SC6.7 Landscape Works Planning Scheme Policy

6.7.1 Purpose

(1) The purpose of the planning scheme policy is to:
a. identify information that the local government may require or request for a development application;
b. provide guidance about satisfying assessment criteria in the planning scheme; and
c. provide design standards for development to achieve acceptable outcomes.

6.7.2 Relationship to the Planning Scheme

(1) This policy is to be read in conjunction with the *Landscape Code* and applies to:
a. work that involves the preparation of landscaping documentation to demonstrate compliance with the specific outcomes; and
b. proposed developments on public and private land.

6.7.3 Related Material

(1) Other documents which provide guidance for achieving the planning scheme outcomes include:
a. Ipswich Streetscape Design Guideline;
b. Ipswich City Council Standard Drawings;
c. Ipswich Regional Centre Strategy – Streetscape Materials Specifications (Jan 2012);
d. The Springfield Lakes Design Manual;
e. Austroads Guide to Road Design;
f. Department of Main Roads Road landscape manual;
g. Crime Prevention Through Environmental Design (CPTED) Guidelines for Queensland;
h. Bio – retention Technical Design Guidelines: Version 1.1 – Water by Design (Healthy Land and Water); and
i. Part 3 - Stormwater Quantity, Quality and Floodplain Management of SC6.2 General Works and Infrastructure Planning Scheme Policy, and
j. Protection of Trees on Development Sites (AS 4970 – 2009).
k. Ipswich Urban Greening Plan.

6.7.4 Landscape Documentation

6.7.4.1 When Landscape Documentation may be required

(1) Landscape documentation, including specifications and drawings, are required to be submitted to Council for:
a. development applications for material change of use, reconfiguring a lot and operational works involving landscaping; and
b. where required by a condition of development approval under the planning scheme.

Note: The level of information required will depend on the specifics of the application, and will be determined by the Assessment Manager.

6.7.4.2 Types of Landscape Documentation that may be required

The following types of landscape documentation may be required to support a development application or satisfy a condition of development approval:

a. Site Analysis Plan

A site analysis plan shows all existing structures, features, opportunities and constraints that impact the landscape. A site analysis plan is useful in determining the most beneficial development layout that optimises the existing assets of the site. It indicates the effect and/or use of existing landscape elements in the proposed landscape layout.

b. Landscape Concept Plan

A Landscape concept plan provides a preliminary layout of the proposed landscape works. It indicates the location, extent and function of the proposed works, as well as the position of major design features. Landscape concept plans are commonly drawn in sketch from from a bird's eye perspective.

Any development involving landscaping works will, at a minimum, require the submission of a landscape concept plan demonstrating how the development achieves compliance with the provisions of the planning scheme. Following an initial assessment by Council, it may be necessary to provide more detailed design documentation.

c. Landscape Design Plan

A landscape design plan is a scaled drawing that shows the layout of the proposed landscape works. It details the extent, form and function of all hardscape and softscape elements that will be used within the landscape. It is presented from the perspective of a bird's eye view.

A landscape design plan should be accompanied by a planting plan, plant schedule and materials schedule (refer to documentation requirements outlined in Section 6.7.4.3). In some cases, a landscape design plan will also be accompanied by perspective and/or section drawings that are typically intended to assist in illustrating how particular components of the landscape are to be constructed or how the final constructed landscape will appear.

A landscape design plan is required for the majority of assessable development applications, particularly those of a larger scale and/or of a business nature. If not provided upon lodgement of the application or during the assessment, Council may require a landscape plan to be submitted (through the imposition of development approval conditions) for assessment and approval before any landscaping works are permitted to commence.

d. Planting Plan and Plant Schedule

A planting plan is a labelled diagram that shows the exact location, sizes and species of all existing and proposed plants within the landscape. It takes into consideration the amount of space available, the aspect, the soil conditions and the desired effect sought to be achieved.

A plant schedule is developed in conjunction with a planting plan. It provides a comprehensive list and details of the plants species to be used within the landscape. It is best displayed in table format. A planting plan and plant schedule are generally provided with a landscape design plan.

e. Materials Schedule

A materials schedule provides a comprehensive listing and details of the material surfaces to be used within the landscape works. It is best displayed in table format. The materials schedule is provided with the landscape design plan.

f. Landscape Buffer Plan

A landscape buffer plan sets out the design and procedures that will be implemented to establish a landscaped buffer.

