly-leaved Paperbark	*Melaleuca styphelioides*	8-20 x 5-10	Form, bark, flowers, epiphyte/mistletoe host	Specimen and shade tree, feature tree					
White Cedar	*Melia adzaderach*	6-25 x 5-15	Form, trunk, foliage, fragrant flowers, fruit	Specimen tree, clumped planting **POISONOUS FRUIT**					**All parts poisonous**
Hairy-leaved Doughwood	*Melicope micrococca*	12-20 x 8-15	Form, bark	Diffuse shade, specimen planting					
Mangrove Boobialla	*Myoporum acuminatum*	2-8 x 2-10	Form, bark, fruit	Frontline species, parks, beaches, dunes, hedging					
Brush Muttonwood	*Myrsine howittiana*	6-15 x 3-6	Form, trunk, foliage, fruit	Specimen tree, forms copses useful for screening					
Green Bolly Gum	*Neolitsea australiensis*	12-30 x 10-18	Fragrant flowers, foliage	Clump planting					
White Bolly Gum	*Neolitsea dealbata*	8-20 x 5-10	Fragrant flowers, foliage	Specimen tree, clump planting					
Native Olive	*Olea paniculata*	15-25 x 5-12	Trunk, bark	Diffuse screen, specimen tree					
Bleeding Heart	*Omalanthus populifolius*	2-5 x 2-5	Form, foliage	Small hardy quick-growing full sun tree					Chinese Tallow (in form, but not longevity)
Tree Oxylobium	*Oxylobium robustum*	1.5-3.5 x 1-2.5	Form, foliage, flowers	Small hardy tree					
Screw Pine	*Pandanus tectorius* var. *australianus*	2-4 x 8-12	Frontline, highly sculptural form, foliage	Spreading, hardy, quick growing full sun					Horse-tail Palm
Snowwood	*Pararchidendron pruniosum*	6-12 x 2-5	Deciduous, foliage, flowers, fruit	Small feature tree, summer shade, winter sun					
Narrow-leaved Geebung	*Persoonia linearis*	2.5-5 x 1.5-3.5	Habit, bark, foliage	Feature plants			blisters		
Geebung	*Persoonia stradbrokensis*	4-8 x 2-5	Form, bark, foliage, flowers	Specimen tree, clump plantings, grows on sand, screening					
Satinwood	*Phebalium squameum*	3-12 x 2-4.5	Form, trunk, flowers	Specimen tree, clump plantings, grows on sand, screening					
Plum Myrtle	*Pilidostigma glabrum*	3.5-5 x 2.5-4	Trunk, foliage	Screening plant, ?hedging			blisters		Murraya
Birdlime Tree	*Pisonia umbellifera*	10-15 x 5-8	Foliage	Screening plant					
Sweet Pittosporum	*Pittosporum undulatum*	5-12 x 4-7	Shade, fragrant flowers	Park and amenity planting					Murraya
Brown Pine	*Podocarpus elatus*	5-15 x 3.5-8	Form, bark, foliage, fruit	Specimen tree					
Celerywood	*Polyscias elegans*	6-20 x 3-5	Form, foliage, fruit	Specimen tree					
Black Plum	*Pouteria australis*	10-25 x 10-15	Form, foliage, fruit	Specimen tree, dense screen					
Brush Turpentine	*Rhodamnia rubescens*	6-25 x 4-10	Foliage, flowers, fruit	Screening plant, clump plantings					
Native Guava	*Rhodomyrtus psidioides*	3-12 x 2-8	Flowers	Screening plant (suckers)					**Fruit poisonous (in large quantities)**
Maidens Blush	*Sloanea australis*	8-20 x 5-8	New foliage, flowers, habit	Specimen or shade tree					
Scrub Beefwood	*Stenocarpus salignus*	4-15 x 3-8	Form, foliage, flowers	Specimen tree					
Turpentine	*Syncarpia glomulifera*	8-25 x 5-12	Form, bark, foliage, flowers, fruit	Specimen tree, shade					
Scentless Rosewood	*Synoum glandulosum*	6-8 x 1-4	Glossy pinnate foliage, fruit, scented flowers	Hedging, screening					Murraya
Brush Cherry	*Syzygium australe*	8-12 x 3-6	Form, foliage, flowers, fruit	Specimen tree, hedging, screening			blisters		Murraya
Purple Cherry	*Syzygium crebrinerve*	8-15 x 5-8	Form, foliage, flowers, fruit	Specimen tree, hedging, screening			blisters		Murraya
Weeping Lilly Pilly	*Syzygium floribunda*	10-16 x 5-10	Form, foliage, flowers	Specimen tree					
Rose Satinash	*Syzygium francisii*	8-15 x 5-10	Form, bark, flowers	Specimen tree					
Blue Cherry	*Syzygium oleosum*	12-15 x 6-8	Form, foliage, flowers, fruit	Specimen tree, hedging, screening			blisters		Murraya

