



**WD 13B:
Streetscapes and Public
Access Ways Landscape
Design Specification**

2016

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1. Scope

- 1.1 The work to be executed under this specification consists of the design of landscape in streetscapes, road reserves and public access ways. This specification outlines the standards that have been traditionally used in landscape design within the City of Wanneroo. Should designers wish to submit designs with alternative specifications, they should clearly demonstrate that it meets the performance criteria acceptable to the City of Wanneroo as follows:

- Technical Standards (compliance with Australian Standards & Industry Guidelines)
- Safety
- Environmental compatibility
- Amenity
- Accessibility and convenience
- Economy (Efficient capital development that can be accommodated within City of Wanneroo budgets, effective asset management & maintenance)

2. Objectives

- 2.1 The intention of this Specification is to provide Developers, Landscape Architects and Landscape Designers with guidance regarding City of Wanneroo's compliance standards concerning streetscape, road reserves and public access way landscape design. There may be additional requirements of a more site-specific nature which are not covered in this specification. It is recommended that the City of Wanneroo is contacted at concept design stage to discuss the various conditions which may form part of the approval process.

3. Reference and Source Documents

- 3.1 This specification shall be read in conjunction with the requirements in the following documents:

- IPWEA - Local Government Guidelines for Subdivisional Development
- City of Wanneroo District Planning Scheme No. 2
- City of Wanneroo Local Planning Policy 4.3: Public Open Space
- City of Wanneroo Local Planning Policy 4.1: Wetlands
- City of Wanneroo Local Planning Policy: Signs
- City of Wanneroo Local Planning Policy 4.8: Tree Preservation Policy
- City of Wanneroo Street Tree Masterplan
- City of Wanneroo Verge Treatment Guidelines
- City of Wanneroo Design Specification WD5: Stormwater Drainage Design
- City of Wanneroo Design Specification WD6: Site Regrading
- City of Wanneroo Design Specification WD9: Cycle and Pathway Design
- City of Wanneroo Design Specification WD10: Bushfire Protection
- City of Wanneroo Design Specification WD15: Property Development Design
- City of Wanneroo Standard Irrigation Specifications
- City of Wanneroo Standard Drawings

- City of Wanneroo Local Biodiversity Strategy
- City of Wanneroo Irrigation Specification
- City of Wanneroo Style Guide 9.9
- City of Wanneroo and Department of Water North West Corridor Water Supply Strategy
- Utility Providers Code of Practice for WA (MainRoads and WAPC)
- Liveable Neighbourhoods (DoP and WAPC)
- Australian Standards
- Austroads Guides
- Public Parkland Planning and Design Guide (Department of Sport and Recreation, WA 2014)
- Cultural Heritage Due Diligence Guidelines (Department of Aboriginal Affairs, WA 2013)
- Planning and Design for Pedestrians" (WALGA, DoT, DoP, PTA, MainRoads, IPWEA, DSC & RAC, WA version 5, 2012)

4. General

- 4.1 Compliance with the Australian Standards is a City of Wanneroo requirement; however, this does not guarantee approval as acceptance of any items is at the City's discretion.
- 4.2 The following temporary items are not permitted:
- Irrigated soft-landscaping
 - Hard-landscaping
 - Play equipment and exercise equipment
 - Structures or built elements
- 4.3 Temporary soft-landscaping can be considered for stabilization provided the following criteria are met:
- planting shall be unirrigated
 - the installation would not form part of the required developer two year maintenance period (this would commence once the permanent planting is installed)
 - 'temporary planting' signage to the City's approval would need to be installed.
- 4.4 Where landscaping is proposed in close proximity to existing traffic lanes, a traffic management plan shall be prepared in accordance with AS1742.3-2002.
- 4.5 Trees and vegetation exceeding a height of 600mm at mature height are not permitted in truncation areas (sightlines). In addition please refer to Austroads 'Intersection at Grade' part 5 and the City of Wanneroo's technical drawing TS 04-3.