A landscaped buffer is required where areas of the site are required to provide amenity in the form of visual or air and acoustic buffering and so can be comprised of a broader range vegetation intended to provide visual amenity. A landscape buffer is not required to provide an ecological function such as providing habitat or connectivity for native flora and fauna.

Where a buffer is required for visual, air and acoustic and ecological reasons, the buffer must be established as an ecological buffer (according to the requirements set out in the Environmental Management Planning Scheme Policy).

g. Maintenance Management Plan and Schedule

A maintenance management plan and schedule provides a long- term strategy for the management of the landscape. It outlines the measures required to maintain the landscape following construction, and the frequency at which these measures are to be implemented. A maintenance management plan should relate directly to the landscape design plan and any associated landscape documentation.

Maintenance management plans are required where the management of a space will ultimately become the responsibility of the Council (e.g. parkland, open space etc.) and must be submitted at, or prior to the commencement of the 'on-maintenance' period for the development. Maintenance management plans may also be developed to manage private spaces.

6.7.4.3 Minimum Requirements for Landscape Documentation

The following table describes the minimum requirements for the various types of landscape documentation that may be required by the Council.

Table 6.7.4.3.1 — Minimum Requirements for Landscape Documentation

Note: The following requirements apply to the extent they are relevant to the development. If, for instance a development site is not subject to flooding, the requirement to incorporate flood levels within the landscape documentation would not apply.

Document type	Information required

(a) Site analysis plan	• the existing contours of the site, and indication where slope exceeds 20%
	• physical constraints which would dictate suitable and unsuitable building areas
	• waterways, overland flow and drainage patterns, flood affected areas and major stormwater and drainage elements
	• property boundaries
	• existing access roads to the site
	• location, identification and extent of significant existing landscape elements (hard and soft), including the surveyed locations of
	  ◦ existing buildings and structures
	  ◦ trees with diameters of 200mm or greater, whether free standing or amongst other vegetation
	  ◦ trees above 450mm diameter, to be identified by species and/or genera, notated on the drawing and to include the species, condition and diameter of the trunk
	  ◦ areas of biodiversity and their associated vegetation class, and areas identified as being bushfire prone
	• location of any infrastructure and utilities servicing or in proximity to the site, and including details of any potential limitations for the future use of infrastructure (such as limitations on the use of water and sewerage)
	• description of abutting land uses and/or vegetation (such as residential, commercial, industrial, farm or grazing land, bushland, wetlands, established parkland)
	• location and purpose of any easements and/or encumbrances
	• road and allotment layout (including road names)

(b) Landscape concept plan	• extent and general description of landscape works • function of planned vegetation areas and any significant landscape elements • description and resolution of land use conflicts between the site and adjoining properties/land uses • location, type and function of buffer strips and other privacy provisions to address any land use conflicts • location and type of circulation patterns between various landscape elements including buildings, open spaces and public amenities • existing and proposed access points and linkages to adjoining sites • flood levels

(c) Landscape design plan	• site boundaries
	• contours/proposed ground surface levels and other relevant topographical information
	• identification of the areas within the project site that are to be treated with softscape elements notating —
	  ◦ the form of planting (lawn, groundcover, vine, shrub, tree)
	  ◦ function of planting (buffer, feature, ornamental, environmental)
	  ◦ culture
	  ◦ locally endemic, native, exotic (not a declared, invasive or environmental weed), mixed species
	  ◦ size (description of recommended pot/planting sizes and estimated mature dimensions)
	• identification of the areas within the project site that are to be treated with hardscape elements and details of these treatments
	• scale and location of open space areas
	• sports fields and sports courts dimensions and safety zones
	• areas dedicated to stormwater drainage
	• location and details of any proposed landscape embellishments
	• existing vegetation and features to be retained and/or removed
	• landscape buffer planting
	• rehabilitation areas
	• location and details of any infrastructure or utilities within or in proximity to the site or affected by the proposed works.
	• accessible and non-accessible facilities
	• car parking areas and car park numbers
	• street frontages, access points and maintenance and emergency vehicle access points
	
	Where Council will assume responsibility for the ongoing management of the landscape:
	• in addition to the above items the Landscape design plan must also indicate:
	  ◦ location of proposed facilities
	  ◦ sports fields and sports court dimensions and safety zones

