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1 Introduction

These Guidelines have been produced by the Town of Port Hedland, herein referred to as the Town, to provide direction for the design, construction and maintenance of landscape infrastructure in Port Hedland and South Hedland. As development in Hedland continues to evolve it is important that a robust set of guidelines specifies a clear framework to be utilised by internal Council practices as well as designers, developers and residents responsible for creating and maintaining landscapes within the public and private domain.

For the purposes of these Guidelines public open space, herein referred to as POS, and includes parks and civic spaces and urban landscape areas including verges, medians, road reserves, drainage reserves, public access ways and streetscapes. These Guidelines will cover the following subjects in regard to development of landscape infrastructure:

- Development Process and Requirements
- Preparatory Site Works
- Hard Elements
- Soft Elements
- Irrigation
- Maintenance and Handover

This document comprises two sections:

1. **Section A** specifies Landscape Guidelines for residential, commercial and industrial verges where maintenance is the responsibility of the owner or tenant.
2. **Section B** specifies Landscape Guidelines for POS developments and urban landscape areas on land ultimately managed by the Town.

Supporting Appendices for this document include:

1. Town of Port Hedland Verge Treatment Application Form
2. Standard Detail Drawings
3. Preapproved Items
4. Town of Port Hedland Preferred Planting Guide
5. Town of Port Hedland Asset Handover and Checklist

2 Policies and Strategies

The following list identifies the Town Strategies and Plans that most affect the development of POS within the Town and should be referred to in conjunction with these Guidelines:

- 201706 Town of Port Hedland Policy Manual
- Town Planning Scheme No.5 (TPS5) and Amendments, including the South Hedland Town Centre Development Plan (SHTCDP) which is incorporated into TPS5 pursuant to Clause 5.2.1(a)
- Town of Port Hedland Disability Access and Inclusion Plan
- Town of Port Hedland General Provisions Local Law
- Town of Port Hedland Reserves and Foreshores Local Law
- Town of Port Hedland Play Area Renewal Strategy
- Town of Port Hedland Standard Irrigation System Specification 2014
- Town of Port Hedland Irrigation Water Network Plan
- Town of Port Hedland Recycled Water Quality Management Plan
- Town of Port Hedland Public Open Space Strategy
- Town of Port Hedland Preferred Planting Guide
- Town of Port Hedland Street Tree Management Plan
Town of Port Hedland Engineering Guidelines

Town of Port Hedland Design Guidelines for Specific Precincts (e.g., Kingsford-Smith Business Park and South Hedland Town Centre)

In addition to the relevant Statutory Guidelines, Council Policies and Plans, the Guidelines reference a range of existing supporting information including:


3 Scope of Guidelines

These Guidelines are intended for use for the following:

- Communicate expectations and uniform standards for the design, construction and maintenance of landscape infrastructure within the Town to be utilised by internal the Town staff, design consultants, developers, statutory bodies /authorities, community groups and residents.
- Will be referred to by the Town for the application and approval process to develop or redevelop verges by residents or developers.
- Will lay the foundations for the preparation of a greening strategy for the Town and facilitate participation in the 202020 Vision plan.

4 Objective of Guidelines

These Guidelines provide standards and requirements for the implementation of landscape infrastructure with the key objectives to:

- Provide a framework for consistency and clarity within the Town approval process.
- Promote sustainable practices that encourage the preservation of local vegetation and landscape features.
• Encourage and support the development of aesthetically pleasing and sustainable landscape infrastructure that enhances the unique elements of the Town whilst maintaining a level of consistency.
• Provide safe and functional POS for the needs of the community.
• Encourage the use of plant species that will endure the Pilbara environment whilst providing an element of shade and sustenance.
• Ensure the development of infrastructure that regards future maintenance and access requirements.
• Encourage a landscaping form which is economical in its water and maintenance requirements.
• Provide a means for minimising soil erosion.
• Establish a safe landscaping environment by applying Crime Prevention Through Environmental (CPTED) principles.
• Ensure equitable access and inclusion for people with disabilities by applying principles included in the Town’s Disability Access and Inclusion Plan (DAIP).
• Encourage the use of local materials that will withstand the Pilbara environment and contribute to sense of place.

5 Design Principles

The following set of design principles underpins the content of these Guidelines:

5.1 Planning Parameters

The provision of the type and character of POS is dependent upon the consideration of current and future needs of the community, local issues, economic climate and environmental parameters. New developments and Capital Works Renewals will be individually assessed by an accessibility consultant.

The development of new subdivisions may entail a cash in lieu component for POS development. Refer to Town of Port Hedland Public Open Space Strategy.

5.2 Sustainability

Sustainable methodologies and best practise are to underpin all aspects of the design, implementation and management of POS. This includes climate, soil and water responsive design considerations that address the specific nature of the Pilbara environment. As well as this the Town is committed to preserving existing significant trees and remnant vegetation.

5.3 Financial Responsibility

The Town must be accountable for the expenditure of public funds and assets and it is essential that the provision of POS is substantiated in terms of the efficient use of resources These Guidelines outline a responsible approach to the cost of provision and ongoing maintenance of landscape infrastructure.

5.4 Local Character
POS within the Town should reflect a sense of the unique local character of the Pilbara. Use of local plants, materials and finishes that speak of the place and can withstand the harsh environmental conditions and the use of local resources should be a factor in implementation of landscape infrastructure.

5.5 Community Safety

Priority of the Town is the provision of POS that the community can enjoy safely. Principles of Crime Prevention Through Environmental Design (CPTED) should be incorporated into POS design and implementation to assist in reducing crime and improve feelings of safety.

5.6 Access and Equity

The Town is committed to ensuring that the community is an accessible one for people with disabilities, their families and carers. Along with 8/003 ACCESS POLICY and the Town’s Disability and Inclusion Plan these Guidelines will address particular issues in regard to POS standards to address access for all.

5.7 Cultural Heritage

Hedland has a rich multi-cultural heritage and there is an opportunity for landscape infrastructure to interpret and celebrate this heritage through design responses from plant species and material selection to public art installation.

5.8 Civic Pride

A sense of civic pride and community ownership is to be encouraged via various collaboration initiatives in the design, development and maintenance of POS. By encouraging local ownership through various initiatives, incidence of vandalism can be reduced and more socially sustainable spaces created.

5.9 Longevity

POS design and Implementation must address and account for the cost and requirements of ongoing maintenance to ensure the delivery of a long term viable asset for the Hedland community. This includes the appropriateness of materials and products that should be proven performers in the Pilbara.
SECTION A – LANDSCAPE GUIDELINES FOR RESIDENTIAL, COMMERCIAL AND INDUSTRIAL VERGES

6 Introduction

The objective of this section of the Guidelines is to ensure that verges are considered a landscape asset to the town and they are designed and maintained to a high level. Verge areas are to be developed to a safe and sustainable standard with the aim of minimising ongoing maintenance. This section outlines permissible verge treatments and standards.

The following definitions pertain to this section:

- **Road Reserve**: The portion of land between the front property boundaries that contains both verges and the road carriageway.
- **Verge**: The section of the road reserve between the property boundary and the road kerb line.
- **Verge Treatment**: Any soft or hard landscaping installed within the area of the verge excluding street trees.
- **Street Tree**: A tree installed within the road reserve.
- **Crossover**: The portion of a driveway within the verge providing access from the road to the property boundary.

7 Application Process for Verge Treatment

Developers and property owners must submit an application to the Town for approval of landscaping treatments prior to commencing any work. Applications may be submitted to the Town via one of the following processes:

1. Submission of a Verge Treatment Application Form. Refer Appendix 1
2. Submission of landscaping designs in accordance with a Development Application process

All applications must include a plan showing the layout and location of landscaping, irrigation and information on plant species.

