PLANNING SCHEME POLICY

LANDSCAPE

Mackay Region
PLANNING SCHEME

Mackay REGIONAL COUNCIL

Planning scheme policy – landscape

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Amendment history

This planning scheme policy commenced on 24 July 2017 as part of the Mackay Region Planning Scheme. Amendments since this date are listed in the below table.

Version number	Amendment title	Summary of amendment	Date adopted and commenced
1.3	Planning scheme policy administrative amendment 2	This amendment updates outdated references to align with *Land Act 1994* and *Land Titles Act 1994*.	Adopted 27 November 2024 Commenced 13 December 2024
1.2	Planning scheme policy minor amendment 1	This amendment alters minimum setback requirements for trees from footpaths or pathways.	Adopted – 27 September 2024 Commenced – 1 November 2024
1.1	Planning scheme policy amendment 2	This amendment reformatted the document and updated the requirements for streetscapes and recreational park design and added a section on landscape buffers.	Adopted – 28 October 2020 Commenced – 9 November 2020
1.0	Planning scheme administrative amendment 6, and Planning scheme policy administrative amendment 1	This amendment removed the planning scheme policies from Schedule 6 of the Mackay Region Planning Scheme and placed them in individual PDFs on Council's website. This amendment introduced standardised formatting, introductory sections and explanatory information regarding intent and legislative relationship for this planning scheme policy. It also updated numbering and cross references.	Adopted – 11 December 2019 Commenced – 3 February 2020

1 INTRODUCTION

1.1 Application

This planning scheme policy supports the Mackay Region Planning Scheme (planning scheme) by providing information on:

- How to achieve compliance with assessment benchmarks;
- Supporting information/studies required; and/or
- Actions required under the development assessment process.

This planning scheme policy has been made by Mackay Regional Council (Council) in accordance with Chapter 2, Part 3, Division 2 of the *Planning Act 2016*.

1.2 Relationship with planning scheme

Mackay Region Planning Scheme refers to this planning scheme policy in assessment benchmarks in the following code/s or any other relevant part of the scheme:

(a) Table 7.2.1.3.A – Mackay city centre local plan code
(b) Table 8.2.9.3.A – Landscape character and image corridor overlay code
(c) Table 9.3.8.1 – Industry activities code
(d) Table 9.4.1.3.A – General development requirements code
(e) Table 9.4.3.1 - Reconfiguring a lot code

1.3 Purpose

The purpose of this planning scheme policy is to set Council's minimum requirements for the landscaping of streetscapes, recreational parks and land reserved for visual and/or acoustic buffering to development (landscape buffers).

1.4 Referenced documents

(a) Council guidance documents and lists:
  (i) Mackay Regional Council – List of Furniture and Materials
  (ii) Mackay Regional Council – List of Plant Species
  (iii) Mackay Regional Council – Guidance Document for Landscape Documentation
  (iv) Mackay Regional Council – Footpath Trading Policy Guideline
  (v) Mackay Regional Council – Visual Identity Manual
(b) Mackay Regional Council – Full suite of standard drawings as listed in the "Plan Index – Standard Drawings" – A3-03970
(c) Mackay Regional Council – Specifications and Supplementary Specifications
(d) Australian Standards:
  (i) AS/NZS 1158.3.1 – Pedestrian area (Category P) lighting
  (ii) AS 3500 – National plumbing and drainage, Part 1.2: Water supply – acceptable solutions
  (iii) AS/NZS 4422 - Playground surfacing
  (iv) AS/NZS 4486 - Playgrounds and Playground Equipment
  (v) AS4685 - Playground Equipment
(e) External guidelines:
  (i) Queensland Government (2007) Crime Prevention through Environmental Design, Guidelines for Queensland – Part A: Essential features for safer Places
  (ii) Queensland Government (2007) Crime Prevention through Environmental Design, Guidelines for Queensland – Part B: Implementation Guide

(iii) Healthy Waterways (2006) Water sensitive urban design technical guidelines for south east Queensland

(f) Mackay Regional Council Policies:
  (i) Tree and/or Vegetation Vandalism Policy 013
  (ii) Shade of Playgrounds Policy 070
  (iii) Art Collection Policy 071
  (iv) Memorial, Monument and Plaque Requests Policy 080
  (v) Naming of Infrastructure Assets Policy 090

(g) Planning Scheme Policies
  (i) Planning Scheme Policy – Site Regrading
  (ii) Planning Scheme Policy – Cycle facilities and Path Design
  (iii) Planning Scheme Policy – Open Space

(h) Legislation
  (i) Vegetation Management Act 1999, Department of Natural Recourses and Mines, Queensland Government

2 REQUIREMENTS FOR THE DESIGN OF STREETSCAPES

2.1 Introduction

'Streetscape' is a term used to describe the natural and built fabric of the street that combine to create a specific environmental and visual quality to these types of spaces. The term 'streetscape' applies to all forms of street or road under the road hierarchy. The words "street" and "road" are interchangeable throughout all parts of this planning scheme policy, unless otherwise specified. The concept recognises that a street performs several roles. In addition to supporting the movement of various modes of transport (vehicles, cyclists or riders and pedestrians) and supports the delivery of utility services (potable water, stormwater, power, sewer, communications and street lighting), it is also a public place where people engage in various activities. While physically the street is defined by the alignment of the boundaries of the designated road reserve, visually its streetscape extends beyond these boundaries to include those parts of adjoining private property that are visible. This includes building facades, walls or screens and the areas between the shared boundary and these types of built elements.

Landscaping associated with on-street works will include 'hard-scape' or constructed elements such as pavements, fences and/or walls, fixtures and furniture as well as 'soft-scape' associated with planting such as street trees, areas of mass planting and maintained lawn. Works associated with the installation of irrigation to sustain planting is also included and is part of the hard-scape.

2.2 Design objectives and principles

The following objectives and principles apply to the design of streetscapes.

Objective 1: Interaction and exchange

Streetscapes are designed to accommodate and balance competing demands presented by the street's role and function as a corridor for movement, access, utility services and public space.

This objective can be achieved through the following design principles:

- Streetscape elements are designed to reflect and reinforce the function of the street as determined by its category within the road hierarchy.
- Where appropriate given the hierarchy of a road, streetscape elements are designed to create walkable streets affording comfort, safety and convenient access for pedestrians and to encourage the use of active and public transport.

Objective 2: Safety

Streetscapes are designed to offer a safe environment for all users.

This objective can be achieved through the following design principles:

- The design and placement of all streetscape elements allows for the safe movement of all users of the streetscape.
- The streetscape is designed and landscaped to incorporate CPTED principles.

Objective 3: Sense of place

Streetscapes are designed to distinguish the street and reinforce the unique sense of place, character and identity of the locality.

This objective can be achieved through the following design principles:

- Streetscape elements should reinforce and be sympathetic to the character and identity of the local area.
- The selection of the plant species used in on-street landscaping must have a recognisable and cohesive theme.

Objective 4: Legibility

Streetscapes are designed to support navigation and wayfinding within the urban setting.

This objective can be achieved through the following design principle:

- Streetscape elements take advantage of view corridors established by the street's alignment and/or distinguishable features and focal points visible from the street.
- Streetscapes are designed to support and convey the desired speed environment and hierarchy of the street.

Objective 5: Lifecycle cost

Streetscapes are designed to minimise maintenance costs and use the most effective option based on the lifecycle cost of infrastructure.

This objective can be achieved through the following design principles:

- Streetscapes are designed to minimise maintenance cost through the use of appropriate materials, plant species selection and using the most effective development option based on the lifecycle cost of infrastructure.
- Whilst lifecycle cost is a factor, landscaping treatments must be designed and constructed to be fit-for-purpose given the context and road hierarchy order of the streetscape.

2.3 Streetscape design requirements

The design of on-street landscaping:

(a) responds to individual site conditions;
(b) complies with the requirements determined by the road hierarchy;
(c) achieves the design objectives and principles set for streetscapes; and
(d) achieves the On-street landscaping requirements in part 2.5.

Council's 'Guidance Document for Landscape Documentation' prescribes the format and content of documents required for development involving on-street landscaping work.

Applications for a Material Change of Use or Reconfiguring a Lot involving on-street landscaping may need to be accompanied by a Site Analysis and Statement of Landscape Intent unless otherwise agreed by Council. A Landscaping Plan, supported by an Open Space Maintenance Plan (OSMP), must also be submitted for approval with an Operational Works application for all proposed on-street works. Where a Statement of Landscape Intent has been endorsed through an earlier approval, the Landscape Plan must be in accordance with the Statement of Landscape Intent in that approval.

Landscape plans for on-street works are to be prepared by or under the supervision of a Registered Landscape Architect (AILA) unless otherwise agreed by Council (exceptions may be made for certain small-scale works). Prior to lodgement to Council for assessment, unless otherwise agreed by Council, the landscaping plans must be reviewed and certified by a Registered Professional Engineer of Queensland (RPEQ) to ensure that landscaping treatments will not impact the operation or ongoing maintenance of any civil works component of the streetscape setting. This includes certifying that landscaping treatments will not:

(a) reduce design capacities of the designed drainage system;

(b) impinge on intersection and property access sight distances or vehicle operator safety within roadway clear zones;
(c) impact street lighting standards for either vehicular or pedestrian traffic; and
(d) impede future maintenance operations.

On completion of both hard-scape and soft-scape components, on-street landscaping will be subject to inspection by Council prior to being accepted 'on-maintenance'. Once accepted on-maintenance, on-street landscaping must be maintained by the developer for a minimum 12 month period. After the 12 month maintenance period, the on-street landscaping must pass an 'off-maintenance' inspection before being handed to Council.

Responsibility for the establishment of softscape components and the rectification of all defects to on-street landscaping during the on-maintenance period resides with the Developer. Council inspectors will conduct regular inspections throughout the maintenance period to ensure adequate establishment and maintenance is undertaken.

When plants or areas of grass cover need to be replaced due to defect or failure during the maintenance period, these components will only be accepted off-maintenance where it can be demonstrated by the developer that planting and grass have been established in situ for a minimum of 12 weeks. Trees, plants and areas of grass must be established post-planting for a minimum 12 weeks to ensure that they are well established. Defects should be corrected as soon as they are identified.

2.4 Existing vegetation requirements

Existing trees located within road reserves are to be retained and protected from impact during construction unless approved for removal by Council. Removal of trees from constructed road verges or footpath locations will only be considered where the tree is assessed by a qualified arborist to be in poor physical condition or pose a safety risk due to its structural form. Where approved by Council, tree removal will be undertaken at the expense of the applicant. If the trees removed were originally installed as street trees, the cost of supplying and planting a replacement street tree will be borne by the applicant. All replacement street trees must be a minimum 45 litre container size at planting or 100 litre container size if relocated within the Mackay city centre plan area

Existing trees which are located within new road reserves that have a height of 3 metres or greater are to be retained where feasible and protected from impact during construction in accordance with the Planning scheme policy – site regrading. This may require adoption of non-standard utility service alignments.