5. Trees

- 5.1 Please refer to the City of Wanneroo Street Tree Masterplan for appropriate tree species for each road type/size.
- 5.2 Minimum number of trees in residential streetscapes:
- Standard Lot – one tree per lot
 - Corner Lot – one tree on the short side, two trees on long side if 10m apart
- 5.3 A greater number of trees than the above minimum may be proposed dependent on the species size and growth habit; provided that there is sufficient space; and provided that the adjacent residence will have sufficient access to light.
- 5.4 Trees shall be set back:
- Offset from road as per Liveable Neighbourhoods
 - 1m from footpath mow strip/garden edging and paved surfaces
 - 1.5m from crossovers
 - 2.5m from structures including (but not limited to) walls, built elements, signs and streetlights

Where this cannot be achieved, the City of Wanneroo shall be contacted to discuss alternatives.

- 5.5 Tree species that incurred considerable damage to infrastructure include Araucaria species. Therefore the City of Wanneroo will permit the use of Araucarias in streetscapes under the following specific conditions:
- Araucarias are not permitted in verges adjacent to private property.
 - Araucarias are permitted in POS and verges to POS, provided that they are set back 3.5m from kerbs, paving, footpaths and DUP's.
 - Araucarias are permitted in medians provided that there is a 3.5m setback from the trunk to the kerb and provided that root barrier is used along the kerb.
- 5.6 All trees planted in road reserves shall be on standard alignments as set out in the 'Utility Providers Code of Practice'.
- 5.7 Street trees to be a minimum of 70% native with appropriate species as per the City of Wanneroo Street Tree Masterplan.
- 5.8 The selection and placement of trees species should take into account:
- Perth's annual coastal plain rainfall (700mm per year) in areas with temporary or no irrigation (trees with higher water demands will not survive)
 - Adjacent private property's access to natural light
 - The crown of the tree at maturity should not overhang private property (preventing leaf and fruit/nut drop into private property)
 - The crown of a nut drop/fruit fall tree at maturity should not overhang onto paved areas, footpaths and dual use paths (trip/slip hazard) offset to City of Wanneroo assets and private property

- 5.9 Retained trees shall be protected during construction as per AS 4970-2009.
- 5.10 Mature, transplanted trees shall be accompanied with a temporary watering license that is valid for five years.

6. Turf

- 6.1 Lawn/turf is not an acceptable treatment for public access ways, verges or medians treatment due to water conservation and maintenance requirements and as per the City of Wanneroo and Department of Water North West Corridor Water Supply Strategy.
- 6.2 It is recommended that verges receive mulch and planting treatment using native, water wise species.

7. Planting

- 7.1 All planting (trees, shrubs, turf, groundcovers), both irrigated and dry-planted shall be maintained by the Developer at the Developers cost for a minimum period of two years (including two summers) prior to handover to the City of Wanneroo.
- 7.2 Note – the City of Wanneroo does not accept handovers from the start of November to the end of March. If necessary, the developer shall extend the maintenance period accordingly at their own cost.
- 7.3 Planting shall comprise of water-wise, robust species with good longevity.
- 7.4 Planting shall be mulched with a 75mm thick bark/wood mulch layer.
- 7.5 Planting within the road reserve shall be a maximum height of 600mm at maturity.
- 7.6 Native planting species are encouraged.
- 7.7 Minimum planting density is 3 plants per square meter for flat areas and slopes up to (but not including 1:4). Note: generally verges are to grade at 2% towards the road. Proposed batters will be considered in line with Engineering approvals.
- 7.8 1:3 and 1:4 slopes are to have a minimum planting density of 6 plants per square meter.
- 7.9 The maximum allowable planting slope is 1:4 (1:6 is preferred), unless Engineering approvals allow for 1:3 slopes.
- 7.10 No slopes may be steeper than 1:4, unless Engineering approvals allow for 1:3 slopes.