Applications will be assessed in accordance with this Policy, relevant Local Laws and supporting documentation. Applicants will be advised of any known work scheduled by the Town that may impact on their application.

Applicants must not commence any landscaping works until approval is granted in writing by the Town.

The Town offers a design service to assist applicants with their submission. Fees are applicable and quoted for each project.
8 General Conditions

General conditions for the installation of verge treatments are as follows:

- In terms of verge treatments, the property owner agrees to maintain the area free from hazards. Failure to comply may result in removal of the hazard and/or treatment by the Town at the owner’s expense.
- In terms of verge treatments, the property owner agrees to indemnify the Town against all claims which may arise as a result of the treatment.
- The Town reserves the right to remove any verge treatment for the purpose of carrying out works. Reinstatement of approved verge treatments shall be carried out by the Town in consultation with the property owner.
- The owner accepts responsibility for removal and reinstatement of landscaping if required by public utility providers.
- No assistance shall be provided by the Town for development, ongoing operation, or maintenance costs, unless specified otherwise during the approval process.
- The property owner shall be responsible for repairs to any damaged infrastructure occurring during the installation of landscaping.

9 Irrigation

All applicable verge treatments must be irrigated through a connection to the property owners’ water supply. The following points should be considered when irrigating within the verge:

- Contact Dial Before You Dig (1100) and other service and utility providers prior to commencing installation to ensure that underground services and infrastructure are not damaged and correct clearances are maintained.
- The Town Standard Irrigation System Specification is available as a reference document for irrigation details.
- Design and operation must comply with Water Corporation guidelines and legislation and water restrictions current at the time of development.
- Irrigation design should apply principles to ensure sustainable use of water.
- Irrigation design and operation must not impact on road pavements, footpaths or other infrastructure on the verge.

Refer the Town of Port Hedland Irrigation System Specification for information on Irrigation standards and construction.

10 Hardscape Elements

For the purposes of these Guidelines, Hardscape elements within the verge refer to all:

- Hardstand
- Structures
- Compacted surfaces

10.1 Hardstand

The Town permits a part of the verge to be sealed with brick paving, concrete or asphalt to form a hardstand. The maximum area to be treated by sealing is 3.0 metres wide, measured from the back of
the kerb and running parallel to the kerb in the verge abutting the property, or alternatively an area of equal size. The hardstand area shall not compromise pedestrian access.

Refer to the relevant Local Laws and Engineering Guidelines for further information.

Refer Appendix 2 – STD Drawing Details 01, 02, 03, 08 & 09

10.2 Structures

For the purposes of these Guidelines, structures refer to vertical elements such as walls, letter boxes and seats, steps and crossovers in verges.

All structures are to conform to BCA Guidelines and Town approval.

10.2.1 Walls, Letterboxes and Other Structures

Walls, letter boxes, seats and other structures are to be installed within the boundary of the private property and are not permissible on the Town owned verges.

10.2.2 Steps

Location and design of steps will be individually assessed by the Town at the time of application.

10.2.3 Crossovers

Refer to the Town Policy 9/005 for information on the construction of crossovers.

10.3 Compacted Surfaces

Compacted material is an acceptable treatment on verges adjoining residential properties provided that the material is well graded, cement stabilised, water bound and compacted to a smooth finish. The depth of such material must be an absolute minimum of 100mm.

Gravel shall be fines with a maximum aggregate size of 7mm to 14mm maximum. Permissible materials by the Town include white quartz cracker dust and red scoria.

Refer Appendix 2 – STD Drawing Details 04 & 05

Refer Appendix 3 – Preapproved Items 01 & 02

11 Softscape Elements

For the purposes of these Guidelines, Softscape Elements refer to all:

- Verge planting areas and lawn areas
- Mulch areas

11.1 General Conditions for Planting in Verges

Planting permitted within the verge subject to the following:

- Planting shall generally be kept clear of the footpath to a distance of 1.2m, and shall not pose a hazard or impede on sight lines for vehicles
- An area behind the kerb shall remain clear of gardens and soft landscaping (excluding lawn) to ensure safe pedestrian access where no pathway exists. Due to inconsistent verge widths the size of this area needs to be inspected and approved by a Town Officer prior to planting.
Planting shall apply CPTED design principles.
Plant species shall comply with the Town's Preferred Planting Guide. Refer Appendix 4.
The garden must be irrigated through a connection to the property owners' water supply.
The Town encourages the planting of local species to enhance local character, however waterwise exotic species that require minimum maintenance shall be permitted.

Image 1. Verge Planting

11.2 Mulch
Mulching shall be undertaken to planted areas on verges. 150mm mulch cover shall be maintained to all planting areas. Mulch levels shall be maintained to 25mm below adjacent hard edges at all times. Do not mound mulch levels above adjacent surface levels.

The Town predominantly utilises and encourages pine bark mulch for all planting beds however compacted fines such as white quartz cracker dust, and rock mulches such as river shingles may be utilised with approval from the Town.
Refer Appendix 2 – STD Drawing Details 12 & 17

11.3 Turf
Turf species to be advised by the Town shall be either Winter Green (Cynodon dactylon) or Empire Zoysia (Zoysia japonica) and shall be supplied and laid as roll on turf.

Artificial turf is permissible but not encouraged by the Town.
11.3.1 Preparatory Work
Eradicate weeds prior to laying using environmentally acceptable methods, such as a non-residual herbicide at the recommended maximum rate. Remove any weed growth from an area 500mm diameter from around the base of trees and structures. Hand weep any rubbish and weed growth throughout grassed and planted areas.

Prepare lawn areas by spreading topsoil to a depth of 100mm. Apply TerraCottem Turf Soil Conditioner at a rate of 180grams per metre squared and incorporate thoroughly to a depth of 100mm with a rotary device, across the length and width of the area. The lawn shall be watered after planting and thereafter as necessary to produce a satisfactory cover.

The Town to approve any substitute soil conditioner.

Refer Appendix 2 – STD Drawing Detail 18

11.4 Shrubs and Groundcovers
The Town encourages the planting of local species to enhance local character; however water wise exotic species that require minimum maintenance shall be permitted. All plant species are to be approved by the Town.

Refer Appendix 4 – Town of Port Hedland Preferred Planting Guide

11.5 Street Trees
Street Trees provide an important amenity within the Town by the creation of attractive streetscapes, the provision of shade, contribution to local identity, improved micro climate and habitat

Street trees may be planted within the verge subject to the following:

- The location of trees must not impede on existing infrastructure, underground services, and pedestrian or vehicle safety;
- Plant species shall comply with the Town’s Street Tree Management Plan.
- Plant species and form shall comply with CPTED design principles;
- The tree must be irrigated through a connection to the property owners’ water supply;
- Where the street tree has been requested by the property owner, the owner is responsible for maintenance and watering of the tree.
- Contact Dial Before You Dig (1100) and other service and utility providers prior to commencing street tree installation to ensure that underground services and infrastructure are not damaged and correct clearances are maintained.
- No Tree or Shrub to be planted within 3m of any hardstand treatment, furniture or light pole.

11.5.1 Street Trees for Residential Verges
The Town will provide a free street tree/s to property owners upon application and subject to the above points. These trees will be subject to a 12 month consolidation period, whereby if the tree is removed, damaged or dies within this period the owner shall be responsible for replacement of the tree or reimbursement to the Town for costs. The distribution of free street trees is based on:

- A standard residential Lot - 1 tree
- A corner residential Lot - 1 tree for the short boundary, 2 trees for the long boundary
- Lot with boundary >70m - 3 trees
Trees within the Town owned or managed properties shall be routinely assessed for disease, hazards or damage and may be removed on approval of the Town’s officers.

Residents are not permitted to plant street trees.

