



Public Open Space Landscape Guidelines

Image 1: Cover - Minnowarra Park - Armadale. Photographer - City of Armadale. Photographer Unknown
Image 2: Acknowledgement of Country - Champion Lakes - City of Armadale photo. Photographer Unknown

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June 2024	B	Issued for 90% review
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Acknowledgement of Country

The City of Armadale acknowledge the Traditional Owners and the Custodians of the land upon which we stand, work and play. We acknowledge Aboriginal people as the First Peoples of this land and their connection to the lands and the waters, as they are part of them spiritually and culturally. We acknowledge their ancestors, the Elders past and present, who have led the way for us to follow in their footsteps and the emerging leaders of today and tomorrow.



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Overview and Scope

The City of Armadale Landscape Guidelines for Public Open Space (Landscape Guidelines) is intended to provide Developers and Consultants with a concise guide that outlines the processes and expectations relating to new landscape works in subdivision development within the City of Armadale.



Image 3: Champion Lakes - Photographer PLAN E

Landscape Design Guidelines

This document will provide guidance through the following Development Stages:

- Structure Planning
- Subdivision Approval, including Clearance,
- Landscape Construction, including Practical Completion and Maintenance
- Handover of the Public Open Space (POS) to the City of Armadale (The City)

City's Corporate Business Plan

The Landscape Guidelines align with the following actions in the City's Corporate Business Plan:

- 1.2.3 - Take an adaptive approach to the provision of a diverse range of active and passive recreational opportunities within the City
- 2.1.1 - Utilise water efficiently and effectively as part of City operations.
- 2.1.2 - Improve the quality of water in the City's rivers, streams, brooks, drains and wetlands.
- 2.1.3 - Minimise impacts on air quality throughout the City.
- 2.1.4 - Protect soil and land resources throughout the City.
- 2.1.5 - Biodiversity is managed to preserve and improve ecosystem health.
- 2.1.6 - Facilitate the creation of partnerships and support strategies for the maintenance and enrichment of the natural environment, and recognise the connection that members of the local Aboriginal community share with City managed land through the implementation of on-ground initiatives.
- 2.2.1 - Focus on achieving a high level of streetscape amenity in new developments.
- 2.2.3 - Develop, improve and maintain quality parks, playgrounds and public open spaces throughout the City.
- 2.5.2 - Seek the retention of trees in new subdivisions and developments.
- 2.5.6 - Seek improvements to the nature and standard of developments within the City.



Image 4: Rossiter Pavilion - Piara Waters - Photo provided by CoA





Image 5: Bushmead open space - Photographer PLAN E

Relevant City Documents

This document is to be read and used in conjunction with the following City documents (the latest version available from the City of Armadale):

Policies

- Local Planning Policy PLN 2.4 Landscape Feature and Tree Preservation
- Local Planning Policy PLN 2.9 Landscaping
- Policy ENG 6 – Street Trees
- City of Armadale Policy – Engagement and Consultation with the Aboriginal Elders and Community Members

Guidelines, Strategies and Plans

- Parks Facilities Strategy (2019)
- Urban Forest Strategy (2014)
- City of Armadale Health and Wellbeing Plan 2021-2024
- DAIP 2021-2026
- Biodiversity Strategy 2024 - 2029
- City of Armadale Local Heritage Survey, Amended May 2023

Specifications and Drawings

- Landscape Design and Installation Standards
- Landscape Maintenance Standards
- Street Tree Design and Installation Standards
- Street Tree Maintenance Standards

Fact Sheets

- Information Sheet - PSHB Info Sheet
- Information Sheet - Transformer Sites Landscaping
- Information Sheet- Bushfire mitigation measures within POS
- Information Sheet- Bonding for Clearances
- Information Sheet- Verge Landscape Guidelines
- Information Sheet- Street Tree Removal Request



Australian Standards

The POS is to be developed in accordance with the relevant Australian Standards including but not limited to the latest version of the following:

- AS 1428.1 :2009 – Design for Access and Mobility- General Requirements for Access-New Building Works
- AS1428.1 2021 – Design for Access and Mobility- General Requirements for Access-New Building Works
- AS1428.2 1992 – Design for Access and Mobility- Enhances and Additional Requirements - Buildings and Facilities
- AS1428.4.1 2009 – Design for Access and Mobility- Means to assist the orientation of people with a vision impairment - Tactile Ground Surface Indicators
- AS 2890.6 2009 – Parking Facilities – Off-street parking for people with disabilities
- SA HB 198:2014 – Guide to the specification and testing of slip resistance of pedestrian surfaces
- AS 2560:2018/2021 – Sports Lighting Part 1/Part 2
- AS 4970:2009 – Protection of Trees on Development Sites
- AS 4685:2021 – Playground Standards

Other Relevant Documentation

Developers and Consultants are to consider the following external documents when developing their landscape proposals:

- Liveable Neighbourhoods, Department of Planning, Lands and Heritage
- Vegetation Guidelines for Stormwater Biofilters in the South-West of Western Australia, Monash University – Monash Water for Liveability Centre, November 2014.
- ANZECC Guidelines for Primary Industries
- Government of Western Australia. (2014). Public Parkland Planning and Design Guide WA. Perth Western Australia, Department of Sport and Recreation
- Urban Water Management Plans – Guidelines for Preparing Plans, Department of Water 2008



Image 6: Solaris open space, Forrestdale - Photographer PLAN E



Parkland Design Guidelines

The following section of the Landscape Guidelines outlines the design expectations for Public Open Space (POS), including public access ways, within the City of



Image 7: Minnowarra Park: City of Armadale photo. Photo provided by CoA



POS Form, Function, Classification and Embellishment

This section is to be read in conjunction with the City of Armadale’s Parks Facilities Strategy (PFS). The PFS outlines the City’s expectations (including design considerations and level of embellishment) for all new POS proposed within the City.

Parks Facilities Strategy

The form, function and classification of public open space and streetscapes shall be considered in line with the City of Armadale Parks Facilities Strategy (PFS).

Refer to the ‘CoA Standard’ section of the PFS for the following:

- Criteria to determine the classification of POS (Local, Neighbourhood, District / Nature, Recreation, Sport).
- The City’s expectations, design considerations and parameters related to specification, finish, materiality of each ‘facility’ type (i.e. pathways, bridges, signage etc.).
- The Facilities Matrix (refer Table 1) summarises the level of embellishment and infrastructure that is expected of POS based on its classification.