All instances where trees and/or vegetation is removed without prior consent may result in penalties under Council's Tree and/or Vegetation Vandalism Policy 013. These matters will be referred for action by the Department of Natural Resources and Mines under the *Vegetation Management Act 1999*

2.5 On-street landscaping requirements

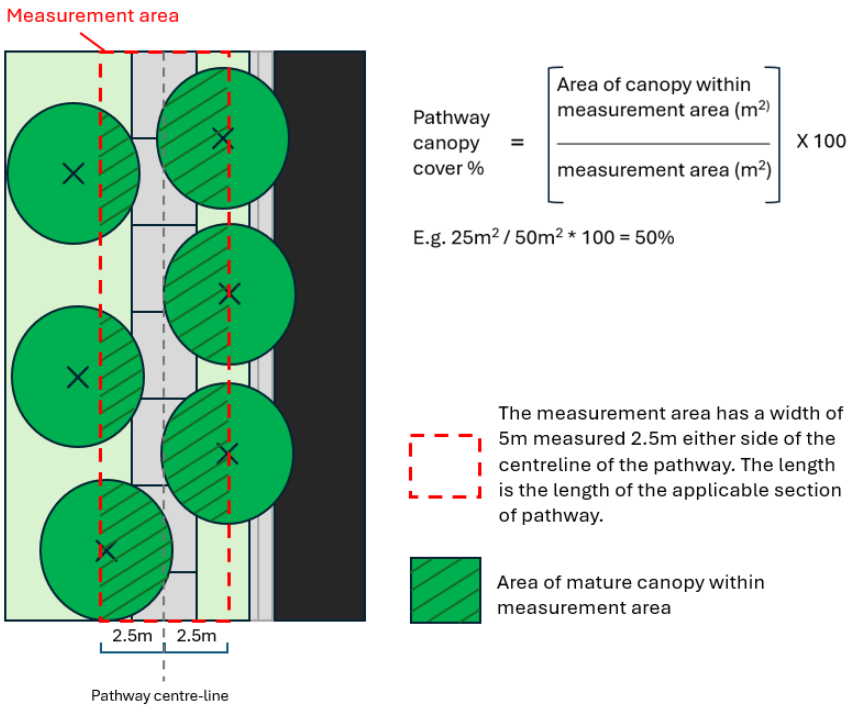
The following requirements for on-street landscaping apply to development for an urban purpose and development within the Rural residential zone, except where located on a state-controlled road.

On-street landscaping within state-controlled roads must be designed and constructed in accordance with the Department of Transport and Main Roads (TMR) requirements.

There are variants to the requirements for on-street landscaping which only apply within the Mackay city centre local plan area[1]. These variants are identified in the below table where relevant.

Design element	Requirements
Ground treatments on road verges	1. Maximum 1 in 4 slope and graded to be free draining. 2. Minimum 100mm topsoil depth required for areas to be turfed. The finished surface post turfing must be free of stones and other debris that can be lifted by a mower. 3. Full-width of the verge (excluding any footpath and areas under garden bed) is to be turfed. 4. Minimum 90% grass coverage, with minimum weed growth evident across the entire length of the subject verge is required to be achieved prior to accepting the landscaping works on-maintenance.
Footpaths on road verges	5. Footpaths must be designed in accordance with Council's Standard Drawings and Council's List of Furniture and Materials. Footpaths within the Mackay city centre local plan area must be designed in accordance with the Footpath treatment in the Mackay city centre local plan area listed in the List of furniture and materials.
Street furniture on road verges	6. The provision of furniture within the streetscape will be considered on merit where it can be demonstrated to be encouraging walking, cycling or the use of public transport. 8. Furniture must only be installed on road verges and be accessible from a constructed footpath. 9. Where seating is provided it must be placed so it is shaded by a tree or roofed structure. 10. Furniture must be of a type and installed in accordance with Council's Standard Drawings and List of Furniture and Materials. Furniture within the Mackay city centre local plan area must be chosen from the applicable furniture options for the Mackay city centre local plan area as listed in the List of furniture and materials.
Street trees on road verges	11. Trees are planted at a minimum rate of 1 tree per allotment on both sides of every road or to achieve a minimum average of 1 tree per 15 metres, whichever is greater. Within the Mackay city centre local plan area the density of street tree planting is increased to a minimum rate of 1 tree per 10 metres of an allotment's road frontage. Where existing structures or services limit opportunities for street tree planting, alternative locations shall be negotiated with Council. 12. Plant trees in locations that avoid conflicts with underground and overhead services. 13. Trees are located in accordance with the minimum setback distances nominated in Section 2.5.1 – Alignment, placement and clearances of street trees. 14. Trees are positioned to avoid conflicts with anticipated location of future driveways. 15. Trees can be grouped provided the design enables mowing by the property owner.

[1] Note that development of land within the Mackay Waterfront Priority Development Area is not under the jurisdiction of the Mackay Region Planning Scheme.

Design element	Requirements
	16. Placement of trees must not obstruct access to services or block views of traffic, street signs, and street name signs. 17. Trees are to be planted to achieve a minimum 40% canopy cover to footpaths in road reserves at maturity. If the 40% canopy cover of footpaths using tree planting is not achievable due to constraints or conflicts with other infrastructure, the opportunity for tree planting is to be maximised with options such as the grouping of trees resulting in overlapping canopies, or selection of tree species with larger canopies to be considered. Refer to below figure for method of calculating canopy coverage over pathway:  **Pathway canopy cover calculation diagram** 18. Semi-mature stock must be no less than 45 litre container size or if planted in the Mackay city centre local plan area, must be at least 100 litre container size installed and planted in accordance with Council's Specifications and Standard Drawings. 19. Street trees must be a species nominated on Council's List of Plant Species and identified as being suitable for use as a street tree. Refer Appendix A - Mackay City Centre Planting Strategy (revised) for species selections for individual streets within the Mackay city centre local plan area. 20. Street trees must be in good health, free of structural defects, pests and diseases, appropriately staked and with planting surrounds properly formed and free of weeds before being accepted on-maintenance.
Garden beds on road verges	20. Planting other than street trees will be considered on merit when it can be demonstrated to improve the appearance, functionality and maintenance of the streetscape setting. 21. Planting other than street trees on road verges must be contained within formed garden beds constructed in accordance with Council's

Design element	Requirements
	Specifications and Standard Drawings with a minimum 300mm topsoil depth with 100mm depth mulch cover. 22. Garden beds within road verges must be irrigated. 23. Plants must be chosen from Council's List of Plant Species. Species section for mass planting with garden beds located in the Mackay city local plan area must have regards and be coordinated with street tree planting nominated for individual streets. Refer Appendix A - Mackay City Planting Strategy (revised). 24. Plants must be in good health, free of structural defects, pests and diseases and in a properly formed and mulched garden bed which is free of weeds before being accepted on-maintenance.
Ground treatments on roundabouts	25. Maximum 1 in 5 slopes graded to be free draining where grass is intended to be planted. The gradient can be increased to a maximum 1 in 3 slope if massed planted using shrubs and groundcovers providing all necessary setbacks and view lines are achieved, safe access for maintenance afforded and adequate drainage to avoid ponding of water is provided. 26.Roundabouts must be installed with subsoil drainage. Where retrofitted to existing roads, original pavement must be treated to ensure optimal conditions for plant growth including good drainage. 27.Where rock is used as a mulch or as an access control device, large-size aggregate not less than 30mm in diameter must be used. 28. Mass planting areas within roundabouts must be irrigated. 29. Area to be turfed to establish grass cover must have a minimum 100mm depth topsoil. Use of grass in roundabouts less than 18m in diameter is prohibited. 30. Planting beds must have a minimum 300mm topsoil and 100mm mulch cover. 31.Mass planting of shrubs and/or groundcovers must have a maximum unpruned height of 600mm above road pavement. Shrubs and groundcovers must be supplied as a minimum 140mm pot size. 32. All plant species must be chosen from Council's List of Plant Species. Species section for tree and any mass planting within roundabout located in the Mackay city local plan area must have regards and be coordinated with street tree planting nominated for individual streets. Refer Appendix A - Mackay City Planting Strategy (revised). 33.Minimum 90% coverage, with minimum weed growth evident is required to be achieved in roundabouts when turfed to achieve grassed cover prior to accepting the landscaping works on maintenance. 34. Plants installed within roundabouts must be in good health, free of structural defects, pests and diseases and in a properly formed and mulched garden bed which is free of weeds before accepting the landscaping works on-maintenance.
Tree planting in roundabouts	35. Trees in roundabouts must be planted in a formed garden bed fitted with subsoil drainage and irrigation.

Design element	Requirements
	36. Semi-mature stock must be no less than 100 litre container size and have a minimum clear trunk height of 1.5 metres above the road pavement at planting. 37. Approved species chosen from Council's List of Plant Species. Refer to the Appendix A - Mackay City Centre Planting Strategy (revised) for species selections for individual streets within the Mackay city centre local plan area. 38. Preference to use single trunked species. Provided view lines and required setback clearances are achieved, group planting or an alternative and multi-trunked species will be considered on merit. 39. Trees must be in good health, free of structural defects, pests and diseases, and appropriately staked before being accepted on-maintenance.
Ground treatments in road medians	40. Ends to medians and where the median width is less than 1.5 metres in width must be finished with an approved hard surface treatment in accordance with Council's List of Furniture and Materials. 41. Mass planting is permitted in medians more than 1.5 metres in width. 42. Grass can only be planted in medians more than 3 metres wide. Use of artificial turf may be considered as an alternative in medians greater than 1.5m in width but less than 3 metres. 43. Planted and fully grassed medians must be installed with subsoil drainage. Where retrofitted to existing roads, original pavement is to be treated to ensure optimal conditions for plant growth including good drainage. 44. Where rock is used as a mulch, decorative feature or as an access control device, large-size aggregate not less than 30mm in diameter must be used. 45. Mass planting areas in medians must be irrigated. 46. Grassed areas must have a minimum 100mm topsoil coverage. 47. Planting beds must have a minimum 300mm topsoil and 100mm mulch cover. 48. Mass planting of shrubs and/or groundcovers must have a maximum unpruned height of 600mm above road pavement. 49. Shrubs and groundcovers must be supplied as a minimum 140mm pot size at the time of planting. 50. Where planting beds interface with areas of mown grass, a concrete garden or mowing edge constructed in accordance with Council's Standard Drawings must be provided. 51. Plants must be chosen from Council's List of Plant Species. Refer to Appendix A -Mackay City Centre Planting Strategy (revised) for species selections for trees for individual streets within the Mackay city centre local plan area. 52. Plants installed in road medians must be in good health, free of structural defects, pests and diseases and be in a properly formed and mulched garden bed which is free of weeds before accepting the landscaping works on maintenance.

Design element	Requirements
Tree planting in road medians	53. Tree planting is provided where the width of the median is 6m or wider. 54. Trees must be planted in accordance with Council's Specifications and Standard Drawings. 55. Where feasible, trees should be planted in formed garden beds. When planted as individual specimens in grassed medians, trees must be appropriately spaced to facilitate mowing. 56. Semi-mature stock must be no less than 100 litre container size and have a minimum clear trunk height of 1.5 metres above the road pavement at planting. 57. Species must be chosen from Council's List of Plant Species and identified for use as a street tree. Refer to Appendix A - Mackay City Centre Planting Strategy (revised) for species selections for individual streets within the Mackay city centre local plan area. 58. Trees must be in good health, free of structural defects, pests and diseases, and appropriately staked before being accepted on-maintenance.
Entry statements within streetscape settings	59. Entry statements must be located within private property. 60. Maintenance of the entry statement (built and any associated softscape components) contained within private property is the responsibility of the property owner.