Refer Street Tree Management Plan for information on Street Tree Species Selection

11.5.2 Street Trees for Commercial and Industrial Verges

Tree planting in road reserves controlled by MRWA will comply with MRWA standards.

Spacing of street trees will be based on assessment and approval of plan by the Town.

Refer Town Of Port Hedland Street Tree Management Plan for information on Street Tree Species Selection

11.5.3 Removal of Street Trees on Verges

The Town views street trees as an asset and does not support their removal. Developers can be held liable for reinstatement of street trees where removal has been undertaken without the Town’s approval.

11.6 Planting Procedure for Plant Stock and Trees

The Town recommends the following planting procedure be utilised:

1. Thoroughly water all plant-stock before planting. Ensure that roots of plant-stock are not exposed to drying influences such as sun or wind.

2. All plant-stock shall be set plumb and placed to ensure a normal relationship of the crown to the soil surface as per STD Drawing

3. Incorporate TerraCottem Universal Soil Conditioner (amounts to manufacturer’s instructions according to planting size) mixed thoroughly into backfill soil taken from planting hole. A portion of the mix is to be placed in the bottom of the hole.

4. Place plant-stock vertical in the centre of planting hole with care to avoid damage to roots.

5. Back-fill the planting hole with remaining excavated site soil amended with TerraCottem and water-in at the same time.

6. Form a raised bank of compacted soil around the base of each plant to contain watering as per

7. All street trees and large shrubs/trees as required shall be staked. Tree stakes approximately 50 - 70mm square or in diameter and set to 1.5 m height is recommended. Stakes are to be made from Jarrah only. Stakes are to be driven at least 400mm into the ground surface and vegetation main trunks tied with approved figure 8 expandable industry grade ties.

8. Protect newly-planted areas from pedestrian traffic by suitable methods until the plant-stock is well established. Protection may include three-strand wire fence on steel star pickets.

Refer Appendix 2 – STD Drawing Detail 19, 20 & 21

12 Maintenance

The property owner shall be responsible for maintenance of all landscaping on the verge, unless agreed otherwise during the approval process.

Developers of landscaping treatments on verges of the Town owned or managed properties shall be responsible for the maintenance of the landscaping for a period of 18 months, unless negotiated
otherwise. An Asset Management Plan shall be submitted to the Town for approval. Handover of maintenance to the Town after this period shall be conditional on coordinated inspections, approvals, training and supply of all as constructed and warranty information.

12.1 Lawn Maintenance

12.1.1 Insect and Disease Control
It will be the resident/developer’s responsibility for insect and disease control: The period of treatment shall be until the problem is solved.

12.1.2 Mowing and Trimming
Remove litter and branches before mowing. Mowing should be consistent with the growth habit of the grass variety and shall be maintained at a height of 25mm-40mm for Zoysia Empire and 15mm–25mm for Winter Green throughout the year.
Mowing should be on a weekly basis during periods of high growth and at three week intervals at other times. Do not mow under wet conditions.
Edges adjoining plant beds, pathways, base of trees and other obstacles shall be trimmed to coincide with mowing.
Care should be taken not to damage trees or shrubs.

12.1.3 Top Dressing
All wheel tracks and any other sunken areas are to be top dressed to bring them up to level with surrounding areas.

12.1.4 Fertilising
Fertilising shall be applied to correct any nutrient deficiencies.

12.1.5 Irrigation
Shall be programmed to suitably meet the needs of the turf and weather conditions and shall comply with Water Corporation guidelines as to programming.
All costs incurred resulting from fines for breaches of the Guidelines to be the responsibility of the resident/developer.
Refer Town of Port Hedland Irrigation Water Network Plan

12.2 Maintenance of Verge Planting
Verges should be maintained in a neat and tidy manner at all times. Dead plants should be removed and replaced.
Plant growth that encroaches on paths, crossovers and roads is to be pruned back so as not to obstruct public access and vehicle visibility.

12.2.1 Irrigation
Shall be programmed to suitably meet the needs of the plant species and weather conditions and shall comply with Water Corporation guidelines as to programming.
All costs incurred resulting from fines for breaches of the Guidelines to be the responsibility of the resident/developer.
Refer Town of Port Hedland Irrigation Water Network Plan
12.3 Maintenance of Street Trees

Maintenance of street trees on residential verges is the responsibility of the Town.

Developers of landscaping treatments on verges of the Town owned or managed properties shall be responsible for the maintenance of the Street Trees on verges for a period of 18 months, unless negotiated otherwise.

12.3.1 Stakes & ties scheduling

Stakes and ties are to be replaced or repaired as required. Lower ties are to be removed after 12 months and all ties and stakes are to be removed after 18 months or on trees that have a crown height greater than 4m and a trunk diameter in excess of 90mm (measured at the base) whichever occurs first.

12.3.2 Pruning

Vegetation pruning following initial site planting is to be carried out by the Town on an as required to maintain and promote vigorous healthy growth. Trees shall remain free of dead or damaged branches, broken branches shall be pruned in a manner so to prevent further damage to the tree and minimise the risk of injury to the public. Pruning is to encourage plant health and individual species form.

12.3.3 Mulching

150mm mulch cover to all street trees shall be maintained at all times. All mulch areas shall remain weed free.
SECTION B – LANDSCAPE GUIDELINES FOR PUBLIC OPEN SPACE, DEVELOPMENTS AND STREETSCAPES

13 Introduction

The objective of this section of the Guidelines is to ensure that POS is considered a landscape asset and is designed, constructed and maintained to a consistent, appropriate and high level. For the purposes of this section public open space, includes parks and civic spaces and urban landscape areas including verges, medians, road reserves, drainage reserves, public access ways and streetscapes.

The Town encourages the design of site responsive urban parkland, delivered through appropriate structure and sustainable design. Good visual amenity through the adoption of CPTED Guidelines is also required to minimise the potential of vandalism and the creation of safe spaces. Passive supervision of the parklands by residents is of high importance especially where children’s play equipment is located. The Town requires the POS be designed and constructed to minimise future maintenance costs. The Town is committed to preserving existing significant trees and remnant vegetation. All construction and products supplied to meet the Town specifications and or requirements.

Whilst this section outlines the preferred criteria of the Town for POS, it is expected that variations in design will occur where designs relate to a particular theme, narrative or landscape characteristic. These designs however, shall still adhere to the Design Principles set out in these Guidelines.

14 Public Open Space Framework

The hierarchy for Public Open Space in Port Hedland is adopted from the Department of Sport and Recreation Classification for Public Open Space 2012. The hierarchy is divided into four categories that reflect the different roles, both form, function and accessibility served by POS within the context of Port Hedland. The hierarchy consists of:

1. Local Open Space
2. Neighbourhood Open Space
3. District Open Space
4. Regional Open Space

The hierarchy also determines a standard of provision of infrastructure for each of the categories. These are general standards only and variations will occur due to the specifics of a POS including level of use, location and contextual setting.

For further detailed information on hierarchy and level of service refer to The Port Hedland Public Open Space Strategy.