	○ accessible and non-accessible facilities ○ recreation nodes ○ pedestrian and cyclist facilities, accesses and linkages ○ bollards and barriers ○ individual protected trees, vegetation communities, significant flora and fauna, including habitats and corridors ○ lakes, ponds and other low lying areas prone to ponding ○ site conditions and soil characteristics • the requirements of a Maintenance management plan (as identified below) must be addressed Note: Where Council will assume responsibility for the ongoing management of the landscape (and where parkland is to be dedicated to Council) in addition to the Landscape design plan, a Certificate of Design Compliance - Landscape Works in accordance with Appendix 1 of SC6.2 General Works and Infrastructure Planning Scheme Policy is to be submitted to the Local Government. The Certification of Compliance – Landscape Works is required to confirm that the detailed Landscape Plan complies with the desired standards of service for the relevant park setting outlined in Part 4 — Local Government Infrastructure Plan.
(d) Planting plan and plant schedule	• Planting plan showing: ○ type, species, quantities, location, and size of all plants to be used in the landscape ○ specific instructions about how the soil is to be prepared and what size and spacing is to be used for each species ○ establishment and maintenance operations that are required ○ dimensions of planting beds ○ turfing and edging treatments • Plant schedule identifying: ○ displayed in table format and divided into types of plants i.e. trees, palms, shrubs, ground covers, climbers etc. ○ full botanical and common names of plants used in alphabetical order ○ sizes of plants, including height at maturity, spread at maturity and pot size at the time of planting ○ approximate calliper size at planting for trees only in pot size >300mm ○ height and spread at planting for trees only in pot size >300mm ○ quantity of each species ○ spacing of all species and staking (if necessary) ○ legible plant symbology in a legend for easy identification of species on accompanying plan/s
(e) Materials schedule	A materials schedule identifying: • each of the materials to be used • details of the materials, and where they are to be used
(f) Landscape buffer plan	• site boundaries • site contours • location and description of vegetation to be retained or cleared • location of existing services and infrastructure • identification of planting areas, including the species to be used • details of protection measures (e.g. designated vehicle access, signage, tree guards, retaining clumps of trees for wind and storm protection) • description of the short, medium, and long-term measures that will be implemented to establish the site / details of works and staging of the works where proposed • description of how the establishment measures will be monitored over time • completion criteria for the establishment of the site • details of pest and weed management • location of protective fences/barriers • location and type of erosion control measures
(g) Maintenance management plan and schedule	• accepted horticultural practices and codes (best practices) necessary to establish the proposed landscape works during the development maintenance period • future management and maintenance zones and regimes for the protection and management of vegetation areas, ecological systems, waterways and fauna, including details of monitoring, inspection and reporting • maintenance of all structures and hard surfacing elements (for example, softfall, playgrounds and lighting) • specified time periods and work requirements for routine maintenance over a period of a year, including details of pruning, trimming, weeding, re-mulching

	and restructuring of plants • management and control of declared plants and recognised environmental weeds • tree management procedures • future management and maintenance regimes for sediment and erosion control devices • management of rubbish • identification of potential future need for infrastructure including public facilities • clear indication of possible future management issues and associated costs, to enable appropriate resources to be dedicated to maintaining the landscape to the required standard

6.7.4.4 Presentation Standards for Landscape Documentation

The following table describes the minimum presentation standards for landscape documentation that may be required by Council. All drawings are required in digital format, and where Council will assume responsibility for the ongoing management of the landscape by dedication to Council or other means, drawings must also be supplied with the associated ADAC xml digital file.

Table 6.7.4.4.1 — Presentation Standards for Landscape Documentation

Document Component	Requirements
Author	Landscape plans and maintenance schedules are to be prepared by a suitably qualified and experienced landscape architect, horticulturalist, or other person experienced in landscape design and construction.
Drawing quality	Line work and text must retain legibility through the processes of photocopying, scanning and conversion to PDF format. Text should be easily read at A3 size. Hatching and other symbology must be legible. Landscape plans need to have a cover sheet with a locality plan.
Sheet sizes	A1 and reduced to A3 are the preferred sheet sizes. A4 is acceptable for specifications and details.
Preferred scales	Concept plans - minimum 1:500, preferred 1:100/1:200 Sketch plans and working drawings - minimum 1:200 Construction details - minimum 1:50
Dimensioning	Linear dimensions to be indicated in metres and millimetres, where applicable. Levels to be reduced to Australian Height Datum and indicated to 0.01 metre. Slope batters to be indicated in percentage or ratio format.
Cartographic conventions / Title block	• title • date drawn • drawing number, sheet number and revision • scale • north point • legend • details of the author (name, qualifications, experience) • design certification • notation of any preceding or future related landscape drawings and associated documentation

6.7.5 Landscape Design and Construction Standards

6.7.5.1 General

Landscaping works are to be planned, designed and constructed in accordance with Crime Prevention Through Environmental Design (CPTED) (see CPTED guidelines for QLD).