2.5.1 Alignment, placement and clearances of street trees

1. Street trees placement is flexible provided the performance of trees when mature is demonstrated not to cause impact to above or below ground services or will impede sight lines from a driveway, intersection, bus stop or pedestrian crossing; or

2. The streetscape planting design adopts the following minimum setbacks:
   (a) 4 metres from electricity or telecommunication poles or pillars;
   (b) 7.5 metres from streetlights to ensure effective street lighting;
   (c) 4 metre radius from high voltage transmission lines;
   (d) 3 metres from a fire hydrant;
   (e) 1 metre from stormwater drainage pit or gully drain;
   (f) 3 metres from a driveway;
   (g) 10 metres from the face of the kerb of the adjoining street at an intersection;
   (h) 6 metres from the departure side of bus stops and pedestrian crossings; and
   (i) 1 metre from footpaths or pathways is preferable where space allows. This is often not achievable in constrained streetscape settings and may be reduced as required to viably locate a tree.

3. When selecting species of street trees from Council's List of Plant Species for use in the following on-street situations, consideration must be given to the form of the tree's mature canopy to assist in achieving stated vertical ground clearance heights with minimum pruning as follows:
   (a) 2.5 metres in pedestrian environments shading a footpath or walkway;
   (b) 2.5 metres to shared footpaths and dedicated cycle facilities; and
   (c) 6 metres along bus routes.

2.5.2 Planting setbacks in roundabouts and medians

Planting within roundabouts and medians must be located to achieve the minimum setback requirements as follows.

Setback distances for groundcover and shrub planting in road verges, roundabouts and medians may be relaxed in low-speed environments where it can be demonstrated that the treatment will not compromise the safety of users or the maintenance of landscaping treatments within the streetscape setting.

1. Roundabouts:
   (a) 1 metre setback from the back of kerb for all shrubs and groundcovers; and
   (b) 3 metres setback from the back of kerb for trees.

2. Medians:
   (a) 1 metre setback from back of kerb for groundcover planting
   (b) 1.5 metres setback from back of kerb for shrubs; and
   (c) 3 metres setback from back of kerb for trees.

Roundabouts and larger-sized medians must be designed to provide access and a safe parking location for maintenance vehicles.

2.5.3 Irrigation and sub-soil drainage

All areas planted within a roundabout or median must be fitted with an automatically controlled IRRInet system to Council's specifications and Standard Drawings. Temporary and manual irrigation systems can be used to establish buffer landscaping or where roadside re-vegetation works are proposed.

Where feasible, irrigation servicing on-street landscaping should be fed from and /or coordinated in its design with services provided in a nearby recreational park. This may allow on-street landscaping to share the supply connection, reduced pressure zone (RPZ) backflow protection device and use of the IRRInet controller installed to service the recreational park. In this situation, the caged enclosure would also be located within the recreational park and from its road frontage. The installation of irrigation pipework across the underground services located within the verge is prohibited unless at an approved and identified connection point.

If irrigation servicing on-street landscaping can't be fed from a recreational park, a separate irrigation network with connection will need to be provided within the subject road reserve. A discrete but accessible location will need to be identified for the siting of the caged enclosure protecting the required RPZ and irrigation's controller to service the on-street landscaping. Any roadside location for the caged enclosure must be sufficiently sized and located to provide safe access and parking for maintenance vehicles.

In addition, the following requirements must be considered.

Design element	Requirements
RPZ and controller	1. The RPZ and controller must be co-located and enclosed within a protective cage. Both the design of the cage and arrangement of the various components providing connection for the irrigation system is to in accordance with the Council's Standard Drawings and Specifications.

Design element	Requirements
	2. The caged enclosure is to accessible for maintenance and appropriately located to not detract from the character and aesthetics of the streetscape.
Pipework under roads	3. All irrigation pipework installed under roadways must be laid in minimum 100mm dia. uPVC Class 9 conduit of diameter equal to that of the irrigation pipe plus 50%.
Conduits	4. Conduits must be provided under footpath and areas of hardstand to allow for expansion of the irrigation system in the future. 5. The position of conducts under footpaths and areas of hardstand must be permanently marked on site within the pavement and on the construction drawings.

3 REQUIREMENTS FOR THE DESIGN OF RECREATIONAL PARKS

3.1 Introduction

A recreational park is land that is provided and designed to meet the sport and recreational needs of the community in accordance with objectives and standards identified in the Planning scheme policy - open space.

Landscaping works associated with a recreational park will include 'hard-scape' or constructed elements such as pavements, fences and/or walls, buildings including public toilets and shade structures, as well as a variety of furniture and fixtures. In some instances, the hard-scape component may also include the design and construction of play spaces involving the installation of equipment and/or a playing surface of some type. Landscaping works will also have a 'soft-scape' component involving the planting of trees, shrubs and groundcovers including the seeding or turfing of useable and open grassed areas. Elements like the construction of edging treatments necessary to define garden or massed planting beds, and the installation of irrigation to sustain planting is also included, and these types of components will be considered part of the hard-scape.

3.2 Design objectives and principles

The following objectives and principles apply to the landscaping of all types of recreational parks.

Objective 1: Access and connectivity

Recreational parks are designed to be accessible and enjoyed by all.

This objective can be achieved through the following design principle:

- Provide an accessible path of travel to enable access to each type of recreational opportunity afforded within a recreational park. Any unique feature or recreational opportunity must be able to be accessed via a fully compliant disabled accessible path.

Objective 2: Safety

Recreational parks are designed to ensure the safety of users, promote community safety and discourage antisocial behaviour including vandalism.

This objective can be achieved through the following design principles:

- Crime Prevention through Environmental Design (CPTED) principles are used in the design of landscaping treatments in recreational parks to promote personal safety and discourage anti-social behaviour and vandalism of open space assets.
- Recreational park elements are designed to minimise any safety risks for the end user.

Objective 3: Physical activity

Recreational parks are designed to encourage and support people to be physically active.

This objective can be achieved through the following design principles:

- Recreational parks must be accessible and promote active modes of transport such as walking and cycling.
- Recreational parks are to be adequately shaded to ensure people's comfort.
- Recreational parks must offer access to spaces of suitable size and type allowing people to participate in a variety of play and other types of physical activity including sports.
- Recreational parks must offer access to potable drinking water.

Objective 4: Sense of place

Landscaping design reinforces and promotes the unique features of a recreational park to make it distinctive and memorable.

This objective can be achieved through the following design principles:

- Landscaping treatments promote views through and within a recreational park to all distinguishable and amenity features contained within the site or that may be visible from the recreational park in the surrounding urban area.
- Landscaping treatments should be sympathetic to the character of the park's the surrounding context.
- Hard and Soft-scape components of a park's landscaping treatment should be selected and/or designed to work together to offer a visually cohesive, consistent and discernible character to the recreational park.

Objective 5: Functional performance

Recreational parks are designed to support their function within the region's open space network.

This objective can be achieved through the following design principle:

- Built and softscape components within a recreational park assist in conveying the type and intended function of a recreational park in terms of user catchment, frequency of visitation and length of stay.

Objective 6: Lifecycle cost

Landscaping treatments are designed to minimise maintenance costs based on the lifecycle cost of infrastructure.

This objective can be achieved through the following design principles:

- Recreational parks are designed to minimise maintenance cost though the appropriate use of materials, plant species selection and the lifecycle cost of infrastructure.
- Design of landscaping treatments must consider lifecycle cost and be constructed to be fit-for-purpose given the role and function of a recreational park within its urban context.

3.3 Landscape design requirements for recreational parks

The design of a recreational park:

(a) responds to individual site conditions;

(b) complies with the requirements determined by the type of recreational park as identified by the hierarchy of parks; and

(c) must achieve the planning and design objectives set for recreational open space as described in the Planning Scheme Policy – Open Space.

Council's 'Guidance Document for Landscape Documentation' prescribes the format and content of documents required for development involving the landscaping of a recreational park

Applications for a Material Change of Use or Reconfiguring a Lot involving the creation of and/or landscaping works within a recreational park must be accompanied by a Site Analysis and Statement of Landscape Intent. A Landscaping Plan, supported by an Open Space Maintenance Plan (OSMP), must also be submitted for approval at the Operational Works stage for all development involving a recreational park of any type. Where a Statement of Landscape Intent has been endorsed through an earlier approval, the Landscape Plan must be in accordance with that approval.

Landscape plans for a recreational park are to be prepared by or under the supervision of a Registered Landscape Architect (AILA). Prior to lodgement to Council for assessment, the landscaping plans must be reviewed and certified by a Registered Professional Engineer of Queensland (RPEQ) to ensure that landscaping treatments will not impact the operation or ongoing maintenance of any civil works component of the development. This includes certifying that landscaping treatments will not:

(a) reduce design capacities of the designed drainage system;

(b) impinge on intersection and property access sight distances or vehicle operator safety within roadway clear zones;

(c) impact street lighting standards for either vehicular or pedestrian traffic; and

(d) impede future maintenance operations.

On completion of both hard-scape and soft-scape components, landscaping works within a recreational park will be subject to inspection by Council prior to being accepted 'on-maintenance'. Once accepted on-maintenance, the park's landscaping must be maintained by the developer for a minimum 12-month period. After the 12 month maintenance period, the recreational park must pass an 'off-maintenance' inspection before being handed to Council.

Responsibility for the establishment of softscape components and the rectification of all defects during the on-maintenance period resides with the Developer. Council inspectors will conduct regular inspections throughout the maintenance period to ensure adequate establishment and maintenance is undertaken.

When plants or areas of grass cover need to be replaced due to defect or failure during the maintenance period, these components will only be accepted off-maintenance where it can be demonstrated by the developer that planting and grass have been established in situ for a minimum of 12 weeks. Trees, plants and areas of grass must be established post-planting for a minimum 12 weeks to ensure that they are well established. Defects should be corrected as soon as they are identified.

3.4 Existing vegetation requirements

Trees located within an existing or proposed recreational park are to be retained and protected from impact during construction unless approved for removal by Council. Removal of trees from an existing or future recreational park will only be considered where the tree is assessed by a qualified arborist to be in poor physical condition or poses a safety risk due to its structural form.

All instances where removal of trees and/or vegetation without prior consent occurs, may result in penalties under Council's Tree and/or Vegetation Vandalism Policy 013. These matters will be referred for action by the Department of Natural Resources and Mines under the *Vegetation Management Act 1999.*

3.5 Landscaping requirements for recreational parks

The following requirements are applied to landscaping works in recreational parks. Design and construction of hard-scape and soft-scape components is to be undertaken in accordance with Council's Standard Drawings and Specifications, List of Furniture and Materials as well as the List of Plant Species.

Council will not accept the use of powder-coated black steel components on any part of built elements including bridges, structures of any type and handrails located in a recreational park. The use of timber in construction is not encouraged. Where timber is used, preference is for hardwood in structures other than fencing where treated softwood is acceptable. Except for boundary screen fencing posts, the use of timber will only be considered where the design of this material's application avoids direct contact with the ground.