15 POS Development Process and Requirements

15.1 Professional Assistance

To assist in processing a submission for development of POS when it is required, it is recommended that a Landscape Architect or other professional with horticultural / urban design expertise be engaged to provide drawings.
15.2 Development Process

The following chart summarises the process for the development of POS within the Town:

1. **Submit POS and Landscape Master Plan to the Town for Principle Approval**
2. **Written Approval issued by the Town**
3. **Submit Landscape Master Plan including Irrigation and Relevant Management Plans with submission of Civil Design Drawings**
   - Refer 17.3.1 to 17.3.3 of this Document for Landscape Master Plan and Management Plan Requirements
4. **Written Approval issued by the Town**
5. **At Completion of Construction Works, Developer/Contractor to arrange a Practical Completion Inspection to identify any defects or omissions**
   - Defects / Omissions to be Rectified and Re-inspected if required by the Town
6. **Upon Written Approval of Practical Completion by the Town, Developer/Contractor to lodge payment of Landscape Maintenance Bond**
   - Refer 17.4 of this Document for Landscape Maintenance Bond
7. **Upon Practical Completion, Developer/Contractor to maintain all aspects of the POS for a 2 year (24 month) period**
   - Specifications outlined in Approved Plans at Practical Completion must be maintained in this period until Handover to the Town
8. **Three Months prior to Handover Date, Developer/Contractor to contact the Town to initiate joint inspection of POS**
   - Any Noted Issues to be Rectified and Re-inspected if required by the Town
9. **Upon demonstration that POS meets conditions and requirements the Town to issue written approval of Handover of asset to the Town**
   - Refer 17.3.5 of this Document for Asset Handover Checklist
15.3 Required Development Submissions / Documentation

15.3.1 Landscape Masterplan

The Detailed Landscape Master plan is to include:

- A detailed feature and contour survey
- Location of POS with respect to the boundaries of the development
- Boundaries of the POS
- Landscape theme (If any)
- Adjoining land uses (road, private lots etc.)
- Areas of natural vegetation to be retained
- Areas of natural vegetation to be cleared
- Wetland areas to be protected
- Trees worthy of retention
- Drainage functions including drainage infrastructure
- 10 year and 100 year flood water levels where applicable
- Areas to be planted and or grassed
- Pathway alignments
- Playground locations
- Location of any structures (pergolas, boardwalks etc.)
- Entry statement location and conceptual design
- Fencing
- Reticulation
- Proposed contours (including retaining walls)
- Services
- Species and Number of Individual Plants
- Specifications for all Structures and materials used

15.3.2 POS Masterplan

Details of the POS are to be submitted on a separate set of plans and shall include the following:

- Paths to the Town/Austroads specifications (See www.onlinepublications.austroads.com.au/items/AGRD06A-09)
- BBQ’s and Shade Structures if required and to the Town specifications
- Seats and Tables to the Town specifications
- Play equipment to the Town specifications
- Soft Fall to Town specifications
- Reticulation (sprinkler heads, reticulation pipes and solenoids) to the Town specifications (refer the Town Standard Irrigation System Specification 2014)
- Garden edging and or kerbs to the Town specifications
- Lawn area. Species to be confirmed by the Town
- Taps and fountains. To the Town specifications
- Plantings including Species and Numbers of Plants
- Lighting including positioning of poles. To the Town specifications
- Fencing to the Town requirements
- Rubbish/Recycling to the Town specifications and requirements
- Bollards and Entrance Gates to the Town specifications
• Any other inclusions to be approved by the Town

15.3.3 Management Plans
- Introduction – preamble of site, management plan objectives
- Maintenance Program – comprehensive 24 month maintenance schedule that covers the 2 year maintenance requirement for all sites
- Recommendations and Management Strategies, incorporating:
  o Weed eradication
  o Nutrient and irrigation management
  o Drainage maintenance program

15.3.4 As Constructed Documentation – OSPEC format
OSPEC will only be required for Major new developments. CAD file and ASCONS will be accepted for minor projects and developments.

15.3.5 Asset Handover Checklist
The Asset Handover Checklist is intended to guide the handover of the asset to operations and the processing of asset information records related to their creation and future operations. It is important that records relating to each asset are available for future reference.

It is the responsibility of the Project manager to complete this document

Refer Appendix 5 – Asset Handover Checklist

15.4 Landscape Maintenance Bond
Before Practical Completion a landscape maintenance bond is to be provided by the developer to ensure that landscaped POS is handed over to the Town in a satisfactory condition. The bond is to be in the form of either a bank cheque or cash bond. The landscape maintenance bond is to be equal to 5% of the contract value for landscaping works (exc. GST) as accepted by the Town, as security to ensure that the POS is maintained to an acceptable standard and be held in trust until POS handover.

During the maintenance period of 2 years the Developer and/or his responsible agents shall be responsible for the maintenance of the POS to standard that is acceptable to the Town. Where it becomes apparent to the Town that these standards are not being maintained then the Town will notify the Developer and if the accepted standards aren’t met within a timely manner the Town shall carry out maintenance procedures to ensure this is rectified at the Developers expense. In this case the cost of the work shall become a debt due to the Town and the Town may draw on any retention money or bank guarantee being held, without reference to or approval from the Developer and without limiting its right to recover any balance of money due should the security be insufficient to cover the costs of the works.

15.5 Substitutions
Given that these Guidelines are developed to ensure that fit for purpose assets capable of achieving their economic design life with minimal operating and maintenance costs are delivered, the Town has identified accepted proprietary items.

The identification of a proprietary item does not necessarily imply exclusive preference for the item so identified, but it does indicate the necessary properties of the item. If alternatives to the documented products, methods or systems are proposed then a written submission to the Town supplying sufficient information to permit a timely evaluation of the proposed alternatives including:
• Evidence that the performance is equal to or better than that specified
• Evidence of conformity to a cited standard
• Samples
• Essential technical information

All substitutions require approval by the Town prior to construction and or installation.

Refer Appendix 3 – Preapproved Items

15.6 Warranty and Defects

Warranty periods commence at the date of practical completion.

The warranty period shall be for 1 year or for such a period as supplied by manufacturer whichever is the greater. A twelve months defects liability period shall apply from the date of practical completion of the POS works. During the Warranty/Defects Period the Developer and/or his responsible agents shall be responsible for ensuring that satisfactory remedial repairs arising from faulty design, workmanship or materials are carried out. The cost of any consequential damage and claims resulting from such defects shall be charged to the Developer and/or his responsible agents. During the warranty/defect period, the Town may, at its discretion carry out remedial repairs where the fault affects the service to customers and/or public safety and the defects are not rectified within the time required by the Town. The cost of the remedial repairs shall be charged to the Developer and/or his responsible agents. Prior to the end of the Warranty/Defects period the Developer and/or his responsible agents will assess whether there are any defects. If so will notify the Town of the list of defects and have them rectified to the satisfaction of the Town. Any defects rectified during the defects liability period shall be subject to a further 12 months defects liability period.

16 POS Disability Access Requirements

To ensure equitable access and inclusion for people with disabilities POS should contain the following:

• Provision of clearly signed accessible parking close to the POS as possible
• Provision of a firm, continuous path free of obstructions and without steep slopes from parking to the entry point of the POS, linking all the accessible POS areas – playground, shaded seating, picnic tables, drinking fountain and barbecues
• Provision of an accessible barbecue, where required – connected to the rest of the POS facilities by an accessible pathway
• Provision of at least one accessible picnic table that is shaded and protected from weather connected to the rest of the POS facilities by an accessible pathway
• Provision of an accessible pathway into the playground to enable children and carers / parents to access the playground facility
• Provision of a shaded seating area adjacent the playground, connected to the rest of the POS facilities by an accessible pathway
• Where long walkways are provided, provision of signage that displays direction, distance and terrain, with resting places along its length
• Where drinking fountains are provided, ensure the provision of one that is accessible to all.

Refer to the Town of Port Hedland Disability Access and Inclusion Plan for further information.
17 Preparatory Site Works

17.1 Earth Works and Drainage Works
All works are to comply with the Building Code of Australia and relevant Australian Standards and Codes.

17.2 Protection of Trees
The Town is committed to preserving existing significant Trees and Remnant vegetation.

Before commencing work on site, assess and identify all trees which are indicated to be retained or removed, trees which may need partial cutting back or other work, and trees which are indicated to be removed, or required to be removed, to enable construction or access. Clearly mark trees to be retained with conspicuous plastic ribbon around the trunk, and maintain ribbons until Practical Completion.