It is very important that the landscape design has considered the Parks Facilities Strategy and associated functions, early in the design process. It is expected that the POS classifications will be reflected from the Structure Planning Stage through to the detailed design.

Each application will be assessed on a case-by-case basis. Should a Developer pursue a higher level of embellishment than outlined in the Facilities Matrix, this is to be discussed and negotiated with the City early in the design process.

Table 1: Parks Facilities Strategy - Facilities Matrix

POS Classification		Size Ha	Pathways	Bridges	Signage	Car Parking	Access Control	Lighting	Play	Bin	Dog Bin	Seating	Shelter	Public Toilet	BBQ	Drink Fountain	Shade Sails	Art	Hard Courts	Fitness	Youth	Community Garden	Men's Shed	Dog Park	Irrigation	Trees	Planting	Scheduled Sports	Kick-about	WSUD
DOS	Sport	8.4	Y	C	Y	Y	Y	Y	Y	Y	C	Y	Y	Y	Y	Y	C	C	Y	C	C	C	C	C	Y	Y	Y	Y	Y	C
	Recreation	2.1	Y	C	C	Y	Y	Y	Y	Y	C	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	C	Y	Y	Y	N	Y	C
	Nature	9.3	C	C	Y	C	Y	N	N	N	N	Y	C	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	C
NOS	Sport	5.0	Y	C	C	Y	Y	Y	Y	Y	C	Y	Y	C	C	C	C	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	C
	Recreation	2.4	Y	C	C	C	Y	C	Y	Y	C	Y	Y	C	Y	Y	C	C	C	C	C	N	N	N	Y	Y	Y	N	Y	C
	Nature	3.4	Y	C	C	C	Y	N	C	N	N	Y	C	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	C
LOS	Recreation	0.8	Y	C	C	N	Y	N	Y	C	C	Y	C	N	N	N	N	N	N	C	N	N	N	N	Y	Y	Y	N	Y	C
	Nature	1.3	C	C	Y	N	Y	N	N	N	N	Y	C	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	C

Y - Yes usually included
 N - Not usually included
 C - On site by site basis



Landscape Design

Considerations

Site Analysis

The overall development masterplan is to respond to the existing site conditions, including but not limited to existing vegetation, trees, prevailing wind, soil type, existing facilities, pedestrian connectivity and interfaces with adjacent areas.

The existing site conditions need to be considered during the early design process. This will be critical contextual information required to be provided to the City during the approval processes.

The following factors are to be considered from a landscape perspective. A number of these factors cross over with City's Environmental considerations and requirements. It is important that the Developer understands and reflects the City's Environmental policies through the master planning and implementation process.

- Existing trees - To be identified, surveyed and protected. The retention of existing trees which provide amenity and/or environmental benefits are to be considered for retention. Existing trees are to be fenced to AS 4970:2009. Refer City Tree Protection and Retention Fact Sheet for details. The City staff will attend site with the Developer and project team to review existing trees.
- Existing vegetation – To be identified, surveyed and protected. The retention of existing areas of vegetation is important. The areas of vegetation identified for protection shall be the best quality on the site.
- Soil – What is the physical characteristics of the soil profile? City of Armadale covers a wide area with many different soil profiles. The soil profile will impact plant species selection and structural considerations.
- Soil Types - Imported soil and soil improvement requirements shall be fit for purpose. If an area is designated to be a certain level of finish and quality, it is required to have the appropriate level of imported soil or soil improvement. Refer to the City for specification.
- Contamination – Did this site have any historic uses that may have contaminated the site?
- Hydrology and Water Sensitive Urban Design - What is the proposed drainage strategy for the development? The developer shall consider that the new development areas within the City are predominantly flat, which has historically resulted in poor drainage outcomes. Drainage swales with batters that encompass the full width of a public open space will not be accepted.
- Road Hierarchy - Consider the road hierarchy and placement of public open space. Public open space adjacent high speed or congested roads are to be limited.
- Salvage and Re-use - Is there anything on site that may be re-used and/or re-purposed? For example grass trees, timber, fallen trees.
- Ground water separation - Consider the depth of separation required between finished surface level and post development maximum groundwater levels. Different open space functions (I.e. playing field turf, small areas of turf, planting etc.) require different levels of separation to the maximum modelled groundwater levels. The open space is to be designed to a level that reflects the proposed function and separation requirements as outlined by the City.



Sense of Place

New developments shall consider the immediate site, local neighbourhood and the broader Armadale context as part of the design process to integrate a Sense of Place into the landscape design.

This may be via the integration of existing landscape elements in the POS (e.g.. Retained trees, dead trees, vegetation, topography), through to reflecting cultural, historical and heritage features into the landscape design.

Should the developer integrate Indigenous culture into the design (for example in art, signage and naming), this shall be in consultation with the Aboriginal Elders of the local area. Evidence of this consultation and agreement should be provided for it to be considered by the City as part fo the design proposals.

Developer to refer to City of Armadale Policy – Engagement and Consultation with the Aboriginal Elders and Community Members for information.



Image 8: Vertu Estate, Harrisdale - Photographer PLAN E



Design for Access and Inclusion

It is important that spaces are designed for all people, of all abilities, all ages, all backgrounds. The space is for everyone and all users shall have equal access to public open space areas.

Section 23 Access to Premises of the Disability Discrimination Act 1992 (DDA) makes it unlawful to discriminate against people with a disability, or their associates, in relation to access to, and use of, premises that the public is allowed to enter or use. 'Premises' is defined very broadly to include structures, buildings and places (whether enclosed or built on or not). This would include for example, public precincts, playgrounds, streetscapes, jetties and footpaths and including falls and gradient, outdoor areas and road crossings. Such infrastructure however is not covered by the Premises Standards and remains covered by the general non-discrimination complaints provisions of the DDA.

The Advisory Note on streetscape, public outdoor areas, fixtures, fittings and furniture, prepared by the Australian Human Rights Commission (February 2013), offers advice on what level of access may reduce the chance of a successful complaint being made using the complaints provisions of the DDA. The Advisory Note is not mandatory and does not have the force of law but provides assistance to understand responsibilities and rights under the DDA and to assist in identifying areas of possible discrimination complaint. The Advisory Notes reference the Australian Standards on access and mobility, and these provide information on how to achieve access for people with a disability in the outdoor environment.