Note: Should conflict exist between the abovementioned standard and any of the provisions for the various forms of landscaping detailed below, the abovementioned standards will take precedence.

6.7.5.2 Public Space (Concise Requirements to be Aligned with LGIP DSS or similar)

Note: Public space is a generally an urban social space that is open and accessible to the public.

General

a. Landscape elements do not restrict circulation, public safety and visual access to signage and associated businesses and facilities;
b. Landscaping does not impede universal access;
c. Landscape design and construction provides a smooth/even transition between hard and soft ground surface materials. i.e. differences in adjoining finished surface levels are to be avoided; and
d. Landscaping must not interfere with existing above and below ground infrastructure, public services or utilities (signage, street lighting, footpath, kerb and channel, road structures and surfaces, etc.).

Planting

a. Tree species are selected to consider Crime Prevention Through Environmental Design (CPTED);
b. Trees are to be planted at regular intervals to provide optimum shade cover of pathways;
c. Where tree guards are used to protect trees from temporary accidental damage, these are to be designed for easy removal once the tree is of sufficient size to no longer require protection. Tree guards should be removed at final inspection and prior to acceptance of the development 'off-maintenance';
d. Planting techniques should include the appropriate soil for maximum tree development and growth. It is unnecessary to increase the depth of the planting zone beyond 1m, there is greater benefit in increasing the soil volume laterally;
e. Where not already identified as part of an area of biodiversity (i.e. mapped in the biodiversity overlay) mature native trees should be identified and incorporated into parkland or road reserve planting wherever possible;
f. Long- life plants are to be used in preference of short-life plants;
g. Species selected shall not have ongoing pruning requirements once established;
h. Species choice must match the planting space available. Adequate space must be provided to allow root growth to proliferate within the space, and not into the adjacent surfaces/structures;
i. Trees with aggressive roots are only used with the approval of Council and root barrier is to be used to protect infrastructure from root incursion; and
j. Plantings should not be dependent upon irrigation beyond the establishment period.

Turf

a. Turf quality must be of a "A" Grade standard;
b. Soil of the turf sod shall be an even thickness of a minimum of 25mm;
c. Turf must be free from any matter toxic to plant growth, roots, weed or weed seeds;
d. Turfed areas are not to be established on batters with a gradient exceeding 1:6; and
e. Road reserves are to be turfed.

Refuse Storage

a. The location of public refuse bins is to be determined in consultation with Council to ensure that the emptying and maintenance of bins is practical and achievable.

Hardscape Elements (Furniture, Shade Structures, Pavements etc.)

a. Street and park furniture is to be installed on concrete pads and fixed in a manner to enable easy replacement (e.g. bolted);
b. Landscape elements are to be made from robust materials and be termite and pest resistant.
c. Landscape elements are to be vandal and graffiti resistant where possible.
d. Shade structures are to be constructed of strong and durable materials and have easily replaceable components. Finger-jointed or other glued timber palings are not to be used.
e. Shade structures are a minimum of 2.4m above playground equipment and have anti-vandal devices fitted to the supporting structure.
f. Landscape embellishments must include signage promoting the navigability of public places.

Edging

a. All edging is to be concrete;
b. Edging is to be designed with smooth navigable lines and must be able to sustain the movement of tractor mowers and maintenance vehicles where necessary;
c. All garden/mass planting areas, signposts, bollards etc. associated with development, are to be contained by fixed durable edging;
d. All edging is to be level with turf; and
e. Edging shall have a minimum lifespan of 15-20 years.

6.7.5.3 Parkland (Concise Requirements to be Aligned with LGIP DSS or similar)

General

New parks will be acquired by Council according to the requirements of the Local Government Infrastructure Plan where a need exists to meet a specific activity or to support a community use.

The required park embellishments will be determined by the Local Government Infrastructure Plan desired standards of service for the applicable standard of park, and these embellishments will be provided to the design standards applicable to that particular embellishment.

a. Parklands are designed to support a variety of recreation activities, and provide a standard of park embellishments appropriate for these activities;
b. Parkland provides gathering places for families and groups to meet and celebrate;
c. Activity areas are designed to encourage social interaction and a connected community;
d. Vegetation patterns provide for a range of uses, for example, provision of shade, aesthetic appeal, and suburban open space;
e. A park may also function as a pedestrian, bicycle or rideables movement corridor;
f. Park design supports access and maintenance activities, including grassed areas having a minimum width of 2.5m; and
g. Signage is provided within parks to promote navigability and to identify the major features within the park.