Notify the Town of all trees proposed to be removed or cut back and arrange for a site inspection to confirm and approve these trees. Existing trees outside the line of works shall be retained and protected during construction. Do not remove or cut back any trees for site sheds, storage, or access unless and before approved in writing by the Town.

Provide temporary protection to all trees in close proximity to construction work, which may be damaged by such work. Protection may include installation of fencing, barricades, or other suitable procedures.

Take all necessary precautions to protect vegetation, including the following:

- Do not add or remove any soil within the drip line of trees.
- Do not store materials under or near trees.
- Do not park cars or other mechanical plant under trees.
- Do not place spoil from excavations within the drip line of trees.
- Do not damage tree bark or hanging branches etc.
- Do not cut roots exceeding 25mm diameter unless approved by the Town.
- Avoid compaction of ground under trees.

18 Storm Water Drainage Infrastructure
Although rainfall in Hedland is low, averaging just over 300mm a year, it is often concentrated in severe thunderstorms and occasional cyclones during the summer months producing heavy deluges. Therefore stormwater drainage infrastructure must be designed and constructed to cope with these events.

Drainage design within individual development applications for POS will be accessed by the Town on a case by case basis.

Better Urban Water Management Guidelines – Storm Water Management objectives include:

- Limiting negative impacts on existing ecological processes and systems
- Minimising negative impacts on natural hydrologic processes of catchments
- Balancing downstream run off and peak flows from urban development
• Minimising pollution & improving quality of water discharges to the natural environment
Incorporating collection, treatment and re-use of stormwater runoff in design solutions, where appropriate (due to infrequent rain events, collection of water in dryer climates can be impractical and often economically unsustainable - i.e. large infrastructure cost for little return);
• Protecting and enhancing surface and ground water quality
• Limiting demand on reticulated potable water supply systems - e.g. incorporating fit-for-purpose/multiple options into supply and distribution planning
• Limiting wastewater generation - including appropriate treatment/discharge/re-use of effluent
Acknowledging the link between water consumption and broader social, economic & community resource
• Increasing social and recreational values in urban areas through integrated green infrastructure
Adding value while minimising development costs and provide strategies that fundamentally integrate factors previously regarded as separate aspects of urban management (e.g. drainage infrastructure & maintenance costs, multi-use open spaces, cultural and environmental corridors)
Taking advantage of increased property market interest in environmentally responsible development
• Integrating management practices within and between institutions responsible for waterway and POS management.

At present, ‘best practice’ in Hedland has urban water run-off being directed from housing lot frontages directly onto the road easements where it is then transferred as close to source as possible (minimal hard pavement drainage) via one way cross falls including flush kerbing and/or kerbed outlet devices into endemically vegetated swales. Linear open space or multi use corridors include a specialised vegetated swale system that has an aim to retard and treat urban water volumes and flow rates. Slowing and filtering urban water minimising the amount of sedimentation (nutrient binding Pindan soils) leaving the site and the transportation of contaminants such as invasive weeds and pollutants.

In the North West soil condition positive swale levels work efficiently between the grades of 1:700 - 1:1000. At these grades flow rates and erosion is minimised. Drop structures can be used to maintain the flattened grades and are to be located along the swale floor where required.

18.1 Swale Vegetation
Re-vegetation of the swale systems is a critical factor for Hedland drainage conveyance. Vegetation of swales achieves the following Water Sensitive Urban Design outcomes:
• Stabilisation of swale bases and batters
• Filtering of fine Pindan silts that adversely affect conveyance infrastructure
• Filtering of fine Pindan silts that can bind nutrient levels in downstream marine ecologies
• Aids in providing a natural drainage ‘roughness’ reducing velocity of overland flows
• Filters and minimises the distribution of potential contaminates including exotic weeds.
Vital to water quality, revegetation and protection of the drainage swale system is the immediate application of site mulch and topsoil collected prior to bulk earthworks. Use of local site mulch and topsoil provides a ready source endemic seed bank. This, along with appropriate supplemental planting is fundamental to maintaining local biodiversity within the development area.

Refer Appendix 6 - Town of Port Hedland Revegetation Species List
19 Hardscape Elements

For the purposes of these Guidelines, hardscape refers to all

- Hardstand
- Edging
- Parking
- Structures

Hardscape elements are the surfaces and objects within a POS that contribute to amenity of the space and are the elements which we directly have interaction with. Because of this they are often subject to wear which can lead to safety issues for the POS user. Therefore consideration for appropriate materials and products for sustainability and longevity with minimal maintenance requirements for the foreseeable reasonable life of the projects and products is an important one.

The Town has compiled a range of preapproved items that are proven performers in the Pilbara environment.

Refer Appendix 3 - Preapproved Items

It is expected that variations in hardscape elements will occur where designs relate to a particular theme, narrative or landscape characteristic and preapproved items are not suitable. These items however, should still adhere to the Design Principles set out in these Guidelines and will need approval from the Town.

19.1 Hardstand

For the purposes of these Guidelines hardstand refers to all hard surfaces within a POS including:

- Dual use paths
- Concrete Pads for Shelters, Furniture etc.
- Unit paving areas
- Stabilised Gravel Areas

Paths and other paved areas shall be installed in accordance with AS1428.1/2/3/4:2002, Design for Access & Mobility.

19.1.1 Dual Use Pathways

Paths within POS should be constructed for safe and easy access. Paths shall be those of dual use and as such shall be a minimum width of 2.5m wide with a preference for 2.8m. Paths are to be constructed to the same specifications as for paths constructed in road reserves, which includes preparation of base.

Where vehicle access is to be provided construction shall be the same as required for vehicle cross overs. Paths shall be constructed to minimise damage to any retained trees and or vegetation. Where possible, paths shall be utilised as edging to turf /garden/play areas. Location of paths through grassed areas should not negatively impact on the informal active use of those grassed areas. Path alignment and construction details shall be shown on detailed landscape plans. The vertical path alignment design shall consider and accommodate the steepness and length of grades, changes of grade, sight distance and nature of the path. Where practicable, paths shall be constructed to a maximum grade of 1 in 20 to allow for disabled access.

Refer Appendix 2 – STD Drawing Detail 01, 08 & 09
19.1.1.1 **Finishes**

All surfaces are to be finished to Class 1 standard in accordance with AS 3610. Exposed aggregate including shellcrete is permissible with approval from the Town.

**Refer Appendix 3** - Preapproved Items 03, 04 & 05

**19.1.2 Concrete Hardstand**

Shelters and Furniture in POS should be mounted onto a concrete hardstand pad. Pads shall be constructed with a cross fall of 2% towards the kerb. Finishes

All surfaces are to be finished to Class 1 standard in accordance with AS 3610. Exposed aggregate including shellcrete is permissible with approval from the Town.

**Refer Appendix 2** – STD Drawing Detail 01, 02 & 03
**Refer Appendix 3** - Preapproved Items 03, 04 & 05

**19.1.3 Relevant Standards for Concrete Hardstand**

Concrete is generally specified in accordance with the provisions of Australian Standards AS 1379 Specification and supply of concrete and AS 3600 Concrete structures. The following Standards are also referred to:

AS 1012 *Methods of testing concrete*

AS 2758.1 *Aggregate and rock for engineering purposes* Part 1 *Concrete aggregate.*

AS 3582.1 *Supplementary cementitious materials for use with portland cement* Part 1 *Fly ash.*

AS 3582.2 *Supplementary cementitious materials for use with portland cement* Part 2 *Slag – ground granulated iron blast furnace.*

AS 3582.3 Part 3 *Amorphous silica.*

AS 3972 *Portland and blended cements.*

AS/NZS/ISO 9000 Quality management and quality assurance Standards.