Image 9 : Shipwreck Park, Hilbert - Photographer CoA



Design Factors

In designing all inclusive public open spaces, the following design factors are to be considered as a minimum when considering design for access and inclusion:

- Universally accessible paths to key locations within and around the parkland. Topographical challenges within the public realm may include designing walkways, ramps, that are co located with stairs.
- Handrails, tactiles, mobility support and other indicators / tactual cues as required to Australian Standards.
- Create playspaces that meets the diverse cognitive and physical abilities of children, with play equipments and settings that create a measure of physical challenge while intergrating natural elements to promote tactual stimulation.
- Outdoor furnitures such as seating benches, tables, drink fountains, and barbeques to have accessible features and designed/setout with sufficient circulation space so as to create inclusive environments.
- Strategically positioned accessible parking bays to be in proximity to accessible amenities within the public open space.
- Create spaces for different uses, suitable for different crowd sizes as well as individuals, including spaces for large groups and smaller contemplation spaces.

Developer shall adhere to the requirements of AS1428 (Design for Access and Mobility) and refer to the City of Armadale's Disability and Inclusion Plan for additional information.

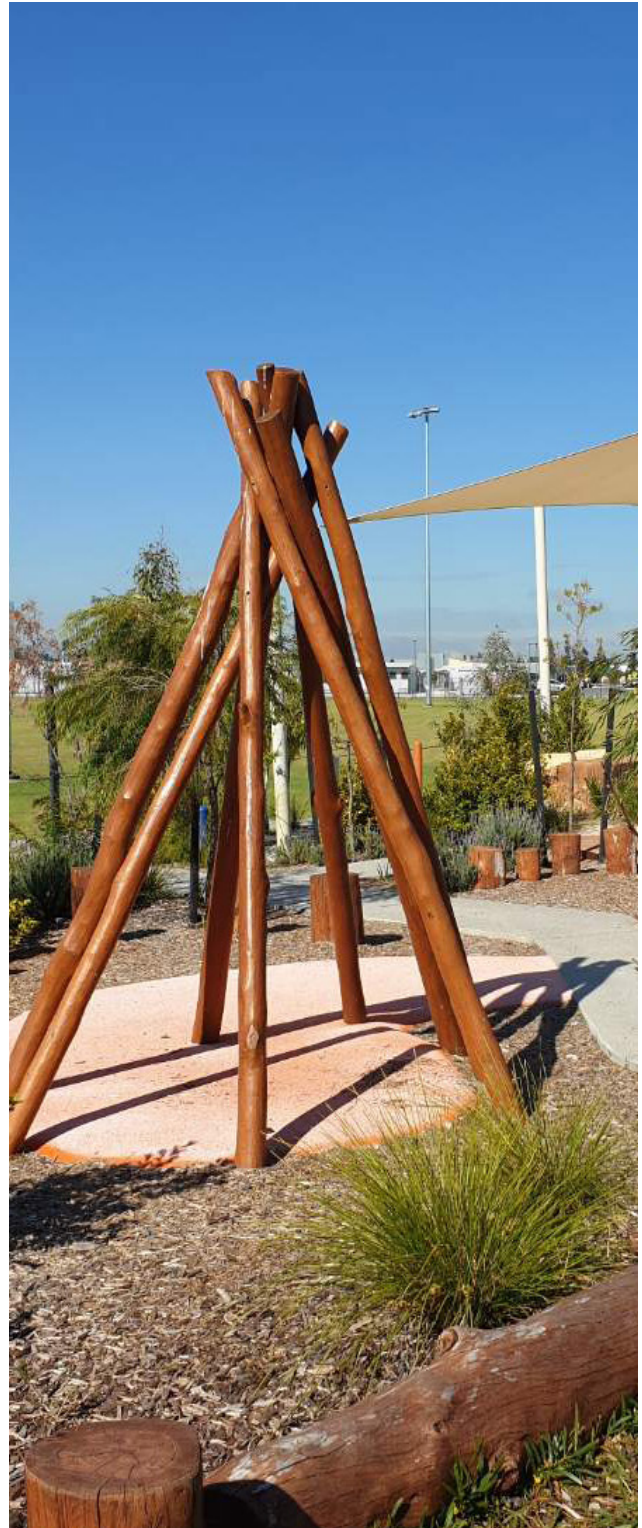


Image 10: Rossiter Pavillion, Piara Waters - Photographer CoA





Image 11: CoA 'Together We Can' Event - Photo provided by CoA

Design for Health and Wellbeing

The overall masterplan for the development shall consider the health and wellbeing of the future community. The City's three key objectives for Health and Wellbeing are:

- Prevent chronic disease through empowering and enabling people to live healthy lives.
- Provide environmental health protection for the community.
- Improve and maintain Aboriginal and Torres Strait Islander health and wellbeing.

These objectives are expanded in the City of Armadale's Health and Wellbeing Plan 2021-2024.

Designing for health and wellbeing in new development areas shall consider the following functions/elements:

- Tree canopy cover – the provision of shade across the new development provides long term benefits to the whole community. Increased tree cover provides shade for people, fauna and flora. Shade shall be provided over paths, playgrounds and streetscapes.
- Pedestrian connectivity – new developments shall provide well connected, shaded pedestrian path networks. This is within the development and connections to broader existing path networks.
- Walking trails – if the new developments include(s) area(s) of retained bushland, can walking trails be integrated?
- Exercise circuits – exercise equipment in public open space provides an opportunity for free fitness. Signage on how to use the equipment shall be integrated. Consideration of equipment for all ages, including Seniors.
- Bicycle facilities – including racks and repair stations promote the use of bike as a transport method.
- Waste disposal – including rubbish bins within key points in POS to promote the responsible disposal of waste.



Design for Biodiversity

The City's Local Biodiversity Strategy's vision is to 'Protect, retain and manage a network of viable local natural areas that support biodiversity and related processes by providing priorities, guidance and integration with land use planning and community involvement'.

In new developments it is important to incorporate/integrate and consider existing vegetation and fauna from the very beginning.