Location

a. Dedicated parkland must be internal to a development or be located where it will be internal to a residential area identifiable by peripheral urban collector roads;
b. Parklands are not located adjacent or near to noxious or noisy activities; and
c. Parklands should be located with consideration given to adjoining land uses and with adequate buffering from incompatible uses.

Site Suitability

a. Land dedicated to parkland is:
    i. free of hazards and constraints;
    ii. not listed on the Contaminated Land Register or the Environmental Land Register;
    iii. not encumbered by easements of any type or form, or known to be subject to planned future easements and/or encumbrances; and
    iv. does not have a dominant overland drainage function.
b. Land within riparian corridors is generally unsuitable for active recreation;
c. Parkland should be greater than 15m wide for linear linkage parks, unless part of a linkage or minor entry point, in which case a minimum of 5m is acceptable;
d. Land for sporting use should be at least 200m in any direction;
e. Land for sporting use should have more than 60% flat to gentle slopes (maximum 1:50);
f. A minimum of 50% of the parkland should be adjoining a road frontage;
g. Preferred shape for a park is square to rectangular, with the sides no greater than 2:1 ratio;
h. Parkland should not be less than 100m wide;
i. Parkland should not have a gradient exceeding 1:5; and
j. The area of parkland provided does not include the area of water bodies or dominance overland drainage areas contained therein.

Planting

a. Parkland may include areas of mature native trees which should be retained wherever possible;
b. Park trees are not be located within 10.0 metres of privately owned adjacent land; and
c. Trees are located to provide shade and shelter to park embellishments.

Playground and Exercise Equipment

a. Playgrounds are located no closer than 25m to private properties, road reserves, dense bushland, watercourses and any other areas that may jeopardise the safety of children, or where there is potential for disruption to neighbours;
b. Playgrounds and exercise equipment should be shaded either by trees or shade structures. Council will look favourably on the planting of advanced trees around playgrounds and over seating;
c. Playgrounds and exercise equipment are located in areas outside the 1% Annual Exceedance Probability (AEP) flood event;
d. Playgrounds and exercise equipment shall have a minimum design life of 20 years, and a minimum warranty of 5 years;
e. Playground and softfall design and construction is to comply with the requirements of the relevant Australian Standards both in supply and installation;
f. Softfall should be a light colour to avoid creating a heat sink and risk of burns; and

g. All softfall to grass interfaces must be edged.

6.7.5.4 Street Plantings Standards (Concise Requirements to be Aligned with New Version of ISDG or similar)

General (Trees)

a. Avenues of consistent tree species are preferred, allowing for the use of individual feature trees at focal points such as roundabouts, ends of local access roads, medians of major roads etc;
b. Street trees should be chosen to be in scale with the streetscape;
c. Unless otherwise directed by Council, staking is to be provided for all trees where risk of damage is likely;
d. All street trees are to have a minimum clear trunk height of 2m at maturity, unless otherwise approved by Council;
e. Trees are to be minimum semi-mature nursery stock at planting;
f. Trees with aggressive roots are only used with the approval of Council and root barrier is to be used to protect infrastructure from root incursion; and
g. On nominated state-controlled roads, tree selection and placement should generally preserve sightlines in accordance with the relevant State Government standards and other guidelines (Austroads Guide to Road Design and Department of Transport and Main Roads Landscape Manual).

General (Planting other than Trees)

a. Planting between kerb and footpath is to be in accordance with Austroads Guide to Road Design and Department of Transport and Main Roads Landscape Manual;
b. All planting (groundcovers and shrubs) within roundabouts is to be in accordance with Austroads Guide to Road Design and Department of Transport and Main Roads Landscape Manual;
c. Planting is to be planted at an appropriate setback from edge of planting area or garden edge to ensure that pruning is not required and obstruction to pedestrians and cyclists will not occur; and
d. Planting is to be designed using CPTED principles to maximise sight lines and passive surveillance.