**19.1.4 Unit Pavers**

Unit paving materials should be selected to allow easy access to underground services. Units should be readily available and replacement of units cost-effective in the occurrence of damage or discolouration. Paved areas need to be designed and constructed to withstand the environmental conditions in the Pilbara with low maintenance requirements.

**Refer Appendix 2** – STD Drawing Detail 03
**Refer Appendix 3** - Preapproved Items 06

**19.1.5 Stabilised Gravel Areas**

Compacted material is an acceptable treatment provided that the material is well graded, cement stabilised, water bound and compacted to a smooth finish. The depth of such material must be an absolute minimum of 100mm.

Gravel shall be fines with a maximum aggregate size of 7mm to 14mm maximum. Permissible materials by the Town include white quartz cracker dust and red scoria.
19.2 Edging

For the purposes of these Guidelines edging refers to constructed edges used to border a hard or soft ground treatment such as between a garden bed and lawn area. For safety reasons all edging is to be flush to the ground level.

Approved materials for edging in POS are extruded / formed concrete (profile 150 x150mm bullnose) and 4mm galvanised steel edging.

All concrete used shall be supplied by an approved firm in a ready mixed state and shall conform to the requirements of AS 1379.

All joints for steel edging are to be fully welded and finished to achieve smooth even surface. All welding shall be in accordance with relevant Australian Standards.

19.3 Parking

Parking on the verges of parks, recreation reserves, drainage reserves, and foreshore reserves without the express permission of the vested owner/occupier is not permitted. (Refer the Town 9/007 Roadside, Verge and Reserve Parking Policy). Adequate parking within or adjacent to any of the above reserves must be allowed for in development plans. This is to include provisions for Disability Parking and to be approved by the Town.

19.4 Structures

For the purpose of these Guidelines, structures refer to vertical built forms within the POS including:

- Shelters
- Fencing and Gates
- Signage
- Retaining Walls
- Board Walks
- Bridges
- Boom gates
- Play spaces

It is a requirement of the Town that separate Building Licences for each structure within a POS need to be obtained, prior to the start of construction.

19.4.1 Siting of Structures

All structures including play spaces are to be kept outside of turfed areas unless given permission by the Town. The placement of structures/facilities is to give consideration to ongoing maintenance of surrounding areas.
19.4.2 Shelters
Shelters within POS are to be constructed to cyclone standards and constructed from robust materials. No Shade Sails are permitted to be used in POS. It is important that the shelter is not climbable. The necessary building permit shall be applied for and approved by the Town prior to construction. The Town has an approved custom design for 4m x 4m and 6m x 6m shelters from Exterior Street and Park Outfitters. Approved colour is Windspray.

Other shelter designs including custom design are to be approved by the Town.

Refer Appendix 2 - STD Drawing Details 16

19.4.3 Fencing and Gates
Boundary fencing and gates in a POS should have visual permeability in accordance with CPTED guidelines to allow for passive surveillance. Fencing is to comply with building codes for cyclone areas.

Fences and gates are to comply with the Australian Standard™ ‘Design for access and mobility’ (AS1428.1/2/3/4 - 2009).

Fencing to irrigation compounds and other service areas is to be 2.4m black galvanised palisade. Fencing to POS is to be black galvanised palisade flat top. Height to be approved by the Town.

Other fencing designs including custom to be approved by the Town.

Refer Appendix 3 - Preapproved Items 09 & 10

19.4.4 Signage
Location and design of signage will be individually assessed by the Town at the time of development application.

19.4.5 Retaining Walls
Refer Appendix 2 – STD Drawing Details 07

19.4.6 Board walks
Refer Appendix 3 - Preapproved Items 11

19.4.7 Bridges
Bridge design is to be to site requirements and to be approved by the Town. Tensile wire side barriers are discouraged due to vandalism issues.

19.4.8 Boom Gates
Boom gates are to be provided to allow access and are to be a single swing half height gate. Leda Security Products model MSGF or similar is the style approved by the Town. Colour is to be approved by the Town.

Refer Appendix 3 - Preapproved Items 12

19.4.9 Chicanes
Chicanes may be used in pathways to slow bicycle traffic near playgrounds, other pedestrian areas and traffic areas.
Design and placement are to be approved by the Town.

Refer Appendix 3 - Preapproved Items 13

19.4.10 Play Spaces
Play spaces need to ensure the provision of a diverse range of age appropriate, quality play spaces whilst maintaining an effective use of resources and efficient maintenance costs. All proposed play spaces will be individually assessed by the Town based for relevance based on community requirements.

Playgrounds are to be considered as a complete package within any development and prior to their design the intended function and hierarchical classification needs to be established (Refer 15-16 of these Guidelines). Play opportunities, supporting amenity and landscape elements shall be designed as a whole to maximize the usefulness of each.

Play opportunities shall not be placed within close proximity to hazards such as roads and water bodies or within close proximity of private fences. Play opportunities shall allow for ease of supervision and allow for informal surveillance aligning with CPTED Guidelines.

All play areas to be enclosed by a concrete or approved hardstand edge restraint. Seating shall be provided adjacent to key play areas to enable maximum supervision. All play areas shall have functional shade provided with a preference for permanent shade structures. Equal access and inclusion opportunities shall be provided to all play spaces.

Paths shall be utilised where possible as edging for play areas.

19.4.10.1 Soft Fall

All play areas to utilise rubberised soft fall to the Town specifications and to conform to Australian Standards and be enclosed by a concrete or approved hardstand edge restraint.

All soft fall surfaces shall comply with Australian Standard™ ‘Playground equipment’

AS 4422 2106

AS 46850 2017

Refer Appendix 2 – STD Drawing Detail 13

19.4.11 Maintenance of Structures
Developers of POS are required to undertake maintenance of all structures for a period of 24 months and to provide all manuals and schedules for items.

20 Lighting

Design proposals for any lighting within the POS must be designed by a suitably qualified lighting designer and demonstrate compliance with AS 1158.3.1 Pedestrian Area Category P lighting-performance and design requirements.

Lighting within a POS should be energy efficient with the Town’s priority for solar and led lighting.

Where a proposed POS extends from adjoining roads the POS lighting shall be consistent. POS lighting selection shall consider existing street lights on surrounding roads. Where lighting in a POS is required all poles shall be located outside any turfed areas where possible. Where poles are located within a turfed area the base of the poles shall be surrounded by a concrete collar 600mm in diameter.
20.1 Siting of Structures and Light Poles

All structures including play spaces are to be kept outside of turfed areas unless given permission by the Town. The placement of structures/facilities is to give consideration to ongoing maintenance of surrounding areas.

21 Bollards

The perimeter of any POS (i.e. parks, foreshore, drainage, etc.) shall be bollarded or where appropriate fenced to prevent vehicle or pedestrian access as per the Town Local Policy 9/001. Where roads are closed or cul-de-sac heads and roads reserves are not enclosed by private lots, or developed lots, bollards shall be installed to prevent vehicle access to adjacent POS. Provision for bollards or barriers to protect pedestrians from vehicles and bicycle traffic shall be included in footpath construction programs consistent with relevant Australian Standards.

Removable bollards must be installed where maintenance vehicle access is required Posts shall be installed at maximum 1.5m centres. Bollards are to be avoided in areas of turf.

Bollard design and dimensions is to be approved by the Town. Preference is for recycled plastic or steel.

Refer Appendix 3 - Preapproved Items 16 & 17

22 Furniture

For the purpose of these Guidelines, furniture items include but are not limited to the following:

- seats, benches and tables
- boulder seating
- litter bins
- drinking fountains
- bicycle racks
- tree grates, and
- barbeques

It is important that durability and minimal maintenance are considerations with the selection of furniture items for POS. Furniture items should include equal access provision.

Refer AS1428 Design for Access and mobility parts 1, 2, 3, and 4.