Key elements to consider:

- What is the condition of the existing vegetation?
- What trees and vegetation can be retained and protected?
- What animals currently live there, is there a fauna relocation plan in place?
- What is the local planting mix?
- Can seed be gathered for future use in the development?
- What appropriate fauna habitat can be incorporated into the new development?
- Are there opportunities for 'green linkages' to be incorporated into the design?
- Canopy diversity in species and genus.

Design for Bushfire Preparedness

Establishing development in bushfire prone areas can be problematic and there is a need to consider bushfire risk management measures alongside recreation, environmental, biodiversity and conservation values. Under the State Government's bushfire guidelines, planning for new residential developments should satisfy bushfire protection requirements within the boundaries of the land being developed so as not to impact on the management of reserves and public open spaces.

Therefore in new developments it is important to consider proposed and existing vegetation classifications and ensure appropriate space is considered in the upfront planning process.

Key elements to consider:

- At Structure Plan stage design for hazard separation by including roads to the perimeter of parklands (no nested lots)
- Where revegetation or conservation parklands are proposed, it will be necessary for the development to consider adequate hazard separation from the future vegetation boundary. The future vegetation classification needs to accommodate the post revegetation state of the vegetation.
- The City will not accept a maintenance obligation to maintain a park or natural area to a low threat state. Ensure at an early stage, parklands are classified according to their intended landscaping or excluded entirely without obligation to maintain to a low threat state.



Image 12: Newhaven, Piara Waters - Photographer PLAN E



Streetscape Design Guidelines

The following section of the Landscape Guidelines outlines the broad expectations for Streetscapes within the City of Armadale.



Streetscape

Design Considerations

This section shall be read in conjunction with the City of Armadale's Streetscape Style Guide. The Style Guide outlines road typologies, including typical illustrative plans and sections and material palettes typical.

Residential Verges

Residential verges are the responsibility of the adjacent land owner to install and maintain. The City of Armadale provides detailed information regarding the verge on their website.

Refer to: <https://www.armadale.wa.gov.au/verges> for detailed verge information.

The City is responsible for enforcing verge requirements to ensure the utilities located beneath the ground surface are protected and able to be accessed by the City and utility providers. It is important the proposed landscape meets the requirements set out by the City.

The City of Armadale website provides detailed information regarding [Permissible Verge Treatments](#).

Refer to: <https://www.armadale.wa.gov.au/permissible-verge-treatments> for detailed information

Front Lot Packages

In some instances, the Developer may choose to provide a Front Lot Package to each resident. This package may include the landscaping of the verge. The resident will be responsible for the ongoing maintenance of their verge.

The Developer is to ensure the proposed landscaping of the Front Lot Package meets the requirements set out by the City. The Front Lot landscape proposal(s) shall be considered by the City through the application of a Verge Landscaping Application Form.

Refer to: <https://www.armadale.wa.gov.au/verge-landscape-approval-form>

The Developer is to submit the selection of typical front landscape concepts for the City to endorse suitability of landscape treatments and planting.

Street Trees to Residential Verges

The Developer is responsible for providing street trees to each residential lot. A minimum of 1 tree per front of lot and 2 trees to the side of lots.

The Developer shall refer to City of Armadale Street Tree Policy ENG 6 for detailed information.

Key Elements to consider:

- Trees are to be a mix of evergreen and deciduous species as well as genus to ensure diversity in canopy.
- Street tree masterplan and street tree plans are required to be submitted at key stages as outlined in the Landscape Development Process section of this document.
- There are two endorsed implementation methods for residential street trees:
 1. Prior to the developer seeking clearance, the street trees are installed and a Practical Completion Inspection undertaken with the City. A street tree maintenance bond will be required to be paid, to provide assurance that the developer will water and maintain the street trees for a period of three years. At a 3 year handover inspection with the subdivider, the trees will be verified for their health and condition. If in good condition the outstanding maintenance bond will be released.
 2. Developer opts for the City to install the street trees, subject to the payment of a contribution in accordance with the City's current fees and charges schedule. This payment is required prior to clearance. The trees shall be installed after the majority of houses have been constructed.



Integration of Water Sensitive Urban Design

Integration of Water Sensitive Urban Design (WSUD) to Residential Verges

The City will consider the design and implementation of bioretention tree pits within residential verges. These structures are to be considered in the Urban Water Management Plan (UWMP) submission and subsequent civil and landscape design submissions.

Where tree pits in residential verges are proposed, street trees shall be installed by the Developer at time of construction.

WSUD elements such as verge swales are not permitted within residential verges. The ongoing maintenance and management of this infrastructure is not suited to residential verges.

Integration of WSUD to Medians and Roundabouts

WSUD elements such as swales and tree pits may be integrated into roundabouts and medians.

The capacity of these swales and pits shall be undertaken by the project hydrologist, with designs and capacity included within the UWMP.

The detailed design of these elements shall be included in the subsequent Civil and Landscape Design applications.

WSUD Considerations

The integration of WSUD shall consider the following elements:

- Soil amendment requirements
- Mulch Type
- Irrigation for establishment
- Tree species
- Street tree implementation method
- Kerb profiles - how is the water proposed to enter the swale and tree pits? Consideration of how to slow water and prevent erosion
- Walls are not permitted within road reserves



Image 14: Solaris streetscape, Forrestdale - Photographer PLAN E



Median and Roundabout Design Considerations

Roundabout and Median Design

The landscape of roundabouts, medians and cul-de-sac heads (or similar incidental verges areas that are not adjacent a residential lot) are the responsibility of the Developer to install and maintain, in a similar manner to public open space and public access ways.

The design of roundabouts, medians and other incidental verge areas shall be incorporated into the relevant stage of civil and landscape works.

Key elements to consider:

- These areas are to be irrigated, ensure conduits/sleeves etc. are included in the civil design to accommodate future irrigation connection.
- Provision of trees in medians and roundabouts is essential.
- Maintenance teams require safe places to maintain. Ensure adequate space is available for maintenance to reduce /eliminate any need for traffic management
- WSUD elements are to be captured in the relevant UWMP and subsequent detailed civil and landscape applications.

Residential Long (Side) Verges

Side verges are the responsibility of the adjacent residential land owner to maintain, however there is often a lack of ownership of the side verge (many side verges have a large solid fence limiting visual surveillance, accessibility and ownership)

The Developer may consider how the long verges can be used for a better application, for example:

- Carbays - can a parallel bay be included to the long verge, with an access path to the back of kerb?
- Street trees - ensure there is sufficient space for at least 2 street trees.
- Visual connection - can the long verge be the primary verge for the house, with low or no fencing promoting a sense of ownership between the verge landscape and adjacent lot owner.