KEMPSEY - INDIGENOUS SPECIES LIST FOR OPEN SPACE LANDSCAPING									
Common name	**Latin name**	**Dimensions (h x w in metres)**	**Features**	**Uses**	**CONTEXT**				**Substitute for previously used species CAUTIONS**
					Park planting	**L/scape planting**	**Blisters/ medians**	**R/abouts**	
TREES									
Lilly Pilly	*Syzygium smithii*	10-20 x 5-10	Foliage, flowers, fruit	Specimen tree, hedging, screening			blisters		Murraya
Red Cedar	*Toona ciliata*	20-35 x 10-25	Foliage, fragrant flowers	Specimen tree, deciduous, epiphyte host					Deciduous Ash
Hill Water Gum	*Tristaniopsis collina*	3-25 x 3-8	Form, trunk, foliage, flowers	Specimen tree, screening					
Water Gum	*Tristaniopsis laurina*	8-20 x 5-15	Form, trunk, foliage, flowers	Specimen tree, screening					
Tree Heath	*Trochocarpa laurina*	4-12 x 2-5	Foliage	Specimen tree, clump planting, screening			blisters		Photinia, Viburnum odorantisimum
Veiny Wilkea	*Wilkea huegliana*	4-6 x 1-4	Butterfly plant	Background planting, screening					
Grey Grass Tree	*Xanthorrhoea glauca*	2-6 x 1.5-3	Single trunked, foliage, form	Specimen tree					Horse-tail Palm
Green-leaved Grass Tree	*Xanthorrhoea malacophylla*	3.5-8.5 x 2-3	Single trunked, foliage, form	Specimen tree					Horse-tail Palm

Appendix E: Plants to Avoid Near Sewer Mains

Table B9-1: Plants to Avoid Near Sewer Mains		
Botanical Name	**Common Name**	**Damage Rating**
Cinnamomum camphora	Camphor Laurel	Extreme
Ficus species	Fig Trees & Rubber Plants	Extreme
Populus Species	Poplars	Extreme
Salix species	Willows	Extreme
Erythrina species	Coral Trees	Very High
Eucalyptus species	Large Gum Trees	Very High
Jacaranda mimosifolia	Jacaranda	Very High
Liquidamber styraciflua	Liquidamber	Very High
Araucaria species	Norfolk Island & Bunya Pines	Very High
Brachychiton acerifolium	Illawarra Flame Tree	Very High
Casuarina species	Casuarinas	Very High
Melia azedarach	Australian White Cedar	Very High
Pinus species	Pine Trees	Very High
Platanus acerifolia	Plane Tree	Very High
Schinus molle	Pepper Tree	Very High
Ulmus species	Elms	Very High
Bougainvillea species	Bougainvilleas	High
Cortaderia selloana	Pampas Grass	High
Grevillea robusta	Silky Oak	High
Ilex species	Hollies	High
Lagunaria patersonii	Norfolk Island Hibiscus	High
Ligustrum species	Privets	High
Magnolia species	Magnolias	High
Nerium oleander	Oleander	High
Phoenix canariensis	Canary Island Date Palm	High
Phyllostachus species	Bamboos	High
Toxicodendron species	Rhus Trees	High
Lophostemon confetus	Brush Box, Tristania	High
Wisteria species	Wisteria	High