22.1 Seats, Benches and Tables

Seats, benches and tables shall be installed onto hardstand.
Furniture to be of aluminium construction with fully enclosed Aluminium profiled sections with end caps in an Anodised Finish or similar. Colour options to be provided at plan submission for Town’s approval. The use of wood is discouraged by the Town and requires Town approval.

A percentage of furniture within a POS needs to be DAIP compliant.

Exterior Parkway Seat and Garden Table & Boardwalk Bench or similar is the style approved by the Town.

Refer Appendix 3 - Preapproved Items 18 & 19

22.2 Casual Boulder Seating

Large local sandstone boulders can provide casual and robust seating opportunities within a POS. The boulders are not to be quarried to avoid sharp edges. The boulders should be of a light colour to avoid heating.

Refer Appendix 2 – STD Drawing Details 14 & 15

Refer Appendix 3 - Preapproved Items 20

22.3 Litter Bins

The Town discourages the use of bin surrounds and installment of them must be approved by the Town.

The Town recommends a 240 litre size wheelie bin. A Litter Bin Lockable Post to be used and to be positioned strategically for use by public as well as for ease of regular servicing.

The number and location of bins required to be determined by The Town Coordinator Waste / Project Operations.

The Town approves Exterior Street & Park Outfitters – Steel SHS Posts. Hot dip galvanised finish or similar.

Refer Appendix 3 - Preapproved Items 21

22.3.1 Dog Bag Dispensers

A dog bag dispenser may be required where POS has a dog exercise area and is to be approved by the Town.

The Town approves Woodlands AMS Dog Bag Dispenser – Galvanised steel finish or similar

Refer Appendix 3 - Preapproved Items 22

22.4 Drinking Fountains

The Town approves the use of Pet / Drinking Fountain: PF400 manufactured by Urban Furniture & Fountains or similar.

Drainage is to be provided away from fountain.

Refer Appendix 3 - Preapproved Items 23

22.5 Bicycle Racks
The Town approves single hoop galvanized bicycle racks. Number of racks will vary due to POS size and use and to be approved by the Town.

Refer Appendix 3 - Preapproved Items 24

22.6 Barbeques

The Town receives many requests from developers and local residents to install barbeques in POS. The Town will consider these request based upon:

- Proximity to existing BBQ’s
- Target demographics (eg. Families)
- Maintenance requirements
- POS Design Principles

Where BBQ’s are to be part of a POS they are to be situated in close proximity to play areas so as to enable supervision of such areas. The positioning of such to take into consideration AS1428 Design for Access and mobility parts 1, 2, 3, and 4.

There shall be suitable shelter provided to enable usage in all weather and suitable lighting shall be provided so area can be utilised during restricted hours at night in summer months. Lighting shall be turned off at 8.00pm.

BBQ areas shall be surrounded by hardstand to a minimum distance of 2.5m from hot plates. Suitable drainage and soak wells, as approved by the Town shall be provided and placed in such a manner as to adequately take away any waste water from the fat trap.

Christies Park Modular Electric BBQ is the preferred style and meets the Town standards. Bench configuration and amount of cook tops will vary depending on POS needs and approval of the Town.

Refer Appendix 3 - Preapproved Items 25

23 Public Art

Public Art has the opportunity to communicate and celebrate the heritage and stories of a place. It can contribute to creating a unique space that relates to a particular theme, narrative or landscape characteristic.

23.1 Definition - Public Art

Public Art is defined in the broadest sense as artistic works or activities created for, located in, or developed as part of a public facility or space. Public Art includes any planning or conceptual contribution of an artist to the design of public facilities and spaces.

23.2 Policy Objective

To allow residents and visitors to discover and to enjoy a unique natural and urban environment that offers a strong sense of local place. In particular to:

- Invigorate the town by increasing its artistic profile, making it a vibrant place in which to live, work and visit
- Promote the works of artists living in or coming from the Port Hedland region
- Contribute to the growth of cultural tourism
- Improve the visual and social amenity of the Town of Port Hedland
• Encourage a greater understanding and appreciation of our cultural heritage
• Create employment and training opportunities for local people in this field.
• Create a framework for the conservation and care of the Town public art
• Create passive recreation opportunities for the community

Refer 8/002 Public Art Policy for more information on Public Art

24 Irrigation

Reticulation is an important element in intensive use areas and systems shall be designed to reflect the importance of this valuable resource. Irrigation design should apply principles to ensure sustainable use of water and the design and operation must comply with Water Corporation Guidelines and legislation and water restrictions current at the time of development. Irrigation design and operation must not impact on road pavements, footpaths or other infrastructure on the verge.

Contact Dial Before You Dig (1100) and other service and utility providers prior to commencing installation to ensure that underground services and infrastructure are not damaged and correct clearances are maintained.

The Town of Port Hedland Standard Irrigation System Specification is available as a reference document for irrigation details.

25 Softscape Elements

For the purposes of these Guidelines, Softscape Elements include:

• All existing vegetation, swale planting, garden bed planting, tree planting and lawn areas
• All mulch areas

26 Relevant Standards

Ensure that all application amount and types of soil conditioners, fertilisers, mulches and wetting agents comply with Australian Standards:

• AS 4419. Site and Imported Topsoil
• AS 4454. Composts, Soil Conditioners and Mulches
• AS 3743. Potting Mixes

27 Existing Vegetation

POS development sites may contain existing vegetation which includes both native and exotic trees and plants. The Town is committed to preserving existing significant trees and remnant vegetation with the exclusion of weed species.

Vegetation to be retained needs to be clearly indicated on any landscape plans and is to be fenced off on site prior to construction works.

Any vegetation to be cleared needs to be pre-approved by the Town.
Refer Item 17.2 Protection of Trees

28 Revegetation

Areas of bare or denuded land may require revegetation to mitigate such factors as erosion, dust, soil loss and aid in the protection of engineered grades and other earthworks. Establishing long term plant colonies can be undertaken through seeding or the planting of tubestock. The Town recommends that all species chosen for revegetation works be native to the area. Revegetation is generally carried out via direct seeding, tubestock planting or a combination of both.

Refer Appendix 2 – STD Drawing Detail 19
Refer Appendix 6 – Revegetation Species List

29 Mulch

All garden beds and trees are to be mulched to reduce moisture loss and soil temperature. A minimum of 150mm mulch cover shall be maintained to all shrubs and trees. Mulch on garden beds is to be 150mm thickness and to be measured at practical completion and again 3 months prior to maintenance period expiring.

Mulch levels shall be maintained to 25mm below adjacent hard edges at all times. Mulch is not to be mounded above adjacent surface levels.

Avoid having a thick layer of mulch surrounding the stem as this may induce collar rot. All mulching is to be maintained to ensure that irrigation pipework remains covered.

Organic mulch is preferred by the Town. Mulch should not be fine, but coarse and ‘chunky’ to avoid compression. Mulch should not contain peat.

The Town predominantly utilises and encourages pine bark mulch for all planting beds, however compacted fines such as white quartz cracker dust, and rock mulches such as river shingles may be utilised with approval from the Town.

Larger feature stone mulch of 200-300mm is accepted by the Town for landscaped areas

Refer Appendix 2 – STD Drawing Details 12 & 17

30 Turf

Mention design of turf space for perimeter access for mowers

30.1 Species Selection

The species to be advised by the Town of Port Hedland but shall be either or:

Winter Green (Cynodon dactylon) or Empire Zoysia (Zoysia japonica) shall be supplied and laid as roll on turf.

Installation of stolons is not permitted by the Town. Installation of artificial turf is permissible but not encouraged by the Town.

30.2 Ground Preparation
Eradicate weeds prior to laying using environmentally acceptable methods, such as a non-residual glyphosate herbicide at the recommended maximum rate. Remove any weed growth from an area 500mm diameter from around the base of trees and structures. Hand weed any rubbish and weed growth throughout grassed and planted areas.