Street Tree Location Requirements

Street trees must be planted in appropriate locations at specified distances from other streetscape elements and infrastructure:

- Minimum horizontal distances from mature tree canopy/drip line
  - 5m from any electric power pole including street lights:
  - Minimum horizontal distances from tree trunk:
    - 3m to a 100kV concrete pole
    - 1m to Energex underground cables (including vertical distance of 1m)
    - 2m to a fire hydrant, valve box or Telstra inspection pit
    - 1m to a house sewer or water main connection
    - 2m to a directly buried fibre optic cable
    - 2m either side of a driveway
    - 15m from the approach side of a pedestrian crossing and 5m on the departure side
    - 15m of any corner alignment on the approach side and 5m of any corner alignment on the departing side at any intersection
    - 20m from the approach side of a bus stop and 5m on the departure side
    - 15m from the centre of an intersection on a local, collector or trunk collector road with appropriate consideration of intersection sight lines.
- The setback from the kerb or road formation should be sufficient to enable safe access and egress from parked vehicles and clear visibility at driveway crossovers and pedestrian crossings.
- No tree is to be located within stormwater drainage infrastructure (e.g. in table drains, channels, easements etc.) unless approved by Council.
- Consideration must be given to the location of underground services, streetlights and traffic signs when locating trees.
- Trees are planted no closer than 600mm from the back of the kerb.
- Planting of trees, shrubs, and groundcovers within an existing roundabout or median strip may be considered when the roundabout is 8m in diameter or greater, or the median width is 2m or greater, and the planting meets the requirements of the risk assessment provided in Austroads Guide to Road Design for clear zones and sightlines when the landscaping is at maturity.
- Where an approved streetscape master plan has been prepared, planting is to be undertaken in accordance with that plan.
- Trees are to be located considering the CPTED guidelines.

Refer to Austroads Guide to Road Design and Department of Transport and Main Roads Landscape Manual for further information on planting, clear zones and sight lines in or adjacent to arterial, sub-arterial and major collector roads and roundabouts.

Street Tree Provision by Area Type

Street tree provision is required at varying rates and container sizes depending on the urban typology (industrial, centre, residential etc).

Centres	• Street tree planting is to be maximised wherever possible • Where street trees are being installed as a single planting, they must have a minimum container size of 45L • Where underground services or infrastructure restricts the installation of trees, ground covers, shrubs or alternate planting treatment is to be provided
Urban	• Single street trees are to be provided at a maximum spacing of 15 metres of road frontage or up to the spacing's prescribed in (new version of the ISDG) • Where street trees are being installed as a single planting, they must have a minimum container size of 45L • Future driveway and services locations to be considered prior to planting to avoid plant loss • The use of trees, shrubs and groundcover planting in mulched beds is supported at key locations within subdivisions. These locations include areas adjacent to parkland, at road junctions or at waterway crossings. Proposed plantings are to be detailed on the approved landscaping plans
Commercial	• Single street trees are to be provided at a maximum spacing of 20m of road frontage or up to the spacings prescribed in (new version of the ISDG) • Where street trees are being installed as a single planting, they must have a minimum container size of 45L
Industrial	• Single street trees are to be provided at a maximum spacing of 20m of road frontage or up to the spacings prescribed in (new version of the ISDG) • Where street trees are being installed as a single planting, they must have a minimum container size of 45L

Street Tree Planting Adjacent to Parkland

a. Existing vegetation within the parkland should be retained where possible;
b. Planting within the road reserve should reflect the character of the parkland vegetation, including an appropriate choice of species;
c. The extension of landscaping associated with the parkland onto the street verges is supported, subject to the selection of appropriate species and ensuring that there is minimal interference to the visibility of pedestrians, cyclists and motor vehicles;
d. The use of bollards to restrict vehicle encroachment into the road verge and parkland is supported. The style and location of these is to be in accordance with Ipswich City Council's standard drawings and must be included on the street tree landscaping plan (where upright kerb exists, bollards may not be necessary as a vehicle deterrent);
e. Where possible, feature trees within the road reserve should be used to visually and physically draw people into the park;
f. Where possible, plant larger tree species in the park to provide canopy cover for both the park and verge footpaths, and to use the area of the park for achieving an unobstructed area for root growth; and
g. Engineering design, such as one-way crossfall roads, should be used where appropriate.

Street Tree Inspection

Any street trees specified as 100L or larger must be inspected by Council prior to installation.