Image 15: Vertu streetscape, Harrisdale - Photographer PLAN E



Landscape development

The following section of the Landscape Guidelines provides a list of documentation and expectations at each stage of development, for Public Open Space and Streetscapes (medians and roundabouts).



Image 16: Roley Pools, Roleystone - Photo provided by CoA



Development Process Summary

The City of Armadale encourages early engagement and discussion with the City staff. Early discussions may be in the form of email and phone correspondence, simple butter paper sketches and site visits.

PHASE	KEY REQUIREMENTS RELATED TO LANDSCAPE SUBMISSION	RESPONSIBLE CITY DIRECTORATE	DOC REF.
Structure Plan	<ul style="list-style-type: none"> Landscape Strategy to be included as an Appendix in the Structure Plan Report Existing tree report Fauna/flora 	Development Services (Refer to Technical Services and Community Services for comments)	Page 24
Subdivision Condition(s) Environmental	<ul style="list-style-type: none"> Tree survey Tree retention plan Flora/Fauna surveys Management Plans as conditioned 	Technical Services – Environment (internally refers to Parks Design and Subdivision)	Page 26
Subdivision Condition UWMP	<ul style="list-style-type: none"> Landscape concept plans showing top of water levels. Irrigation Strategy Update POS schedule supporting POS concept 	Technical Services - Subdivision (internally refers to Parks Design and Environment)	Page 28
Subdivision Condition(s) Civil	<ul style="list-style-type: none"> Street tree masterplan Landscape concept plan(s) for comment Tree retention plan 	Technical Services - Subdivision (internally)	Page 29
Subdivision Condition(s) Landscape	<ul style="list-style-type: none"> Detailed landscape drawings Detailed irrigation drawings Tree retention plan 	Technical Services – Parks (internally refers to Environment and Subdivision)	Page 30
Subdivision Condition(s) Landscape Implementation	<ul style="list-style-type: none"> Site start up meeting Key hold points during construction Practical Completion Inspection 12 month DLP inspection Maintenance 	Technical Services – Parks (internally refers to Environment and Subdivision)	Page 32
Subdivision Condition(s) Landscape Handover	<ul style="list-style-type: none"> Pre-handover inspection (3 months prior to handover date) Handover 	Technical Services – Parks (internally refers to Environment and Subdivision)	Page 35
Clearance Application	<ul style="list-style-type: none"> Outstanding Works bond (if POS has not been constructed) Outstanding Maintenance bond (if POS has not be maintained for a minimum of 2 years) Street Tree Bond (if street trees have not been installed and maintained) 	Development Services (Refer to Technical Services for comment)	Page 38

Table 2: Development Process Summary



Other Approval Processes

There may be other functions proposed within the Public Open Space. The Developers and Consultants should be aware that these functions are endorsed through separate application processes. The Developer and Consultant Team will be responsible for obtaining these approvals through the different City departments. This includes the following:

- Public Art
 Contact Community Services
- Estate Signage
 Contact Planning Services
- Sales Signage
 Contact Planning Services
- Community Garden
 Contact Community Services
- Little Libraries
 Contact Community Services
- Street / Park Naming
 Contact Planning Services

The Landscape Guidelines for Public Open Space does not go into detail relating to Planning, Environmental and Civil endorsements required through the Development Process. Developers and Consultants shall contact the relevant City department to obtain information on these processes, expectations and requirements.

The following guides are a minimum requirement for every development in order to satisfy the requirements around developing Public Open Space from a Landscape perspective.



Image 17: Solaris Entry Statement, Forrestdale - Photographer PLAN E





Image 18: Memorial Park, Armadale - Photo provided by CoA



Structure Plan

Minimum submission requirement:

A Landscape Strategy shall be included within the Structure Plan submission. Typically, the Landscape Strategy is to be incorporated within the Structure Plan Report.

POS shall be designed to have a road around the perimeter and nested lots adjacent to POS are not encouraged.

1. Landscape 'Zone' Masterplan - Form

The intent of this plan is to highlight the form and broad function of the POS based on the classifications outlined in the Parks Facilities Strategy (District, Neighbourhood or Local / Recreation, Sport or Nature).

The plan is to:

- Be a suitable standard scale @ A1 and A3. The scale shall be suited to the level of detail required for the Landscape Masterplan.
- This plan may be a diagrammatic highlighting the classification of the POS along with any key features. The plan shall show as a minimum:
 - Retained vegetation and trees (tree arborist report/ site walk prior to structure plan. Refer to note.
 - Drainage areas, 1:1/1:5 and 1:100
 - Turf for (scheduled) sport
 - Local POS – recreation, nature
 - Neighbourhood POS – sport, recreation, or nature

2. Facilities (Assets) Plan - Function

The plan is to:

- Be the same scale as the Landscape 'Zone' Masterplan Plan.
- This plan shall highlight functions (assets and facilities) included within each POS areas. Each function shall be identified as a different symbol.
- The functions to identify are:
 - Playground (age defined)
 - Exercise equipment
 - BBQ / Picnic Node
 - Drink fountain
 - Rubbish Bin
 - Artwork
 - Signage
 - Entry Statement
 - Fencing (conservation)
 - Toilet
 - Fenced off-leash dog area
 - Turf (kick-about). Must be above the TWL for the 1:5 year events.
 - Car embayments
 - Other as required



Image 19: Aspiri, Piara Waters - Photo provided by CoA

3. Street Tree Masterplan

The plan is to:

- Be the same scale as the Landscape 'Zone' Masterplan Plan
- This plan shall identify the proposed tree(s) per street, inclusive of species (Common Name and Latin Name), tree size at installation, irrigation intent.
- Proposed street tree implementation method.

4. POS Landscape Diagrams – Form and Function

The intent of POS landscape plans is to provide a summary of the form and function per POS.

Each plan is to:

- Be at a scale that best portrays the information @ A4 or A3
- The same information as shown on the Zone masterplan.
- This may include landscape concept plans as an underlay to the Zone and Asset information.