3.5.1 Treatment of recreational park boundaries

Design element	Requirements
Fencing for boundary shared with private property	1. A fence is designed to discourage access (including climbing) from a park into private property. This may be achieved by positioning palings to the reverse or park-side. 2. Access to a private property from a recreational park does not occur. Gates, if provided or needing to be replaced, must be fitted with a security lock accessible from the adjacent property. 3. The height of fencing must be: (a) Maximum 1.8 metres; or (b) when installed on top, or on the high-side of a retaining wall, may be reduced to 1.2 metres where the combined height of the fence and retaining wall exceeds 1.8 metres. 4. Ameliorate the visual impact of high retaining walls and fencing where boundary treatments result in the adjacent ground height being raised more than 600mm above the level of a park. Incorporate devices to draw attention away from the boundary and/or introduce elements into the foreground view to balance or screen the visual dominance of the retaining wall.
Planting on boundary shared with private property	5. Garden beds must be setback a minimum 1 metre from the shared fence line. 6. Areas between garden beds and boundary fencing must be able to be maintained. Where the 1 metre minimum setback adopted, the area must be a mulched surface laid on compacted base with weed matting underlay to supress weeds. Understorey planting must not

Design element	Requirements
	exceed a maximum height of 1 metre to maintain casual surveillance of the shared property boundary. Where the area between a garden bed and boundary fencing is to be grassed, the off-set to the boundary fencing must be not less than 3 metres to enable mowing. 7. Areas between garden beds and boundary fencing. Where timber fencing is used, finish palings 10mm above finished ground level to prevent rotting. 8. Trees are setback to prevent canopies overhanging the fence line when mature. 9. Plants are selected from Council's List of Plant Species.
Fencing for a boundary with a road reserve	10. Install fencing or bollards designed in accordance with Council's Standard Drawings and List of Furniture and Materials to prevent unauthorised vehicular access and to visually identify the site as being a recreational park.
Signage to a boundary with a road reserve	11. A standard 'Park Name' sign must be installed along all road frontages to a recreational park and designed in accordance with Council's Standard Drawings and List of Furniture and Materials. The sign must be visible and legible on approach to the recreational park from the road.
Access and movement on shared boundary with a road reserve	12. Provide convenient access into the recreational park for pedestrians and cyclists along all road frontages. 13. Provide a minimum 3.6-metre-wide vehicle access, fitted with an approved lockable gate or sliding rail system in accordance with Council's List of Furniture and Materials for use by authorised maintenance and emergency vehicles from the primary road frontage or from all road frontages if feasible. 14. Incorporate traffic calming devices such as chicanes, pinch point, defection rails (banana bars) and/or the use of contrasting surface treatments at the shared boundary along shared pathways to slow bicycles. Defection rails (banana bars) are not to be fitted where interfacing a state-controlled road.
Planting on a shared boundary with a road reserve	15. Avoid massed or screen planting along road frontages which obstruct views into the recreational park from the street and/or adjacent properties. 16. Selected planting or use of grassed mounding is desirable to screen unsightly features and to direct sightlines though the recreational park. In these instances, such treatments must ensure casual surveillance of areas within the recreational park is maintained for safety and to deter antisocial behaviours. Any mounding must be a maximum 1 in 5 slope. 17. Species must be selected from Council's List of Plant Species.
Boundary shared with a coastal reserve	18. Where a recreational park extends to the high-tide mark in a coastal location, beach protection fencing must be installed parallel to the coastline with adequate setbacks to protect the foreshore dunes. Where natural dunes have been replaced with a seawall or other constructed protective system, the requirement for beach protection fencing is negated. 19. Where a recreational park shares a boundary with a coastal reserve established to protect the coastline's dune system and vegetation, the boundary is to fenced using beach protection fencing designed in accordance with Council's Standard Drawings and List of Furniture and

Design element	Requirements
	Materials. The alignment of the fencing may need to be adjusted to avoid clearing of mature trees and other coastal vegetation. 20. Access from the recreational park through the dune system to the beach front is to be controlled using constructed beach accesses designed in accordance with Council's Standard Drawings and List of Furniture and Materials. The position and frequency of constructed beach accesses is to be guided by the location's Coastal Plan. 21. An asset protection zone is to be established along the line of the beach protection fencing inside the recreational park. The asset protection zone is to contain only grass that can be regularly mowed and be trafficable by maintenance and emergency vehicles. The width of the asset protection zone is: (a) 10m; or (b) A smaller asset protection zone (minimum of 3 metre) will be considered where the applicant can demonstrate that the recreational park provides adequate physical separation to ensure that adjacent development is protected from bushfire risk; and (c) The positioning and/or alignment of the asset protection zone is to be adjusted to preserve as much mature remnant vegetation as possible without compromising the function of the asset protect zone.
Fencing to a shared boundary with a natural waterway, drainage lot or Water Sensitive Urban Design (WSUD) feature	22. Where there is an identified public safety risk like the presence of steep embankments or permanent body of water, a fence is required along the shared boundary between the recreational park and the natural waterway, drainage lot and/or WSUD feature. 23. Where fencing for public safety is required, it must be a 1.2-metre-high childproof aluminium post and panel fencing. This type of fencing will provide the necessary safety barrier but retain views to remnant vegetation and/or waterbody. Fencing should be co-ordinated with planting and/or the provision of a constructed maintenance edge to facilitate mowing or slashing within the recreational park.
Planting for shared boundary with a natural waterway, drainage lot or WSUD feature	24. A constructed maintenance edge must be provided in situations where remnant vegetation with a native understorey is to be retained or reinstated as part of the management of the adjoining natural waterway, drainage lot or WSUD feature. The purpose of the constructed maintenance edge is to define and separate areas of native understorey from those parts of the recreational park where the grass cover will be mowed or slashed. 25. Where a viable connection from a public road frontage is afforded, construct a concrete path (shared or pedestrian path depending on the park's context) as the maintenance edge to areas where a native understorey will be retained or reinstated to an adjoining natural waterway, drainage lot or WSUD feature. The path should be located within the recreational park and setback no less than 1.5 metres from the shared boundary. The area between the footpath and shared boundary must be revegetated with species endemic to the recreational park's location and context with the native understorey planting. Plant selection must also be sized and located to avoid becoming an obstruction to pedestrians or cyclists once planting is mature.

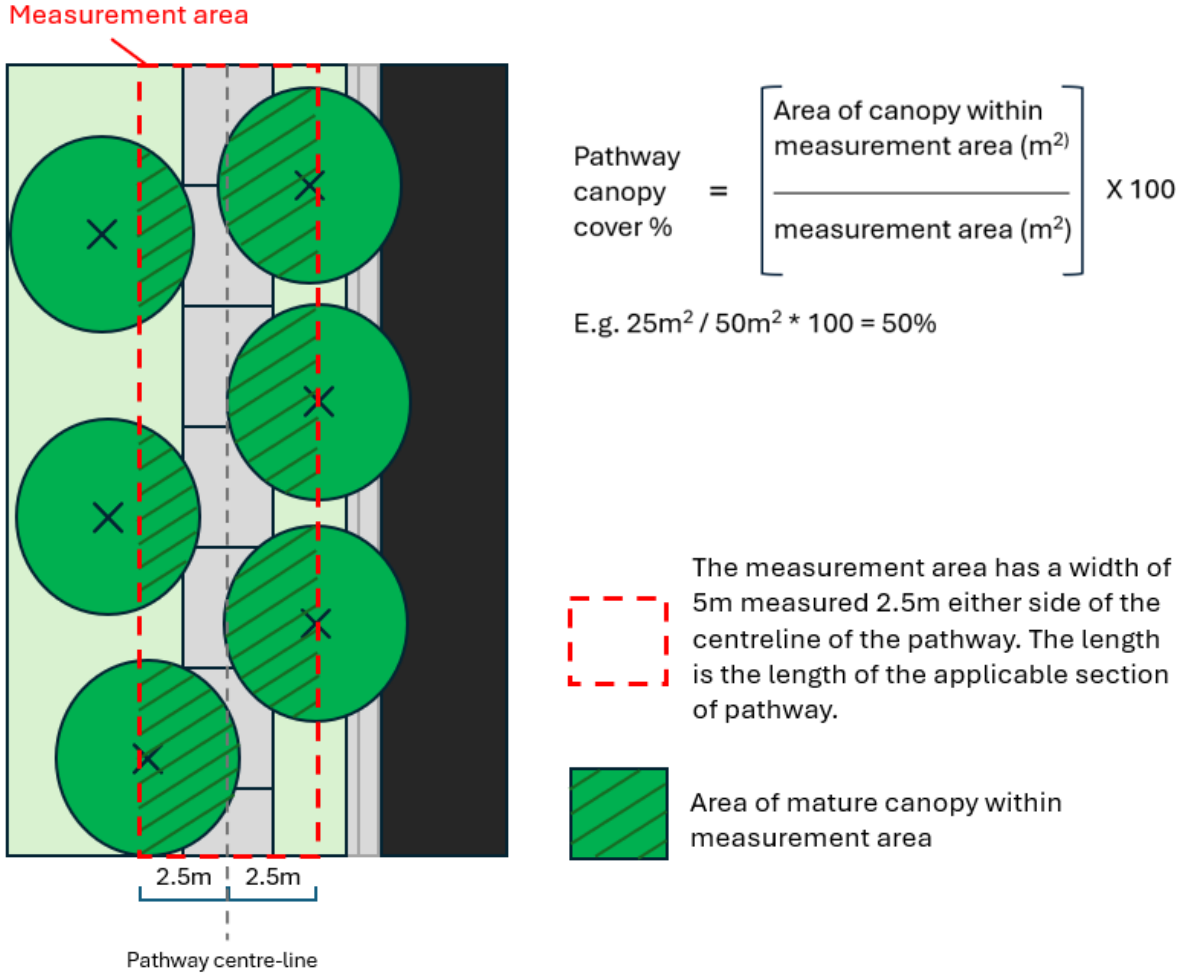
3.5.2 Circulation

All constructed paths located within a recreational park must comply with the requirements outlined in Planning scheme policy – cycle facilities and pathway design and be designed:

(a) With a trafficable surface suitable for its intended use and be free draining. The edges of a path are to be finished at the same level as the trafficable surface and appropriately graded back to natural ground; and

(b) To avoid being impacted by overland stormwater flows and wherever feasible, localised flooding. Where regular and significant flooding of a path is anticipated, signage and water depth markers are to be installed to alert pedestrians and cyclists to the potential safety risk.

Trees are planted on all paths to achieve the target of 50% canopy coverage over pathways at maturity (refer below figure for guidance on how to measure). Trees are to be setback a minimum of 1.5 metres to pathways (measured from edge of path to centre of tree). Designers must give consideration to choosing appropriate species to provide shade, while minimising root damage and canopy conflicts. Larger setbacks up to 2.5 metres may be required for certain species. Species with highly invasive roots or low, spreading canopies are not appropriate for planting near pathways and should be planted at a distance that sets their mature canopy clear of the pathway. Refer to the List of plant species for guidance.



Pathway canopy cover calculation diagram

In addition, the following requirements will be applied to various type of paths provided within recreational parks.

Design element	Requirements
Shared paths	1. Designed to allow pedestrians and cyclists to use the path at the same time. New paths are integrated into the local transport network to provide connectivity between existing and/or planned shared pathways and dedicated cycle facilities. 2. Minimum 2.5 metres in width. 3. Rest stops with shaded seating are provided at 400 metre intervals along the shared path route when located in a recreational park. 4. Trees that are planted to shade a shared path must achieve vertical clearance with a minimum of pruning of not less than 2.7 metres to the path's trafficable surface.
Footpaths	5. Designed for pedestrian use only. 6. Minimum 1.5 metres in width. 7. Align with desire lines or the routes that people will most likely walk to gain access to recreational opportunities in the recreational park and should capitalise on views contributing to the recreational park's amenity. 8. Position to promote direct line-of-sight through the recreational park to assist with wayfinding. 9. At a minimum, an all abilities accessible footpath must be provided through a recreational park to provide connection to activity nodes and any unique features developed in the recreational park. 10. Footpaths must provide access to shaded seating within the recreational park.

3.5.3 Furniture and fixtures

The provision of furniture and fixtures within recreational parks should meet the following general requirements outlined. Park furniture and fixtures must be installed in accordance with Council's Standard Drawings and List of Furniture and Materials.