- 7.11 Retained areas of vegetation to have initial weeding prior to PC, then seasonal spraying or manual removal (where spraying is not feasible) through the Developer maintenance period as per the City's standard maintenance regime.
- 7.12 Manual removal should be undertaken when:
- weed species occur within 10cm of planted tubestock or retained vegetation
 - weed species are about to go to seed

8. Verge and median small rainfall event areas

- 8.1 If permitted as per Local Planning Policy 4.3 (LPP4.3) and Specification WD5, biofilters for small rainfall event runoff conveyed via pipes to POS should be planted in accordance with the City of Wanneroo Biofilter Plant List, based on Vegetation Guidelines for Stormwater Biofilters in the South-west of Western Australia.
- 8.2 Small rainfall event treatment areas should be designed as biofilters unless the contributing catchment is limited to less than 1000sqm.
- 8.3 Small rainfall event areas (if permitted as per LPP4.3 and Specification WD5), shall have:
- a planting density of 6 to 8 plants per sqm, or,
 - an alternative density design may be proposed based on the type of management system, plant type and species, stormwater quality and aesthetic. Should the alternative design be proposed, supporting documentation shall be submitted to confirm biofiltration erosion control and 90% plant coverage.
- 8.4 Inorganic mulch will be accepted on the base of small-event drainage treatment areas (biofiltration areas and roadside swales), provided the mulch is set back a minimum of 600mm from roads, paths and paved areas.
- 8.5 Designers shall consider health and safety issues associated with drainage areas adjacent to footpaths and roads.

9. Irrigation

- 9.1 The total irrigated area and average irrigation rate shall be in accordance with Schedule 6 of LPP 4.3 and the City of Wanneroo and the Department of Water North West Corridor Water Supply Strategy.
- 9.2 To facilitate planting establishment, any dry-planting should take place in late autumn/early winter and supplementary infill planting shall be undertaken the following year in late autumn/early winter.
- 9.3 Irrigation design is to comply with the City of Wanneroo Irrigation Specification.

10. Maintenance Strip

- 10.1 A 600mm wide bark/wood mulch pedestrian refuge strip along the kerb-line (measured from the back of kerb) is required on all roads with a speed limit of 50km/hr or less.
- 10.2 A 1200mm wide bark/wood mulch pedestrian refuge strip along the kerb-line (measured from the back of kerb) is required on all roads with a speed limit exceeding 50km/hr.
- 10.3 The bark/wood mulch layer for pedestrian refuge strips shall be 75mm thick.
- 10.4 A 1000mm – 1200mm wide permeable paving, or organic mulch pedestrian refuge strip along the kerb line (measured from back of kerb) is required on all District and Primary Distributor Roads.

11. Hard-landscaping

- 11.1 Pervious paving is recommended.
- 11.2 Loose: gravel/crushed stone/spawl/filter rock/stone mulch and the like is not permitted on verges or medians, in verge and median swales/rain gardens etc or adjacent to footpaths, cycle paths and dual use paths, however, inorganic mulch will be accepted on the base of small-event drainage treatment areas (biofiltration areas and roadside swales), provided the mulch is set back a minimum of 600mm from roads, paths and paved areas.
- 11.3 Crushed/stabilized limestone shall be compacted and cement stabilized to form a completely hard solidified surface.
- 11.4 Concrete garden edging shall be 32MPa on a sub-base compacted to 95% MDD.
- 11.5 Concrete foot paths and dual use paths shall be 32MPa with expansion joints every 5m and contraction joints every 2.5m.
- 11.6 Verge footpaths and dual use paths identified in the WAPC conditions shall be designed, approved and undertaken as a part of the Engineering works.
- 11.7 In-situ cast paving shall be 32MPa with expansion joints at 3m centers in both directions
- 11.8 Stairs/steps are to have risers between 150mm and 180mm inclusive and treads 300mm minimum.
- 11.9 Step treads and risers shall be parallel.
- 11.10 Rocks shall be mortared in place and shall be set back 1.2m from back of kerb and 0.6m from footpaths and dual access paths.
- 11.11 Tiles and other easily vandalized cladding or capping shall not be permitted.