6.7.5.5 Landscaping in Car Parking Areas

General

a. Landscaping in car parking areas provides pedestrian comfort by reducing reflected sunlight and headlight glare from vehicles, maximises shade, maintains adequate separation between vehicles and other uses, reduces the effects of vehicle parking facilities on the environment and contributes to the character and amenity of the site and surrounding streetscape;
b. Where an open ground level area of car park exceeds 300m^2, or accommodates in excess of 12 cars, at least five percent of the car parking area (including the access aisles and driveways) should be dedicated to landscaping, ensuring adequate space for the deep planting of shade trees and shrubs. Landscaped setbacks to the perimeter of the carpark are not to be included in this calculation;
c. A minimum 2m wide landscape area is provided along any boundary of a car park that adjoins publicly accessible walkways, parks or civic spaces. For residential development a minimum 1m wide landscaped buffer is provided along any boundary of a car park that adjoins another residential zoned lot;
d. Landscape design clearly defines separations between pedestrian and vehicular circulation routes;
e. Carpark design maximises natural surveillance and pedestrian visibility, avoids concealment areas and ensures there is safe and convenient pedestrian access; and
f. Any restrictive effect of planting on traffic flow within the carpark in minimised.

Location

a. A north - south aisle orientation is desirable in order to maximise the shade provided by trees planted within car park areas. This will increase shadow coverage over individual car parking spaces. An east- west orientation of the parking aisles will provide shade only to the southern aisles.

Planting

a. Planting is to be contained and maintained within planting bed areas. Connected islands of planting areas accommodating shade trees throughout the carpark are provided. The planting of shade trees within small garden areas is generally avoided;
b. Planting bed areas are to be a minimum of $4m^2$ and planted in a natural soil profile;
c. Trees and shrubs are located to maintain adequate sight distances in accordance with traffic visibility and engineering safety requirements, including at planting bed ends within the car parking area, and trees are to be able to attain a minimum clear trunk height of 2m at maturity;
d. Where trees are planted singularly, the planting pit is to have roughened sides and a de-compacted base, using engineered soil structures with sufficient interconnected and free draining soil volume for sustained plant growth (not less than $8m^3$ per tree), and certified by an independent arborist;
e. All shrub planting within car parks is to be maintained at a maximum height of 750mm from the road level (a kerb height of 150mm at the roundabout allows for a maximum 600mm high planting);
f. To provide a good shade volume, it is recommended that shade trees be planted between every five 5 to eight 8 car parking bays, with an average of one tree to every 6 car parking bays . Whole parking bays can be provided as garden beds to support shade trees; and
g. Where a greater overall density of trees within landscape areas is achieved, a reduction in the rate of tree provision within the carparking bays may be considered.
h. Plants with thorns, fruits or berries are avoided in car parks.

6.7.5.6 Landscape Buffers

General

a. Buffer planting reduces the impact of incompatible land uses by creating buffer areas that provide for enhanced visual amenity and ameliorates the impacts of noise pollution, air pollution and wind;
b. Landscape screens and buffers are created with the use of plant materials and/or other landscape architectural elements to obscure views from adjacent properties;
c. Breaks in screens shall be permitted to provide adequate ingress and egress as required for maintenance access and other purposes;
d. Buffer strips are to be sensitively designed as an integral part of the site works being appropriate to their function, whilst enhancing visual amenity and having regard to future maintenance regimes;
e. A landscaped buffer strip may be comprised of planting only, or be a combination of planting and fencing; and
f. The owner/proprietor of the land on which the landscape buffer strip is located is responsible for the maintenance of the buffer at all times.

Location

Landscape buffers are located adjacent to side and rear building elevations, utility structures, trade entrances, storage and disposal areas, property boundaries and areas of high noise and air pollution generation.

Planting

a. Consideration is to be given to the width of landscape buffer strips as this will have a direct effect on the amount of screening that can be achieved (e.g., a 3m minimum landscaped buffer strip has an effective screening of approximately 4m – 5m high. A 6m landscaped buffer strip has an effective screening of approximately 5m – 6m high);
b. Buffer planting is to consist of primarily shrubs and trees, complemented by use of appropriate ground covers;
c. Plant material is not to create potential to cause damage, create a nuisance or major loss of sunlight, to adjacent properties;
d. Landscape buffers shall be designed to achieve the required screening function within two years of establishment;
e. A variety of species with different growth habits are incorporated;
f. Species with different foliage for texture and effective screening are included;
g. Use of 100 percent locally endemic native species is preferred; and
h. No declared plants, or invasive or environmental weeds are used in planting, and any exotic species account for a maximum of 20% of all plants used to create the buffer.