Design element	Requirements
General	1. Locate furniture within a recreational park to encourage congregation and provide opportunities for social interaction. 2. The furniture and range of fixtures used in a recreational park should be coordinated in terms of design style or character, material selection and colour scheme to achieve visual coherence. 3. Where feasible, furniture and fixtures are to be accessible from a constructed footpath or shared path. 4. All items of furniture and fixtures are to be surface mounted to a concrete surround or slab sized and constructed in accordance with Council's Standard Drawings.
BBQ facilities.	6. Electric BBQ hotplates in accordance with Council's List of Furniture and Materials are to be installed in recreational parks. 7. BBQs must be installed under a roofed shelter to assist in protecting the equipment from advertise weather conditions and to maximise the operational or service life of the equipment.

Design element	Requirements
Bins	8. The location of bins within a recreational park must allow for easy collection within the site and transport to the kerbside at the park's primary road frontage for roadside rubbish collection. Where feasible, bins should be located next to a constructed path to encourage use of the bin and to assist with rubbish collection.9. Bins are co-located to service activity nodes within the recreational park where rubbish is likely to be generated, including picnic areas. 10. Bins should be visible but not visually intrusive and are not located between seats or on the side of the prevailing south-east breeze (i.e. downwind) to picnic settings. 11. Wheelie bins must be housed within an enclosure in all district and regional parks and other high-profile areas. Bin locks are to be fitted in all other recreational park types and locations.
Water bubbler / fountains and bottle re-fill stations	12. Water bubblers, drinking fountains and/or bottle re-fill stations must be located where they can be easily accessed and near activity areas like a playground, picnic areas or where active recreation is encouraged. Where feasible, these types of fixtures should be accessible from a constructed pathway. 13. Care is to be taken when siting the bubbler or drinking fountain to ensure adequate drainage. The design of area surrounding these fixtures is to accommodate water spray and/or spillage and to avoid paths become slippery due to constant wetting. 14. All drinking fixtures regardless of type are to be fitted with a maintenance tap.

3.5.4 Shade provision

A combination of built and natural shade is considered the most effective and sustainable outcome for shade creation in a recreational park. Council adopts the guidelines recommended by Queensland Health – Creating Shade at Public Facilities. In designing for shade, the following requirements apply.

Design element	Requirements
Built shade	1. The use of shade sails and/or portal framed structures in recreational parks are prohibited due to the vulnerability of these types of structures to vandalism and cyclonic weather conditions. 2. Prefabricated roofed shelters must be sourced from an approved manufacturer and be structurally certified and cyclone rated for use in the Mackay region. Bespoke or customised shelters will only be considered in regional parks. 3. Shade structures must be constructed using non-corrosive materials. All structural components must be hot dipped galvanised, aluminium, stainless steel or timber. When timber is used, all fixing hardware must be 316 stainless steel. Council will not accept the use of powder-coated black steel components on any part of built elements. 4. The material specification for any type of structure/s located within 1.5 kilometres of the coastline must be suitable for marine environments. 5. Shelters are sized in relation to their intended function.

	6. Shelters are located and orientated to maximise comfort and protection from sun and adverse weather conditions, block glare, and take advantage of views of adjacent activities or natural features. 7. Stormwater discharge from roofed structures must be directed away from high traffic areas and avoid washout of the surrounding surface treatments or scouring of the ground immediately adjacent to the structure.
Natural shade	8. The design for a recreational park must retain remnant trees where of a substantial size and height of 3 metres or greater. 9. Tree species selected for a recreational park have a large canopy spread. 10. Fig Trees (Ficus species) are not planted adjacent to playgrounds due to issues relating to invading roots on softfall areas. 11. Species endemic to the park's location are preferred to be are planted as they are more suited to the local soil and climatic conditions and as such likely to perform well however, trees must be selected from Council's List of Plant Species unless alternative species can be justified in an approved Landscaping Plan.

3.5.5 Public toilets

Public toilets are provided in new district and regional recreational parks or by exception in a local or linear park where community need for a public toilet can be demonstrated to the satisfaction of Council. Existing public toilets in lower order recreational parks will be progressively decommissioned when renewal of aged facilities is required. When there is a requirement to provide public toilets in a recreational park, the following requirements are to be considered.

Design element	Requirements
General	1. Prefabricated toilet units must be sourced from an approved manufacturer and be structurally certified and cyclone rated for use in the Mackay region. Bespoke or customised shelters will only be considered in regional recreational parks. 2. The structure must be constructed using non-corrosive materials. All structural components must be hot dipped galvanised, aluminium, stainless steel or timber. When timber is used, all fixing hardware must be 316 stainless steel. Council will not accept the use of powder-coated black steel components. 3. The material specification for a structure located within 1.5 kilometres of the coastline must be suitable for marine environments. 4. All internal finishes, fixtures and fittings are to be vandal resistant and waterproof. 5. The structure and its fit-out must be fully *Disability Discrimination Act* (DDA) compliant offering at least one unisex wheelchair accessible cubicle equipped with a pull-down baby change table, sharps disposal receptacle and sanitary bins. 6. The design of the structure is to be aesthetically pleasing with the choice of materials and colour selections coordinated with other elements in the recreational park. 7. Stormwater discharge from roofed structures must be directed away from high traffic areas and avoid washout of surrounding surface

Design element	Requirements
	treatments or scouring of the ground immediately adjacent to the structure. Where the direction of stormwater discharge from the roof conflicts with pedestrian access, at a minimum, guttering is to be installed to protect the points of entry into the structure.
Siting, access and safety	8. Public toilets must be visible and have direct access from the recreational park's off-street carpark or primary road frontage when off-street parking is not provided in a lower order recreational park. 9. Public toilets must be accessible from the recreational park's main activity areas. A minimum 10 metres separation must be provided between the public toilets and other park amenities including picnic settings and children's play equipment. 10. Public toilets must be accessed from a constructed path with the entrances orientated to facilitate casual surveillance. 11. Entrances are fitted with external security lighting and provisions allowing the toilets to be locked at night. Public toilets in parks are open for use between 5.30am and 9.30pm daily.

3.5.6 Lighting

Lighting of recreational parks beyond the mandatory requirement at the primary road frontage, will be considered on merit. In the case of sports parks, the need for lighting of fields and other facilities will be dependent on the lease arrangement with individual sporting organisations.

Situations where lighting is anticipated to be required in recreational parks include:

(a) When the recreational park will be used as a high-volume public thoroughfare;

(b) When public toilets and/or electric BBQ facilities are provided, both the BBQ shelter and nearby picnic settings when under shelter are typically lit to enable early morning or evening use;

(c) When informal sporting activities have been provided within the recreational park and the use of these facilities in the early evenings is desirable given the local climate; and

(d) Locations where improving public safety is a priority or a need to discourage antisocial behaviours such as vandalism.

When lighting is required in a recreational park, the following requirements will need to be considered. Fixtures and fittings installed in a recreational park are to be selected in accordance with Council's List of Future and Materials.

Design elements	Requirements
General	1. Locate electrical switchboards and/or enclosures so that these are accessible for maintenance and do not compromise views or the public's access through the park. 2. Where lighting is required to be installed in beachfront locations, it must limit the impact on coastal and marine life. This is to be achieved using wildlife and/or turtle friendly lighting and/or other methods to control light spill impacts including shielding. 3. Lighting associated with the recreational use of the park must be controlled on a timer. This includes lighting to picnic shelters, informal sporting facilities and feature lighting for amenity purposes. Lights within a park are progressively sequenced to be fully turned-off by 9.30pm to avoid disturbing residents living in the immediate vicinity of the park.

	4. Feature lighting used to up-light trees, signs, buildings or public art is only suitable for high profile locations in district or regional parks.
Pathways	5. Pathway lighting is to be designed in accordance AS/NZS 1158.3.1: Pedestrian area (Category P) lighting.
BBQ facilities	6. Lighting is to be installed where electric BBQ facilities are provided and for picnic shelters adjacent to BBQ facilities.

3.5.7 Planting design

When designing planting and determining the species pallet for the location, reference should be made to Council's List of Plant Species.

Consideration must be given to the following requirements.

Design element	Requirements
General	1. Remnant vegetation must be retained and incorporated as part of the recreational park's overall landscape presentation. 2. Provide plant species endemic to the location and/or Mackay region to encourage local wildlife as well as supporting the region's natural flora.
Structural planting (Trees)	3. The planting of trees to provide: (a) Vertical form and sense of enclosure within the landscape setting; (b) Shading; (c) Visual interest; and (d) Accentuated or frame lines-of-sight through the site to assist with wayfinding within the recreational park. 4. Cluster trees to replicate nature. Ideally grouped plantings should be contained within mulched garden beds to avoid the need to trim grass around and between the individual specimens. Where planting trees in a grassed area, tree planting must be spaced adequately to allow for mowers to access all grassed areas. 5. Trees that cause a nuisance such as producing fruit or sap that stains; dropping large fruit/seed pods; or fruit prolifically, must be planted within a constructed garden bed and positioned to not overhang paths, hard surfaces, roofed shelters/structures, and park furniture. 6. Trees must be supplied as semi-mature stock with a minimum 45 litre pot size, unless part of a re-vegetation scheme aimed at recreating a native bushland area. This includes specimen trees planted in grassed areas as well as trees included in massed bed or garden settings. 7. Trees must be in good health, free of structural defects, pests and diseases and either contained within a mulched garden bed or has a properly formed and mulched watering saucer which is free of weeds before being accepted on-maintenance.
Infill and understorey plantings	8. Shrubs and other types of groundcovers, excluding lawns, must be planted in a garden beds constructed in accordance with Council's Specifications and Standard Drawings. Garden beds must have a minimum 300mm topsoil and 100mm depth of mulch coverage. 9. All garden beds within a recreational park must be irrigated.

Design element	Requirements
	10. Garden beds must be appropriately sized to support optimal growth for the root systems of species planted. Garden beds must be a minimum 1 .5 metres in width. 11. Avoid acute angles in design of garden beds. Garden edging terminates perpendicular to a path or hardstand area. 12. Garden beds located within or adjacent to a grassed area must have a constructed edge to contain planting and facilitate maintenance. The edge is to be of an approved type in accordance with Council's List of Furniture and Materials and Standard Drawings. The use of extruded concrete edging is not permitted in recreational parks. 13. Planting adjacent to paths and/or hardstand areas must be sufficiently setback based on the species type used so that when mature, plants do not require pruning to remove an obstruction. 14. At the time of planting, small shrubs and groundcovers must be supplied at a minimum of 140mm pot size. Larger shrubs at a minimum of 200mm pot size. 15. The use of tube stock is appropriate for revegetation works provided the planting density is not less than 4 plants per square metre. 16. Plants must be in good health, free of structural defects, pests and diseases and in properly formed and mulched garden bed which is free of weeds before being accepted on-maintenance.
Maintained grass cover	17. All grassed areas must: (a) have gradients no steeper than 1 in 5. This includes grassed swales, open drains and batters within the recreational park; and (b) have a width greater than 2 metres or greater than 3 metres where located next to a structure or fence; and 18. Designs to avoid acute angles to grassed areas formed by paths and/or constructed edges. 19. Grass is to be separated from garden beds with an approved edging treatment. 20. Grassed areas intended to be used as an open recreational space need to be accessible and located to be adequately separated from any adjoining private property boundaries to alleviate noise issues from recreational activities. 21. Minimum 90% grass coverage, with minimum weed growth evident across the entire length of the subject verge is required to be achieved prior to accepting the landscaping works on-maintenance.