- 11.12 Consideration should be given to longevity and robust design.

12. Universal Access

- 12.1 Universal accessibility shall be provided with ramps/walkways complying with the Australian Standards.
- 12.2 Foot paths to link to broader path network and allow for universal accessibility.

13. Maintenance Access

- 13.1 Vehicular access for parks maintenance trucks to public access ways shall be provided via a minimum 3m wide reinforced concrete crossover with lockable removable bollards or a lockable chain gate. The crossover is to extend from kerb across the verge footpath or dual use path.
- 13.2 Public access ways 40m in length or longer will require vehicle access the whole length of the public access way via a minimum 2.5m reinforced concrete path.

14. Bollards

- 14.1 Trees should be used as a substitute for bollards where possible. Where this is not practicable, bollards may be used with the following requirements:
- If located in a footpath or dual use path, they are round profile, treated timber, painted white with a red reflective band at the top (visibility requirement).
 - If they are located outside of a footpath or dual use path, they shall be round profile, unpainted treated timber.
- 14.2 Powder coated aluminium bollards may be used in business/retail/commercial centre areas, provided that the safety visibility requirements as set out in 14.1, (first bullet point) above are met.
- 14.3 Removable bollards or chain gates (as required by the City of Wanneroo for access) shall be secured by a padlock, keyed to the City's standard.
- 14.4 Bollards shall be set back 1.2m from the back of kerb.

15. Security Lighting (if required)

- 15.1 Security lighting (determined on a case-by-case basis where the City deems users may be at risk) shall be located appropriately (near facilities), compatible with City light fittings, locally sourced, vandal resistant, low maintenance, low replacement cost and energy efficient and to be in accordance with LPP 4.3.
- 15.2 Electrical lighting shall be powered from a metered power supply. The developer is responsible for the payment of the electricity account until handover.

- 15.3 Solar lighting is to have the battery located at the top of the light or in a theft-proof box at the base.

16. Structures and Furniture (if permitted)

- 16.1 Prior to the commencement of works (after Landscape Approval is granted by the City of Wanneroo), building license (as per the Building Act 2011 and Building Regulations 2012) shall be sought for:
- Shelters (larger than 10sqm)
 - Shade sails (larger than 20sqm)
 - Retaining walls (over 500mm in height)
 - Masonry fences (over 750mm in height)
 - Any non-masonry fences (over 1800mm in height)
- 16.2 Accessible retaining walls with a height of 1m and greater require a 1m high balustrade.
- 16.3 All walls and fences, including property boundaries facing the road reserve, public access ways, public open space and school site require a non-sacrificial anti graffiti coating application.
- 16.4 Anti-skate nibs shall be placed on walls adjacent to hard-stand areas.
- 16.5 Steel shall be hot-dip galvanized and un-painted.
- 16.6 Shelters and furniture (to the City of Wanneroo's approval) shall be:
- un-painted hardwood timber
 - un-painted hot-dip galvanized steel, or
 - power-coated aluminium
 - High-density polyethylene (HDPE) (non-structural)
- 16.7 All furniture, structural and architectural elements, shelters etc to be durable, easily maintainable, low-maintenance, readily available for replacement, low-cost, sustainable and robust.
- 16.8 Structures shall be designed in such a way that they do not act as a screen or conceal antisocial behavior as per Crime Prevention Through Environmental Design recommendations (CPTED).

17. Artwork (if permitted)

- 17.1 Artworks require a Development Application (prior to the commencement of works) and a Management Plan.
- 17.2 Artwork shall have no movable parts.
- Artwork shall be low-maintenance.