5. POS Allocation Plan and Schedule

- This plan is to clearly show the area of restricted v non-restricted POS contributing to the overall POS allocation of the development. This plan shall be based on the POS schedule provided by the Planners and may be prepared by the project Planners.

6. Irrigation Strategy

- Advise on any groundwater licence(s) the Developer has secured for the development
- Provide groundwater testing to confirm the availability of groundwater and the quality of the groundwater

7. Service Strategy

- Advise on proposed transformer locations
- Setbacks for transformers or other services to be considered in relation to their impact on the POS.
- City requires non-combustible zone to be vested as road reserve.

7. Vegetation and Tree Retention Plan

The intent of this plan is to identify the existing trees and vegetation that shall be retained and protected as part of the development.

The plan is to:

- Be to a suitable standard scale @ A1 and A3. The scale shall be suited to the level of detail required for the relevant plans.
- Arborist Report to support the retained vegetation plan. Refer to City of Armadale 'Tree Retention and Protection fact' sheet. https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Planning_and_Land_Use/Tree_Retention_and_Protection_Information_Sheet.pdf
- Include existing trees accurately surveyed and identified (numbered on plan, and tagged on site)
- Trees surveyed shall be trees with environmental and amenity value (i.e.. Native and exotic)
- Trees shall be clearly identified as 'Retained' or 'To be Removed' on the plan
- Consider salvage and re-use – transplant. Re-use of timber

A site visit shall be scheduled with the Developer and the relevant representatives from the City of Armadale (Technical Services) to review the proposed tree and vegetation retention plan on site.

Refer Appendix for example diagrams:

1. Landscape Zone Plan
2. Facilities Assets Plan
3. Street Tree Masterplan
4. POS Landscape Diagram
5. POS Allocation Plan

Important Note:

Depending on the scale of the structure plan, diagrams may be overlaid.



Subdivision Condition

Environmental

Typical Relevant Condition (specific wording may differ for each development):

Prior to the commencement of subdivision works, measures being undertaken to identify any vegetation on the site worthy of retention, including any potential habitat or foraging trees for threatened fauna species, and protection measures implemented to ensure such vegetation is not impacted by subdivision works.

Minimum Submission Requirement (for Landscape):

The following documents/plans are required to be submitted and endorsed as a minimum requirement as part of the above condition.

1. Vegetation and Tree Retention Plan.

The intent of this plan is to identify the existing trees and vegetation that shall be retained and protected as part of the development.

The plan is to:

- Be at a suitable standard scale @ A1 and A3. The scale shall be suited to the level of detail required for the relevant plans.
- Arborist Report to support the retained vegetation plan. Refer to City of Armadale 'Tree Retention and Protection fact' sheet.
- Include existing trees accurately surveyed and identified (numbered on plan, and tagged on site)
- Trees surveyed shall be trees with environmental and amenity value (i.e. Native and exotic)
- Trees shall be clearly identified as 'Retained' or 'To be Removed' on the plan.
- Arborist Report to support the retained vegetation plan.

A site visit shall be scheduled with the Developer and the relevant representatives from the City of Armadale (Technical Services) to review the proposed tree and vegetation retention plan on site.

It is important that the tree retention and removal data is coordinated with the Civil and Landscape Submissions. The civil plans shall clearly identify trees to be retained and protected.

The City expects all trees identified for retention to be protected to AS 4970:2009 Protection of Trees on Development Sites.

SUBMISSION TO:

The above information shall be submitted to the Design Services Team (Technical Services).

Please submit the 'Application for assessment of civil and landscaping plans' to info@armadale.wa.gov.au.

https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Design_and_Construction/Civil_Works_S170_Intial_App_Form_Rev1.1%2824Jan18%29.PDF

Refer to City of Armadale Tree Retention and Protection Fact Sheet - https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Planning_and_Land_Use/Tree_Retention_and_Protection_Information_Sheet.pdf

Important Note:

The Developer is advised that the submission and endorsement of the relevant Environmental Plans (including but not limited to: tree and vegetation retention plan, fauna relocation, flora surveys, wetland management plans, foreshore management plans) is required prior to any works commencing on site.

This document does not go into detail associated with the requirements of the above plans. The Developer shall contact City of Armadale Environmental Team on 9394 5000 for information relating to other Environmental subdivision conditions.



Subdivision Condition

Environmental

Typical Relevant Condition (specific wording may differ for each development):

i) Prior to the commencement of subdivision works a foreshore/ environmental/ bushland/tree/wetland/wildlife protection management plan for is to be prepared and approved to ensure the protection and management of the sites environmental assets with satisfactory arrangements being made for the implementation of the approved plan.

ii) A revegetation plan being prepared, approved and implemented for the revegetation of or the area shown on the relevant plan, with appropriate native species to the specifications of the Department of Water and Environmental Regulation OR Department of Biodiversity, Conservation and Attractions OR Local Government.

Minimum Submission Requirement (for Environment):

The following documents/plans are required to be submitted and endorsed as a minimum requirement as part of the above condition.

1. Management Plans

To satisfy condition i and ii above the Developer is required to submit the relevant Management Plan to the City of Armadale:

- Wetland Management Plan
- Bushland Management Plan
- Foreshore Management Plan
- Revegetation Plan
- Wildlife Protection and Relocation Plan

2. Construction Management Plan

Where a Construction Management Plan is required to be prepared and implemented prior to subdivision works commencing. Developer shall refer to the City's Information Sheet for information.

Refer to City of Armadale Environmental Management Plans Information Sheet.

Refer to City of Armadale Wildlife Protection and Relocation Plan - https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Planning_and_Land_Use/Information_Sheet_-_Preparation_of_a_Wildlife_Protection_and_Relocation_Plan.pdf

Refer to City of Construction Management Plan - https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Environmental_Management/Information_Sheet_Construction_Environmental_Mgmt_Plan.pdf



Subdivision Condition

Urban Water Management Plan

Typical Relevant Condition (specific wording may differ for each development):

Prior to the commencement of subdivision works, an urban water management plan is to be prepared, approved and implemented, in consultation with the Department of Water and Environmental Regulation, consistent with any approved Local Water Management Strategy/Drainage

Minimum Submission Requirement (for Landscape):

The following landscape documents/plans are required as a minimum requirement as part of the UWMP submission:

1. Landscape Masterplan

Overall Landscape Masterplan showing the concept plans for each of the POS areas, inclusive of a concept for each POS impacted by drainage.