3.5.8 Irrigation requirements

Irrigation is required to be installed to support planting within constructed garden beds in recreational parks. The irrigating of maintained lawn is only required where a quality playing surface is needed for competition purposes. Temporary irrigation is provided when revegetation works are undertaken.

Consideration is given to the following requirements when irrigation is required to be provided.

Design element	Requirements
Reduced pressure zone (RPZ) and controller	1. Irrigation installed in recreational parks must be automatically controlled using an IRRInet system to Council's specifications. 2. RPZ backflow protection device must be installed. 3. The RPZ and controller must be co-located and enclosed within a protective cage. The design of the cage and arrangement of the various components providing connection for the irrigation system must be in accordance with the Council's Specifications and Standard Drawings.
	4. Wherever practical, the caged enclosure protecting the RPZ and controller must be located close the water supply along the recreational park's primary road frontage. 5. The caged enclosure must be accessible for maintenance and located in a discrete position which doesn't detract from the recreational park's landscape presentation or views into the recreational park from the primary road frontage.
Conduits	6. Conduits are to be provided under footpaths and hardstand areas to allow for expansion of the irrigation system in the future. 7. The position of conduits under footpaths and hardstand areas must be permanently marked on site within the pavement and on construction drawings.

3.5.9 Mounding

Mounding can be incorporated into the landscape design for a recreational park to provide visual interest or to act as a screening device. The following requirements must be taken into consideration when designing mounds.

Design element	Requirements
Gradient	1. Grassed mounds must not have a gradient that is steeper than 1 in 5 with a flattened top of at least 1 metre wide to enable mowing. 2. Planted mounds within garden beds must not have a gradient that is steeper than 1 in 3 to ensure that loose mulch can be retained on the sloped surface of the mound. 3. Mounding does not impact overland flows causing flooding.

3.5.10 Ornamental water features

The inclusion of constructed water features such as ornamental fountains or ponds, wishing wells and the like will only be considered in a regional recreational park and where its inclusion has a specific and justified reason supporting expression of the site's architectural heritage, ceremonial or civic function. The use of these types of features for ornamental purposes is discouraged in lower order recreational parks due to the excessive cost, high maintenance demand and vulnerability to vandalism.

Ornamental water features do not include embellishment of necessary drainage features including Water Sensitive Urban Design (WSUD). Overland stormwater flow paths or edges of permanent water bodies may be constructed or dressed using built elements such as rock, rock pitching or concrete to improve their aesthetic appearance, safety, functional performance or to assist with weed control.

3.5.11 Public art, memorials, monuments and plaques

Council encourages and supports the design and installation of artwork in public places. Public art must be commissioned by Council and is either sited or staged within a public outdoor space, including both a streetscape setting and recreational park. In accordance with the Council's Art Collection Policy, other commemorative works including memorials, murals, mosaics, decorations and banners are not public art. The inclusion of these types of elements within a public space like a recreational park or streetscape, is subject to the requirements outlined in Council's Memorial, Monument and Plaque Requests Policy 080.

Reference should be made to the Council's Guidelines for the installation of Art in Public Places and to Council's Art Collection Policy 071. Consideration must be given to the following requirements when proposing public art in a recreational park.

Design element	Requirements
Location	1. Public art is used to create activation, animation and provide a destination as a focal feature within the landscape setting of a recreational park. 2. Public art is located to complement and not impede the recreational purpose and use of the recreational park.
Materials and Construction	3. The design of the artwork, including materials used, must be robust and suitable for outdoor installation and be vandal/graffiti resistant. 4. Installation must be able to achieve cyclone rating certification necessary for the Mackay region.

3.5.12 Park signage (including park naming convention)

Signage is required in recreational parks for identification purposes and to assist those visiting the recreational park:

a) to find their way;
b) interpret aspects of the recreational park's features or attractions; and
c) for regulatory and safety purposes.

All signs installed within recreational parks must be designed in accordance with Council's Visual Identity Manual, List of Furniture and Materials and constructed in accordance with Council's Standard Drawings. Where required, the relevant standard international regulatory and safety symbols are to be used.

The naming of recreational parks is subject to comply with Council's Naming of Infrastructure Assets Policy 090.

3.6 Children's playgrounds

The selection and layout of play equipment, and other components of an outdoor playground in a recreational park must be included as part of a Landscape Plan for the recreational park. In addition to the requirement outlined in the Guidance Document for Landscape Documentation, Landscape Plans must illustrate all built components of the playground and the immediate surrounds including:

(a) alignment of underground and overhead services where these occur in or close to the future play space;
(b) layout of play equipment with individual fall zones and clearance to other built elements indicated for each item;

(c) information demonstrating the suitability of proposed softfall treatments including surface and sub-soil drainage protecting the softfall; and

(d) plans, sections and elevations of all built shading elements provided to protect play equipment.

3.6.1 Inclusive play

Council is committed to providing opportunities for all children, regardless of their abilities, to access and participate in outdoor playground activities. All new outdoor playgrounds installed in a district or regional park must be designed for inclusive play.

The overarching design consideration necessary for an inclusive playground is accomplished in two ways, either:

(a) play equipment can be shared; or

(b) the equipment is modified to allow children to play side-by-side and to enjoy the same type of activity.

While it is anticipated that not everyone will have the ability to access or use all the equipment in a playground, it is a requirement that everyone is offered the choice of a range of activities within the same play space.

3.6.2 Types of play

Play equipment is purposely-designed to encourage activities, through play, involving or requiring children to use a single or a selective mix of developmental skills. These are broadly categorised as following types of play:

- Active Play – Fixed equipment encouraging climbing, swinging and jumping essential in developing physical strength, coordination, spatial awareness and balance.
- Imaginative or Creative Play – Settings encouraging role play and use of a child's imagination and creativity in making their own games.
- Social Play – Settings encouraging groups to interact and play together to promote communication and social skills including leadership and teamwork.
- Quiet Play – Spaces allowing children to retreat to read or participate in other types of activities requiring concentration. These spaces also allow individuals to quietly observe other children and build confidence before joining in.
- Exploratory and Nature Play – Spaces aimed at stimulating the senses by introducing or exposing children to different textures, heights, shapes, colours and scents. This typically involves an element of discovery and provides the opportunity to introduce natural elements.
- Free Play – Purposely maintains area of open grassed spaces both flat and sloping to provide opportunities for activities such as rolling, running, catching a balls, somersaults and handstands. Free play is different to Active play because the use of the space is not prescribed. Free play helps to build physical endurance.

3.6.3 Playground hierarchy

Outdoor playgrounds are categorised as either a local, district or regional facility. Like the hierarchy applied to recreational parks, each type of playground is intended to service a defined population catchment. The catchment is also set by prescribed travel distance based on travel mode which influences both the frequency and anticipated length of stay per visit of playground users.

A playground's hierarchy will typically match the category of recreational park in which it is located but may be adjusted based on the local context and needs of residents living in the immediate area. For example, where it is desirable for more than one playground to be provided in a higher order recreational park due to the size or access restrictions, the status of each playground's hierarchy may be reduced,

although combined, the requirements of a higher order playground will still be met. Similarly, in rural catchments, due to the size of the resident population, the provision of a local playground is generally sufficient to meet the play needs of local children despite it being in a higher order recreational park.

In addition to the general requirements which apply to all outdoor playgrounds in recreational parks, the selection of play equipment and its arrangement must match the intended frequency and length of visit depending on the playground's hierarchy. The following requirements apply each type of playground.

Playground hierarchy	Requirements
Local	1. A familiar play space designed as a recognisable meeting place for and within the surrounding neighbourhood. 2. Visited by users within 400 metre travel radius or comfortable walking distance to encourage frequent visits. Access to and through the recreational park to the playground allows for cycling given the neighbourhood context. 3. Designed to be visited daily by most users and for short visits lasting no more than 1 hour. 4. Between 4 and 6 play activities are provided at a minimum depending on the size and context of the local park. The selected equipment is sized to allow a minimum of 10 children to play at once on the playground. 5. The play equipment selected must, at a minimum, cater to the two youngest age bands.
District	6. A destination play space offering enough attraction to warrant users purposely travelling to the recreational park to use the playground. The play space has a recognisable theme and is distinctive in character to make the playground memorable to users. 7. Visited by users within a 2-kilometre travel radius. Most users are anticipated to drive to the recreational park to use the playground and stay for a period of up to 3 hours. 8. The playground needs to cater to adult carers who will be driving children to the playground and offer access to a range of support facilities including off-street parking, public toilets and picnic facilities given the length of time that people are anticipated to spend in the recreational park. 9. At a minimum, 12 play activities are provided. The selected equipment must be sized to allow a minimum of 20 children to play at once on the playground. 10. Designed for inclusive play and be fully accessible to persons of all abilities. 11. The play equipment selected caters equally to all three age bands of children.
Regional	12. Iconic in nature to attract visitors from across the Mackay region to use the playground. Regional playgrounds should offer a unique play experience. The design of the play space considers its use as a regional tourist attraction. 13. Equivalent in terms of size and overall performance to a district playground.

3.6.4 Playground design requirements

The following performance requirements are applied to the design and construction of playgrounds regardless of their hierarchical type (local, district or regional).

Design element	Requirement
Siting	1. A playground is: (a) visible from: i. The park's primary street frontage to assist the public to find and access the playground while also promoting casual surveillance of the play space; and ii. a shaded seating area located to enable adults to supervise children while at play. (b) located a minimum of 20 metres from a public road, dedicated off-street parking area, permanent body of water or natural water course. Where it is necessary to position a playground within 20 metres distance of these features, the playground must be fully enclosed with childproof playground safety fencing. (c) positioned and/or constructed to ensure immunity against 1% Annual Exceedance Probability (AEP) flood events and to prevent impact by overland stormwater flows during periods of high seasonal rainfall. (d) accessible from a constructed path from the park's primary street frontage. (e) co-located with direct access to an open recreational space as required in all parks in accordance with Planning scheme policy – open space. 2. Playgrounds are not constructed over or beneath utility services including water, sewer or electrical. Where specialist water play is proposed, an isolated and purposely-located water and drainage connection must be provided. Where deemed appropriate to light a roofed shade structure over a playground, the siting of the electrical connection will be controlled and marked to reduce the risk of accidental disturbance during maintenance activities. 3. Water disposal for equipment supporting water play is via sewer connection. The use of soakage pits or trenches are not acceptable methods for water disposal for water play installations. 4. Playgrounds are landscaped to avoid mass plantings obstructing views and casual surveillance of the play equipment from public roadways and shade structures or pathways near to the playground for safety and to discourage anti-social behaviours (vandalism and/or tagging); and to avoid attracting snakes and vermin.
Co-location with public toilets	5. Playgrounds in a district or regional park are co-located with public toilets but must be sited with a minimum 10 metres separation distance to these amenities.