Prepare lawn areas by spreading topsoil to a depth of 100mm. Apply TerraCottem Turf Soil Conditioner at a rate of 180grams per metre squared and incorporate thoroughly to a depth of 100mm with a rotary device, across the length and width of the area. The lawn shall be watered after planting and thereafter as necessary to produce a satisfactory cover.

The Town to approve any substitute soil conditioner.

Refer Appendix 2 – STD Drawing Detail 18

30.3 Maintenance

30.3.1 Insect and Disease Control
It will be the contractor’s responsibility for insect and disease control: The period of treatment shall be until the problem is solved. Application of any treatments shall occur outside of normal working hours.

30.3.2 Mowing and Trimming
Remove litter and branches before mowing. Shall be mowed consistent with the growth habit of the grass variety and shall be maintained at a height of 25mm-40mm for Zoysia Empire and 15mm–25mm for Winter Green throughout the year.

Mowing shall be on a weekly basis during periods of high growth and at three week intervals at other times. Do not mow under wet conditions.

Edges adjoining plant beds, pathways, base of trees and other obstacles shall be trimmed to coincide with mowing.

Care should be taken not to damage trees or shrubs.

30.3.3 Top Dressing
All wheel tracks and any other sunken areas are to be top dressed to bring them up to level with surrounding areas as soon as practicable and prior to practical completion and no later than 3 months prior to maintenance period ending.

30.3.4 Fertilising
Fertilising shall be required to correct any nutrient deficiencies and be incorporated into a maintenance program which is to include a granular application in the spring and autumn. Fertilising will be required to be done no later than 3 months prior to maintenance period ending.

30.3.5 Irrigation
Shall be programmed to suitably meet the needs of the turf and weather conditions and shall comply with Water Corporation guidelines as to programming.

All costs incurred resulting from fines for breaches of the guidelines to be the responsibility of the contractor.
Plant Species Selection

Proposed planting within POS shall be based on climate, soil and water responsive design considerations that address the specific nature of the Pilbara environment. The creation of shaded areas so that POS can be utilised as much of the year as possible is an important factor in planting design. Maintenance and longevity shall also be a consideration in species selection. All planting is to be approved by the Town and no weed species will be approved.

Planting selection and design shall incorporate CPTED principles to ensure the construction of safe POS.

The Town encourages the planting of local species to enhance local character, however water wise exotic species that require minimum maintenance shall be permitted.

Supply of plant species in the Pilbara can sometimes be limited. It shall be ensured that species selected for POS are readily available.

Refer Appendix 4 – Town of Port Hedland Preferred Planting Guide

Trees and Garden Bed Planting Procedure

Planting stock should be healthy and undamaged. Trees should be straight, strong and of good shape, all plants should be free of disease and insect damage and not pot-bound.

Feature trees shall be a minimum size of 45 ltr container. Minimum size for general plantings shall be 140 mm pots, unless authorised by the Town.

No plantings of any trees/palms that are susceptible dropping of debris i.e. coconuts not permitted adjacent to playground areas or areas where the public has access to.

No Tree or Shrub to be planted within 3m of any hardstand treatment, furniture or light pole.

Dial 1100 for Dial Before You Dig or go on line to www.dialbeforeyoudig.com.au

Grass, grass roots and weeds should be treated with herbicide and / or removed from the area to be planted.

Mass Planting

Mass planting beds for small shrubs and annuals should be thoroughly turned over ensuring that there is a good top soil layer of approximately 300mm. Where good top soil is absent this should be imported. TerraCottem Turf Soil Conditioner shall be applied at a rate of 180 grams per metre squared and incorporated thoroughly to a depth of 200mm with a rotary device, across the length and width of the area, before any planting is undertaken.

The Town to approve any substitute soil conditioner.

Planting Procedure for Plant Stock and Trees

The Town recommends the following planting procedure be utilised:

1. Thoroughly water all plant-stock before planting. Ensure that roots of plant-stock are not exposed to drying influences such as sun or wind.
2. All plant-stock shall be set plumb and placed to ensure a normal relationship of the crown to the soil surface as per STD Drawing.
3. Incorporate *TerraCottem Universal Soil Conditioner* (amounts to manufacturer’s instructions according to planting size) mixed thoroughly into backfill soil taken from planting hole. A portion of the mix is to be placed in the bottom of the hole.

4. Place plant-stock vertical in the centre of planting hole with care to avoid damage to roots.

5. Back-fill the planting hole with remaining excavated site soil amended with *TerraCottem* and water-in at the same time.

6. Form a raised bank of compacted soil around the base of each plant to contain watering as per

7. All street trees and large shrubs/trees as required shall be staked. Tree stakes approximately 50 - 70mm square or in diameter and set to 1.5 m height is recommended. Stakes are to be made from Jarrah only. Stakes are to be driven at least 400mm into the ground surface and vegetation main trunks tied with approved figure 8 expandable industry grade ties.

8. Protect newly-planted areas from pedestrian traffic by suitable methods until the plant-stock is well established. Protection may include three-strand wire fence on steel star pickets.

The Town to approve any substitute soil conditioner.

Refer Appendix 2 – STD Drawing Detail 19, 20 & 21

32.2.1 Staking and Tying

Small trees and shrubs should not require staking and tying. However, where necessary, the same method as described for large trees in 32.2 Planting Procedure for Plant Stock and Trees may be used.

Staking should always be used where mowing or slashing occurs in the vicinity of the plant, for protection. Ties should be inspected regularly to ensure they have not broken or that no injury occurs to the tree. Guying and anchoring may be used on very large trees that have been shifted or trees which have blown over. Each tree should have three guy lines which support the tree at the same point. The guy lines should be enclosed with a material such as rubber hose where they rub the tree. The lines should be connected to stakes or pegs in the ground about 2-3 m. from the tree. Guys should be clearly marked for pedestrians and cyclists.

Refer Appendix 2 – STD Drawing Detail 21

32.3 Median Strips

Trees should be clear trunked so as not to impede sight lines. Planting should be set back from back of kerb with the distance to be ascertained by the Town on a case by case basis. No Tree or Shrub to be planted within 3m of any hardstand treatment, furniture or light pole.

Refer Appendix 4 – Preferred Planting Guide

32.4 Roundabouts

Trees should be clear trunked so as not to impede sight lines for vehicles. Planting should be set back from back of kerb with the distance to be ascertained by the Town on a case by case basis. No Tree or Shrub to be planted within 3m of any hardstand treatment, furniture or light pole.

Refer Appendix 4 – Town of Port Hedland Preferred Planting Guide
33 Maintenance

The Town requires that new POS is developed to a minimum standard and where the POS is classified as Neighbourhood, District or Regional POS it is maintained by the developer for a five year period. The Town will consider requests to bond works and maintenance required as part of the development of POS.

Developers of all other POS on the Town owned or managed properties shall be responsible for the maintenance of the landscaping for a period of 18 months, unless negotiated otherwise.

A maintenance schedule shall be submitted to the Town for approval prior to construction. This shall include types of fertiliser and herbicide use, mowing frequency and heights, schedule for maintenance of irrigation equipment, irrigation schedule and types of fertiliser and herbicide use and frequency.

Handover of maintenance to the Town after this period shall be conditional on coordinated inspections, approvals, training and supply of all as constructed and warranty information.

34 Inspection and Testing

Inspections are required to be carried out by a representative of the Town at the following stages:

- Completion of landscaping and irrigation work; and
- Practical completion.
Appendices

1. Town of Port Hedland Verge Treatment Application Form
2. Standard Detail Drawings
3. Town of Port Hedland Preapproved Items
4. Town of Port Hedland Preferred Planting Guide
5. Town of Port Hedland Asset Handover and Checklist