The landscape masterplan shall reflect the intent of the approved Landscape Strategy submission.

2. POS Calculation Update (As an updated POS allocation plan and POS schedule)

Refer Item 5 under Structure Plan for requirements.

3. Landscape Concept Plans

The intent of the landscape concept plans is to show the impact of the proposed drainage on the POS and its form + function.

The concept plans shall be a minimum 1:250@ A3 and shall identify:

- POS classification
- Proposed functions of the POS
- The top of water level (TWL) for the 1:1, 1:5 and 1:100 rain events (TWL)
- The average annual maximum groundwater level (AAMGL) anticipated post development in relation to the proposed landscape levels.
- Retained vegetation / trees within the POS, including base levels of the trees.
- Existing contours and proposed contours
- Summary table – drainage volumes, areas and TWL (by project hydrologist)

Developers and Consultants shall consider the following in their proposal:

- Turf to be proposed above the TWL of the 1:5 year event and have sufficient clearance to ground water.
- Unrestricted POS shall provide an open space function for the community, and the form of the functional space is an important consideration

- Hardstand infrastructure/playground/picnic nodes, etc. to be positioned above the 1:5 event.

4. Irrigation Strategy

The irrigation strategy shall outline the overall development irrigation proposal including:

- Proposed water source(s)
- Proposed water licence, including a copy of the licence within the UWMP
- Water usage strategy showing how the volume of water will sufficiently irrigate the proposed landscape
- Water usage to be calculated on 7,500kL/ha/yr
- Mainline Strategy and bore strategy

If the bore(s) has been drilled, provide:

- Water analysis results: including iron, sulphate reducing bacteria, salt as a minimum.
- For information, Form 2 – Information on a completed non-artesian well, as per Department of Water and Environmental Regulation. Refer to <https://www.wa.gov.au/government/publications/form-2-information-completed-non-artesian-well-bore-log> - The developer is responsible for submitting this form to DWER.
- If the bore has not been drilled, this information will be required on completion of the bore drilling.

SUBMISSION TO:

The above information shall be included in the UWMP.

Please submit the 'Application for assessment of Water Management Documents' to info@armadale.wa.gov.au.

https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Design_and_Construction/Water_Man_Initial_App_Form_Rev1.1%2824Jan18%29.PDF



Subdivision Condition

Civil

Typical Relevant Condition (specific wording may differ for each development):

A Landscaping Master Plan & Management Strategy which identifies/specifies the street trees to be planted in each street by the subdivider being prepared and implemented to the satisfaction of the WAPC and to the specifications of the local government. The subdivider shall install and maintaining street trees for three years, to the satisfaction of the WAPC.

Engineering drawings and specifications are to be submitted and approved, and subdivision works undertaken in accordance with the approved plan of subdivision, engineering drawings and specifications to ensure that:

- Street trees

Minimum Submission Requirement (for Landscape):

The following documents/plans are required to be submitted and endorsed as a minimum requirement as part of each stage of civil submission:

1. Street Tree Plan.

- To be submitted in line with the relevant civil stage
- Plans shall be to a suitable standard scale @ A1 and A3 – 1:250 minimum
- Plans to include road names, scale bar and north arrow
- Plans shall show civil services, including street lights
- This plan shall identify the proposed trees inclusive of species (Common Name and Latin Name), tree size at installation
- This plan shall outline the proposed irrigation intent
- This plan shall outline the proposed installation approach (i.e.. upfront installation or other)

2. Landscape Concept Plans

(Where POS is within the civil stage)

The concept plans for POS and streetscapes shall be a minimum 1:250@ A3 and shall identify:

- POS classification
- Streetscape classification
- Proposed function of the POS
- The top of water level (TWL) for the 1:1, 1:5 and 1:100 rain events (TWL), where applicable
- The average annual maximum groundwater level (AAMGL) anticipated post development in relation to the proposed landscape levels.
- Retained vegetation / trees within the POS, including base levels of the trees.

Important Notes:

In some instances, the concept plans may not be required where they have previously been submitted with the UWMP, and the base information has not changed. Should civil, hydrology and planning information have changed since the UWMP submission, the concept plans shall be re-submitted within the civil application.

An updated POS schedule is required to be submitted to the City Planning Department, in conjunction with Civil submission which provides detailed POS information (TWL for rain events, retained vegetation and POS areas).

SUBMISSION TO:

The above information shall be submitted to the Design Services Team (Technical Services).

Please submit the 'Application for assessment of civil and landscaping plans' to info@armadale.wa.gov.au.

https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Design_and_Construction/Civil_Works_S170_Intial_App_Form_Rev1.1%2824Jan18%29.PDF



Subdivision Condition

Landscape Detailed Design/Documentation

Typical Relevant Condition (specific wording may differ for each development):

- i) - A Landscaping Master Plan & Management Strategy which identifies/specifies the street trees to be planted in each street by the subdivider being prepared and implemented to the satisfaction of the WAPC and to the specifications of the local government. The subdivider shall install and maintaining street trees for three years, to the satisfaction of the WAPC.
- ii) - Arrangements being made for the proposed public open space to be developed by the landowner/applicant and maintained for two years through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and to the specifications of the local government.

The above conditions relate to the detailed design, documentation, implementation, maintenance and handover of the landscape of Public Open Space and Streetscapes. The following sections (detailed design/documentation, implementation and handover) relate to the different stages of these conditions.

Minimum Submission Requirements (for Landscape Detailed Design and Documentation):

The following documents/plans are required to be submitted and endorsed as a minimum requirement to satisfy the above conditions:

1. Street Tree Plan

Refer Item 1 under Subdivision Condition - Civil for street tree plan requirements. A street tree plan is required to be submitted as part of the relevant Civil Stage application process.