Design element	Requirement
	6. Orientated so that entries to the public toilets are visible from the playground and any picnic or seating provided within the play space to ensure children are observed by parents and/or adult carers when using the public toilets.
Play value	7. Play equipment must: (a) have a distinctive and co-ordinated appearance; and (b) offer an element of play that is different to other public playgrounds in the immediate vicinity. 8. Offers a variety of play activities catering to the widest possible age range of children (ages 0 to 14 years). Youth centric infrastructure such as courts and other informal sports facilities can be used to cater to the play needs of older children as an alternative to using play equipment. 9. A playground must have a minimum of 3 types of play activity. Collectively across all outdoor playgrounds provided in the immediate area, the opportunity for each type of play must be provided.
Softfall Treatment – General	10. Rubber tiles, artificial turf or sand softfall are acceptable softfall treatments for playgrounds, with the most appropriate choice depending on the site's condition and context. Council prohibits the use of wet pour rubber softfall or organic materials in such as bark chip as a softfall treatment in playgrounds due to the inferior performance and lifespan of these types of surfaces in local climatic conditions. 11. Subsoil and surface drainage protecting softfall treatments must be inspected during construction by an accredited Playground Inspector prior to being backfilled and the softfall treatment applied. 12. All softfall areas in outdoor playgrounds must be constructed with an approved concrete edge to contain and protect the softfall treatment.
Rubber tile and artificial turf softfall	13. Rubber tiles and artificial turf must be laid on shock pads with the appropriate subgrade preparation. 14. The finished surface must be crowned with minimum grade falling towards the edges of the playground's softfall area to prevent water from ponding on the surface.
Sand softfall	15. Sand is certified for use as a softfall treatment in a playground in accordance with the relevant Australian Standards. 16. The finished surface is completely level to prevent sand migration and designed with adequate subsoil and surface drainage to protect and maintain the quality of the softfall treatment. 17. Sub-soil drainage to sand softfall must be installed into the ground below the required depth (or bottom) of softfall sand and the certified sand used to backfill sub-soil trenches. Excavated spoil cannot be used as backfill to sub-soil drainage trenches within the softfall area.
Shade and potable water	18. Shade is compliant with the requirements outlined in Council's Shade for Playgrounds Policy 070. 19. Provide at least one shaded seating area nearby and from which an adult carer or parent can sit and observe children at play in all parts of the playground and immediate play space. 20. Where additional shade trees are planted to supplement or offer natural shade within the play space, plants are supplied as 45 litre

Design element	Requirement
	size stock or greater. Addition protection such as temporary guards or fencing is recommended to protect trees until established. 21. Install a water bubbler / drinking fountain with maintenance tap close to the playground. The water bubbler / drinking fountain are located to ensure adequate drainage to avoid any impacts on the softfall treatment and slip hazards.
Materials and construction	22. Play equipment is constructed using stainless steel, aluminium, fibreglass, high-density polyethylene (HDPE) or composite fibre components. The use of hot dipped galvanised steel (painted or powder-coasted) will only be considered where the play equipment is located inland and more than 1.5 kilometres from the coastline. Play equipment with either timber or powder-coated black steel components will not be accepted. 23. All bolts, screws and pins used to assemble play equipment is 316 stainless steel and anti-vandal type hardware. 24. Roofed shade structures are constructed using non-corrosive materials. All structural components are hot dipped galvanised, aluminium, stainless steel or timber. Where timber is used, all fixing hardware must to 316 stainless steel. Timber should be hardwood. 25. Structures are designed with protrusions or bracing elements greater than 3 metres in height from ground level to avoid opportunities for unintended access. Clearance of not less than 2.5 metres between the top of all play equipment and all parts of the shade structure is provided to prevent unintended access. 26. Stormwater discharge from roofed shade structures is directed away from softfall areas and to avoid washout or scouring of the ground immediately adjacent to softfall edging. Guttering with downpipes discharging roof water to outside the softfall area must be installed in locations the softfall treatment extends beyond the roofline. 27. Heavy gauge aluminium fencing with heavy-duty child proof gates are used to enclose playgrounds. Individual fencing panels must not exceed 2.4 metres in length for added strength. Wherever possible, the fence's alignment should be coordinated with the playground's softfall edging treatment to protect the fence from damaged by mowers. Playground fencing, gates and softfall edging is to be constructed in accordance with Council's Standard Drawings and Specifications and List of Furniture and Materials.
Compliance	28. All play equipment supplied is certified by the manufacturer to comply with AS4685 and fitted with permanent compliance plates. Compliance plates. 29. The installation of the play equipment is certified for compliance to AS4685. In accordance with Queensland's Building Regulation 2006, all play equipment over 3m in height requires a Form 15 and Form 16 to be submitted as part of the playground's compliance certification record. 30. Compliance inspections of all play equipment and softfall treatments as required by Workplace Health and Safety Legislation are arranged by and undertaken at the cost of the developer during the On-maintenance Period. Compliance inspections are to be undertaken and documented by a suitably qualified playground inspector.

Design element	Requirement
	31. All certification and compliance records required for a playground's construction and installation, are issued prior to Council accepting the playground On-Maintenance. 32. Records for compliance inspections required during the on-maintenance period must be issued prior to the playground being inspected for acceptance Off-Maintenance. 33. Playground fencing must comply with safety requirements for playgrounds outlined in AS4685. Fencing with loop tops or spacing between vertical bares exceeding 89mm is not acceptable. 34. All outdoor playgrounds in recreational parks are installed with approved standard safety and regulatory signage in accordance with Council's List of Furniture and Materials.

4 REQUIREMENTS FOR THE DESIGN OF LANDSCAPED BUFFERS

4.1 Introduction

A landscaped buffer is created as part of a site's landscaping works to ameliorate the impact of development by offering physical separation, visual screening and/or acoustic attenuation to adjacent land uses. To be effective in affording these benefits, the buffer must be continuous. The proposed benefits will also only be experienced along the length of the buffer on either side.

Landscaping associated with a landscaped buffer may include 'hard-scape' or constructed elements such as pavements, maintenance or garden edging, fences, walls and mounding as well as 'soft-scape' elements or planting. Works associated with the installation of irrigation to sustain planting is to be included. Furniture and other fixtures including signage may be incorporated into the landscaping treatments for large-scale and very wide buffers where people can safely use the area, however in general, landscaped buffers are not designed as people spaces due to safety, privacy and security concerns.

There are two types of landscaped buffers required under this planning scheme policy:

1. Landscaped buffers for screening purposes; and
2. Landscaped buffers for development benefitting from public exposure.

Landscape buffers for screening purposes are the most common type of buffer. These buffers are used to provide visual and/or acoustic attenuation to separate sensitive land uses, industrial development and other forms of development that benefit from or require visual screening.

Landscaped buffers for development benefitting from public exposure apply to commercial development and other forms of development which benefit from public exposure to shopfronts, showroom displays and the like. These landscape buffers are designed to offer views of the development from public road frontages for a limited distance along the development public road frontage. The height of understory planting in the selective area can be reduced to offer views into the development provided the landscaping treatment continues to afford physical separation along the development's boundary and tree planting is incorporated into the design to offer shade and visual amelioration. All service areas and parts of the development to which public access is restricted are provided with landscape buffers for screening purposes.

4.2 Design objectives and principles

The following objectives and principles apply to the design of landscape buffers.

Objective 1: Functionality

Landscape buffers are designed to achieve physical separation as well as visual screening and/or noise attenuation to ameliorate the impacts of development.

This objective can be achieved through the following design principles:

- Landscape buffers must be continuous or without interruption when viewed in elevation along their length. Where a break in the landscape treatments is required for access, the buffer treatment must either be widened or treated in such a way as to offer an over-lap allowing the functional performance of the buffer in terms of visual screening or sound attenuation to be maintained.
- Landscape buffers should be the minimum width necessary to achieve the required height of landscaping treatments to screen views and when required, attenuate noise impacts or to maintain physical separation.

- Visual screening can be achieved through a combination of hard and soft-scape elements. Where the landscaped buffer separates private property and a road reserve or recreational park, planting must be located so it is visible from the public open space (i.e. road or recreational park).
- Noise attenuation or screening is achieved by deflecting or absorbing sound waves using earth mounding or other barrier structure like acoustic fencing or solid wall. These two methods can be used separately or in combination with each other and with planting to soften the visual appearance of the built elements.

Objective 2: Safety

Landscape buffers are designed to promote community safety and discourage antisocial behaviour including vandalism.

This objective can be achieved through the following design principles:

- Crime Prevention through Environmental Design (CPTED) principles are used in the design of landscaping buffers to promote personal safety and discourage anti-social behaviour and vandalism.
- Landscaped buffers are designed to ensure the security of adjacent land uses and safety of those occupying or who are the end users of these areas.

Objective 3: Amenity Value

- Landscape buffers should be sympathetic to the character of the development's other landscaping works and surrounding context.
- Hard and soft-scape components should be selected and/or designed to work together to offer a visually cohesive, consistent and discernible character to the landscape buffer.
- Landscape buffers must contribute positively to the amenity and character of the streetscape setting where interfacing a public road.

Objective 4: Low Maintenance

Landscaped buffers are designed to minimise ongoing maintenance costs.

This objective can be achieved through the following design principles:

- Landscaped buffers are designed to minimise maintenance costs through the use of appropriate materials, plant species selection and using the most effective development option based on the lifecycle cost of infrastructure.
- Whilst lifecycle cost is a factor, landscaping treatments must be designed and constructed to be fit-for-purpose given the context.

4.3 Design requirements for landscaped buffers

The design of landscaped buffers intended to provide visual screening and/or acoustic attenuation:

(a) responds to individual site conditions;

(b) considers and ensures compliance with the requirements determined by the adjacent land uses separated by the buffer; and

(c) must achieve the planning and design objectives set for landscaped buffers.

For most development, the inclusion of a landscaped buffer will be an integral part of the site's overall landscape design and be constructed as part of the development's landscaping works. Council's Guidance Document for Landscape Documentation prescribes the format and content of documents required for development involving landscaping works.

A Landscaping Plan must be submitted for approval with an Operational Works application detailing the design and construction of a landscaped buffer. Where the landscape buffer is to be transferred to Council, the Landscape Plan will need to be accompanied by an Open Space Maintenance Plan (OSMP) for this component of the landscaping works.

Landscape plans including a landscaped buffer are to be prepared by or under the supervision of a Registered Landscape Architect (AILA) unless otherwise agreed by Council (exceptions may be made for certain small-scale works where not located on Council owned land). Prior to lodgement to Council for assessment, unless otherwise agreed by Council, the landscaping plans must be reviewed and certified by a Registered Professional Engineer of Queensland (RPEQ) to ensure that landscaping treatments will not impact the operation or ongoing maintenance of any civil works component of an adjacent land use. This includes certifying that landscaping treatments will not:

(a) reduce design capacities of the designed drainage system;
(b) impinge on intersection and property access sight distances or vehicle operator safety within roadway clear zones;
(c) impact street lighting standards for either vehicular or pedestrian traffic; and
(d) impede future maintenance operations.

When the landscaped buffer is to be transferred to Council, on completion of both hard-scape and soft-scape components, this component of the development's landscaping works will be subject to inspection by Council prior to being accepted 'on-maintenance'. Once accepted on-maintenance, the landscaped buffer must be maintained by the developer for 12 months. After the 12 month maintenance period, the landscaped buffer must pass an 'off-maintenance' inspection before being handed to Council.

Responsibility for the establishment of softscape components and the rectification of all defects during the on-maintenance period resides with the Developer. Council inspectors will conduct regular inspections throughout the maintenance period to ensure adequate establishment and maintenance is undertaken.

When plants or areas of grass cover need to be replaced due to defect or failure during the maintenance period, these components will only be accepted off-maintenance where it can be demonstrated by the developer that planting and grass have been established in situ for a minimum of 12 weeks. Trees, plants and areas of grass must be established post-planting for a minimum 12 weeks to ensure that they are well established. Defects should be corrected as soon as they are identified.

4.4 Achieving effective visual screening with planting

The height of screening vegetation incorporated as part of the design for a landscaped buffer is controlled by width of the area available for planting. The following is a guide to the height of planting anticipated to be achieved based on the width of available planting area.