Large Scale Landscape Buffers (Generally exceeding 10 metres width)

a. Buffers consist of a minimum of two rows of off-set plantings;
b. Trees and large shrubs are spaced 4m – 5m apart;
c. Small shrubs are spaced 2m – 3m apart;

d. At maturity, plants should be highest in the central row and lowest at the edge rows;
e. For buffers up to 3m in height, plant heights are to be varied with 60% of the overall height achieved using trees and tall shrubs; and
f. Initial plantings are to commence at 1.5m height where possible.

6.7.6 Species Selection

6.7.6.1 General

Species selection is to respect the landscape character of the local area and its surrounds, particularly the uses, types and form/s of adjacent development and associated landscapes and existing natural features. When selecting plant species, regard should be given to:

a. the general conditions of the area, including climate, soil and sub soil conditions;
b. the required purpose/function (e.g. to provide shading, screening etc.);
c. the level of impact of the proposed planting on visual amenity, uses and activity;
d. that locally indigenous species are to be used wherever possible;
e. that hardy, drought-resistant species are preferred;
f. climatic and growth habits of the species, which should match the requirements of the site;
g. the species ability to thrive in circumstances where soil compaction will be a factor;
h. the natural tendency for tree species to develop single or multiple trunks (i.e. generally avoid species with multiple trunks where located in road reserves and car parks);
i. the available space allowing for future growth, including root development, to accommodate the ultimate size and shape of the plant;
j. traffic engineering requirements;
k. potential impacts on nearby areas of environmental value and sensitivity, including biodiversity areas, national parks and state forests; and
l. planting of declared plants and invasive or environmental weeds (which is not permitted), poisonous species, nuisance plants or plants with invasive roots.

Note**:** Refer to Appendix 1 – Preferred species and Appendix 2 – Declared Plants.

6.7.7 Planting guidelines

6.7.7.1 General

a. Mulch around the base to the edge of the canopy. Mulch to be of “forest mulch” quality, free from material such as stones, clay lumps, sticks, tree roots, rubbish, rubble or any other deleterious material;
b. Hardwood stakes are to be used to stabilise newly planted trees and are to be straight and free from knots;
c. Stakes are to be removed after 12 months;
d. Fertiliser to be placed in tree pit where appropriate;
e. Tree pit to be 300mm deeper than root ball and twice the root ball width at the base of the pit, widening to three - four times the width of the root ball at ground level for lateral root growth;
f. Plants or trees should not be located closer than 2.5m unless in a mulched garden bed (to allow room for mowing);
g. Where ponding may occur choose species that will tolerate sitting in water;
h. Existing vegetation and topographic features are protected where possible;
i. Vegetation of cultural, historic or amenity value is protected and retained; and
j. All planting media to conform to Australian Standard AS 4419 -2003 Soils for landscaping and garden use.

SC6.7 Appendix 1 - Preferred Species (this Section could reference a council wide preferred species list once available)

For the preferred species list refer to section 5.6 Plant Schedules of the *Ipswich Streetscape Design Guidelines.*

SC6.7 Appendix 2 – Declared Plants

What is a Declared Plant / Declared Plants

The Queensland Government classifies weeds into three classes of Declared Plants of Queensland. The following information is taken from the Queensland Government's Department of Agriculture, Fisheries and Forestry fact sheet. No plant declared a weed or noxious plant under the *Land Protection (Pest and Stock Route Management) Act 2002* and included in all classes of declared plants must be used as a street tree or planted in any development in the region. Declaration under the Act imposes a legal responsibility for control by all landowners on land under their management.

Class 1

A Class 1 pest is one that has the potential to become a very serious pest in Queensland in the future. We need to prevent the introduction, possession and sale of these species so that they cannot escape to become pests. All landholders are required by law to keep their land free of Class 1 pests. It is a serious offence to introduce, keep, release or sell Class 1 pests without a permit.

Class 2

A Class 2 pest is one that has already spread over substantial areas of Queensland, but its impact is so serious that we need to try and control it and avoid further spread onto properties that are still free of the pest. By law, all landholders must try to keep their land free of Class 2 pests and it is an offence to possess, sell or release these pests without a permit. Fines apply.

Class 3

A Class 3 pest is one that is commonly established in parts of Queensland but its control by landowners is not deemed to be warranted unless the plant is impacting, or has the potential to impact, on a nearby 'environmentally significant area' (e.g. a national park).

It is an offence to sell, introduce, release or supply a Class 3 pest. Fines apply.

Species not declared under the *Land Protection (Pests and Stock Route Management) Act 2002* may still be declared at a local government level under local laws.