Planting Width	Structural Planting (trees)	Distinct layering of understorey planting
2 metres	NA	Single layer: • Screen planting of shrubs up to 1.5m in height.
5 metres	Canopy Height - 8 metres	Minimum 2 layers: • Screen planting up to 2.5 metres in height • Lower level massed understorey planting which has the space to increase in height and diameter to 1 metre.

Planting Width	Structural Planting (trees)	Distinct layering of understorey planting
10 metres	Canopy Height – greater than 8 metres.	Minimum 2 layers and up to 4 layers • Screen planting up to 2.5 metres with potential for secondary tree layer up to 4 metre.

4.5 Requirements for landscaped buffers for screening purposes

The following requirements apply to the design and construction of landscaped buffers for screening purposes.

Design element	Requirement
Landscape interface and screening to a public road	1. Prevent vehicles from accessing the landscape buffer from the pubic road using prevention devices such as mounding, kerbing, raised garden edging, bollards or other type of appropriate fencing. 2. Planting must be visible from the public road.
Service Infrastructure	3. Avoid positioning service infrastructure, except for irrigation, within or which sits above a landscaped buffer. Where this is unavoidable, measures must be taken to ensure the function of the buffer in terms of visual screening and acoustic attenuation is not compromised. 4. Drainage swales while not desirable, can be incorporated as part of the landscaped buffer provided the minimum width necessary to achieve the required height of screening by planting is provided and access for maintenance of the swale is provided from within the development site where the buffer will continue to be managed by the property owner.
Hard-scape components	5. Where mounding is used to increase the height of planting or for acoustic attenuation, the gradient must not be steeper than 1 in 3 to ensure that loose mulch can be retained on the sloped surface of the mound. 6. Mounding where incorporated does not impact overland flows causing flooding. 7. Planting must be contained within formed garden beds constructed with a minimum 300mm topsoil depth with 100mm depth mulch cover. 8. Planting areas should be irrigated. 9. Access for regular maintenance of the landscaped buffer must be provided from within the development site where the buffer will continue to be managed by the property owner.
Soft-scape (Planting)	10. Plants selected must have a form and growth habit appropriate to function as a visual screen. 11. Grass unless used in association with mounding or other screening element such as fencing, is not typically a planting treatment commonly use in landscaped buffers. Where grass is use either as the sole planted treatment or in conjunction with other planting, the grassed component of the buffer must be able to be mown. Mounding must not exceed a 1 in 5 slope.

Design element	Requirement
Soft-scape (Planting)	12. Plants should be selected and arranged to work together to offer a visually cohesive, consistent and discernible character to the landscaped buffer. 13. Density and layering of the planting must reflect and reinforce the use of plants as a visual screening element. 14. Recommend plants be selected from Council's List of Plant Species. The use of alternative species will be assessed on merit given the development site's conditions and context.

4.6 Requirements for landscaped buffers for development benefiting from public exposure

There are different design requirements for a landscaped buffer where it is determined that the development benefits from public exposure. In these circumstances, the design of the landscape buffer treatment can allow views to parts of the development (building and its surrounds including carparking areas) intended to be accessed by the public and to parts of the building's architecture that have an attractive appearance. All service areas and parts of the development to which public access is restricted are provided with landscape buffers for screening purposes.

The following requirements apply to the design and construction of landscaped buffers for development benefiting from public exposure allowing views into the development. These requirements apply only to sections permitting views to parts of the development intended to be seen by and/or accessed by the public.

Design element	Requirement
Landscape interface and screening to a public road	1. Prevent vehicles from accessing the landscape buffer from the pubic road using prevention devices such as mounding, kerbing, raised garden edging, bollards or other type of appropriate fencing. 2. Planting must be visible from the public road.
Service Infrastructure	3. Avoid positioning service infrastructure, except for irrigation, within or which sits above a landscaping treatment. Where this is unavoidable, measures must be taken to ensure the function of the landscaping treatment in terms of visual presentation is not compromised. 4. Drainage swales while not desirable, can be incorporated as part of the landscaping treatment provided the minimum width necessary to achieve the required physical separation to the public road frontage and to allow for tree planting to be installed is provided. Access for maintenance of the swale must be provided from within the development site.
Hard-scape components	5. Planting must be contained within formed garden beds constructed with a minimum 300mm topsoil depth with 100mm depth mulch cover. 6. Planting areas must be irrigated. 7. Access for regular maintenance must be provided from within the development site where the landscaping treatments will continue to be managed by the property owner.
Soft-scape (Planting)	8. Plants selected for use of the modified section must complement the design of other parts of the landscaped buffer.

Design element	Requirement
	9. Trees must be incorporated into the design of the modified section of the landscaped buffer. The tree selection can be used to attract attention through its structural form, foliage or flowering displays (i.e. signature planting). 10. Recommend plants be selected from Council's List of Plant Species. The use of alternative species will be assessed on merit given the development site's conditions and context.

4.7 Requirements where landscaped buffer is to be transferred to Council

In addition to the above requirements, where a landscaped buffer is to be transferred to Council, the following will also apply.

The design and construction of all hard-scape and soft-scape components must be in accordance with Council's Standard Drawings, Specifications and the List of Furniture and Materials. Plants must also be selected from Council's List of Plant Species. Council will not accept the use of powder-coated black steel components on any part of built elements or the use of extruded concrete garden edging used as part of the design for a landscaped buffer transferred to Council.

Design element	Requirement
Interface with private property	1. The landscape buffer is off-set not less an 1m from the adjoining fenced property boundary. 2. Where fencing is essential to the design of the landscaped buffer, and the creation of the adjoining allotments forms part of the development, the fencing element can function as a boundary fence provided a minimum 1m maintenance access to planting is incorporated into the design of the landscaped buffer and the fence is located on the shared property boundary. 3. Areas between garden beds and boundary fencing must be free draining. Where timber fencing is used, finish palings 10mm above finished ground level to prevent rotting. 4. Trees are setback to prevent canopies overhanging the fence line when mature.
Hard-scape components	5. Concrete edging to formed planting beds must be reinforced. Council will not accept the use of extruded concrete edging due its history of poor performance. 6. Planting areas must be irrigated and designed to be automatically controlled using an IRRInet system to Council's specifications. 7. Access for maintenance of the landscaped buffer should be provided from a public road. The point of access should be fitted with a lockage gate.
Soft-scape (Planting)	8. Plants must be selected from Council's List of Plant Species.

Design element	Requirement
	9. Plants must be in good health, free of structural defects, pests and diseases and in properly formed and mulched garden bed which is free of weeds before being accepted on-maintenance.

5 STOCKPILING OF SOIL & OTHER LANDSCAPING MATERIALS

Stockpiling of materials is undertaken in a manner that minimises environmental impacts to existing trees where a change in ground level (fill) within or immediately adjacent to the dripline of canopies can threaten tree health. Stockpiles, regardless of the type of material, must be located and appropriately treated to prevent wind and water erosion and/or weed infestation. Temporary erosion and sediment controls are to be installed as required to contain the stockpiled material. Areas used for stockpiling must be de-compacted and remediated immediately after being used for this purpose.

Stockpiling of topsoil for re-use on site is encouraged. The following requirements relate to maintaining the viability of topsoil when stockpiled on a project site for re-use:

(a) Locate stockpiles 5 metres or more from concentrated water flows including drainage lines and roadways.
(b) Protect the stockpiles from waste and rubbish dumping and encroachment of works.
(c) Land selected as a storage site should have less than 10% slope.
(d) Protect the up-slope of the stockpile site using diversion drawings.
(e) Protect the down-slope sediment loss using sediment control structures like silt fencing or other approved methods.
(f) Stockpiles should be no higher than 2 metres and may be flat topped.
(g) Label stockpiles with origin and date.
(h) If stockpiles are to be in place longer than 3 months, sow with a seasonally appropriate annual cover crop.

6 MANAGING IMPACTS DURING CONSTRUCTION

Landscaping works are to be carried out in a safe manner that minimises adverse impacts to the natural environment caused by erosion, saltation, incineration of cleared vegetation, and rubbish. Works must employ measures to reduce the impacts of noise and dust generation, saltation, re-direction of stormwater runoff and any other amenity impacts / inconvenience to residents and other sensitive premises.

Measures to be adopted include:

(a) The landscape works must, where appropriate, incorporate temporary stormwater runoff, erosion and sediment controls and trash traps.
(b) Stormwater runoff, erosion, and sediment controls are to be constructed prior to commencement of any clearing works.
(c) During construction, dust suppression measures (such as watering of the site) are implemented to protect nearby sensitive premises.
(d) Temporary construction works do not pond or concentrate stormwater runoff in adjoining properties.
(e) Temporary construction works do not create nuisance or annoyance on adjoining premises by altering stormwater runoff patterns within the development site.
(f) Construction traffic to and from the development site uses the highest classification streets and roads where a choice of access routes is available.
(g) All materials associated with the landscape works that are dropped, deposited or spilled on public roadways or within active areas of a recreational park beyond the controlled area of the construction site, must be removed and appropriately disposed of. Public roads are cleaned as soon as practicable after an incident. Any damaged areas repaired and reinstated to the original condition.

(h) Where works are carried out on existing roads, a traffic control plan is prepared in accordance with the Manual of Uniform Traffic Control Devices and maintained during the works. During the implementation of this plan, all traffic control signage and other control devises are to properly erected, maintained and removed on completion of the works.

Appendix A - Mackay City Centre Planting Strategy (revised)

RELATIONSHIP WITH KEY DOCUMENTS

This document is to be read in conjunction with **Mackay city centre local plan code.**

The purpose of the Planting Strategy is to establish a framework for coordinated and cohesive pallet of street trees and understory planting within Mackay city centre local plan area.

Reference should also be made to Council documents:

1) PSP - Landscape
2) List of Plant Species

The Mackay Waterfront PDA is excluded from this document. Reference should be made to the Mackay Waterfront Priority Development Area Development Scheme. The Development Scheme may refer to this document for guidance.

NOTE: Gordon Street and Sydney Street are controlled by DTMR

LEGEND

- Mackay City Centre Local Plan Area
- Mackay Waterfront PDA
- Mackay Civic Centre Precinct Area

STREET TREE PLANTING

VERGE / FOOTPATH LOCATIONS

- *Lagerstroemia speciosa (mauve)*
- *Libidibia ferrea*
- *Buckinghamia celsissima*
- *Mimusops elengi*
- *Flindersia australis*
- *Cupaniopsis anacardioides*

CENTRAL MEDIAN / ISLAND LOCATIONS

- *Ficus hilli*
- *Tabebuia pallida*
- *Tabebuia argentea*
- *Roystonea regia, Livistonia dicipens*

ROUNDABOUT LOCATIONS

- *Pandanus sp.*
- *Ficus hillii*
- *Brachychiton discolor*
- *Plumeria obtusa*

Cupaniopsis anacardioides
Tuckaroo

Flindersia australis
Crows Ash

Mimusops elengi
Spanish Cherry

Buckinghamia celsissima
Ivory Curl

Libidibia ferrea
Leopard Tree

Lagerstroemia speciosa
Queen's Crepe Myrtle

Ficus hillii
Small Leaf Weeping Fig

Pendanus sp.
Screwpine

Brachychiton discolor
Queensland Lacebark

Tabebuia pallida
Pink Trumpet Tree

Tabebuia argentea
Silver Trumpet Tree

Palm trees

Plumeria obtusa
Evergreen Frangipani

Mackay REGIONAL COUNCIL

MACKAY CITY CENTRE LOCAL PLAN AREA

PLANTING STRATEGY

STREET TREE PLANTING

DATE : AUGUST 2020
REVISION : B
PAGE 1 OF 2

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