2. Arborist Report and Tree Retention Plan

An arborist report is to be submitted with the detailed landscape plans for any trees that are proposed to be retained within the POS and Streetscapes. The arborist report is to identify the following:

- Trees to be retained.
- Trees to be accurately surveyed and identified (numbered on plan, and tagged on site).
- Works required to existing trees imminently.
- Future tree works.
- Refer to City of Armadale 'Tree Retention and Protection fact' sheet. https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Planning_and_Land_Use/Tree_Retention_and_Protection_Information_Sheet.pdf

3. Detailed Landscape Plans, Including Construction Details

The landscape plans are to:

- Be prepared by a qualified Landscape Architect or person with an equivalent similar degree
- Be prepared in AutoCAD or similar program
- Plans shall be to a suitable standard scale @ A1 and A3. The scale shall be suited to the level of detail required for the relevant plans.
- Plans to include road names, scale bar and north arrow
- Plans to include relevant, coordinated base data - including current civil base plans and tree retention/vegetation retention surveys
- Drawings required for submission:
 - Cover Page
 - Grading Plan, showing existing and proposed contours/spot levels
 - Surfaces and Finishes plan, showing the extent of different surfaces and materials. Locations of furniture, play, shelters etc. shall be shown on this plan. The plan shall reference the relevant details
 - Planting plan, showing proposed plant species, density, numbers and locations for all planting (including trees and existing trees)
 - Relevant construction details (plans and sections) to suitably represent the proposed design.

Important Note:

An updated POS schedule is required to be submitted with landscape detailed design and documentation at the subdivision stage. If variances to restricted and unrestricted area provision in individual POS areas at structure plan stage are proposed, the schedule is required to be submitted to the City's Planning Department along with detailed landscape information (TWL for rain events, retained vegetation and proposed landscape treatments) for further advice and monitoring of staged POS area provision.

Refer Item 5 under Structure Plan for requirements.

- The drawing set shall ensure that all 'off the shelf' elements such as proposed furniture, shelters, playgrounds, BBQ, toilets are detailed in the drawing set. This shall include the proposed supplier, model number/ code number, and image/line drawing of the proposed element. Any selection criteria shall be identified (for example material selections, finish selections, installation method etc.).
- All plans shall clearly show existing trees to be retained and protected. Trees to be protected to AS 4970:2009.
- Services or Electrical drawing set

4. Detailed Irrigation Plans, Including Construction Details

The irrigation plans are to:

- Be prepared by a qualified irrigation designer or person with an equivalent similar degree
- Be prepared in AutoCAD or similar program
- Plans shall be to a suitable standard scale @ A1 and A3. The scale shall be suited to the level of detail required for the relevant plans.
- Plans to include relevant, coordinated base data - including current landscape base plans and tree retention/vegetation retention surveys
- Drawings required for submission:
 - Cover Page
 - Demolition Plan (if required)
 - Irrigation Plan showing as a minimum water supply point of connection, bore, cabinet, electrical connection, and all required irrigation infrastructure.
 - Mark-up of long term irrigation zones and short term irrigation zones (to be hardened and turn off prior to handover)
 - Details
 - Bore information – pump
 - Bore schedule – run times/stations.
 - Separate meters for each user (or sub-meter)

Where the irrigation may be a Design and Construct approach. The irrigation design is required to be submitted for approval, and endorsed prior to works commencing on site.

5. Landscape and Irrigation Opinion of Probable Cost - Pre Tender Estimate

A current landscape and irrigation opinion of probable cost shall be submitted with the application or prior to the application for Clearance.

Should any outstanding works bonds or maintenance bonds be required, they will be prepared on the basis of the pre-tender construction estimate or tender award value (whichever is the most current).

This cost accurately reflects the expectations of the associated public open space and streetscapes, to which the outstanding works bond will apply.

Important Notes - Design:

- A - Refer back to the Parks Facilities Strategy
- B - Refer to the City of Armadale typical irrigation specifications and typical details during this stage.

Important Note for future handover considerations:

The Developer is advised that the City will only accept handover of fully completed POS, that is the POS shall be completed from back of kerb, to back of kerb. Partial handover of open space will not be accepted, Any Environmental revegetation requirements shall be completed prior to acceptance of handover.

SUBMISSION TO:

The above information shall be submitted to the Design Services Team (Technical Services).

Please submit the 'Application for assessment of civil and landscaping plans' to info@armadale.wa.gov.au.

https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Design_and_Construction/Civil_Works_S170_Intial_App_Form_Rev1.1%2824Jan18%29.PDF



Subdivision Condition

Landscape Implementation (Street trees)

Typical Relevant Condition (specific wording may differ for each development):

i) - A Landscaping Master Plan & Management Strategy which identifies/specifies the street trees to be planted in each street by the subdivider being prepared and implemented to the satisfaction of the WAPC and to the specifications of the local government. The subdivider shall install and maintaining street trees for three years, to the satisfaction of the WAPC.

Minimum Requirements for Street Tree Implementation:

The above condition requires the Developer to supply, install and maintain the street trees within new development areas. The City has two approved methods for installation as outlined in ENG 6 – Street Trees. The implementation method for the street trees shall be determined early in the Development process and ideally outlined in the Structure Plan Landscape Strategy.

Option 1 - Subdivider to Supply and Install the Trees Themselves.

The developer may choose to supply, install and maintain the street trees themselves in accordance with an approved street tree masterplan.

Prior to issuing Clearance:

- The City (with the Developer) will undertake a PC inspection of the street trees to verify their installation
- A street tree maintenance bond will need to be paid by the Developer, to provide assurance the Developer will water and maintain the trees for 3 years. Payment is in accordance with the City's Fees and Charges Schedule.
- A 3 year handover inspection between the Developer and the City will be undertaken to verify that all street trees have survived the three year maintenance period and are in good condition.

During the 3 year maintenance period the City will require the following:

- 12 month inspection, with a tree replacement schedule to be prepared and implemented
- 24 month inspection, with a tree replacement schedule to be prepared and implemented
- 6 monthly report (Tree quality - dead, alive, replace, good)

Option 2 - City to Supply, Install and Maintain Trees Through Payment by Developer.

The developer may choose for the City to install and maintain the street trees.

This option is subject to the payment of a contribution to the City covering all street trees within the relevant stage of subdivision. Payment is in accordance with the City's Fees and Charges Schedule.

Prior to issuing Clearance:

- The payment of a street tree installation and maintenance bonds



Subdivision Condition

Landscape Implementation (POS)

ii) - Arrangements being made for the proposed public open space to be developed by the landowner/applicant and maintained for two years through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and to the specifications of the local government.

Minimum Requirements for POS (PAW/streetscapes) Implementation:

The above condition requires the Developer to construct and maintain the public open space areas within the new development. This includes all public open space and streetscapes (medians, roundabouts and verge areas that don't form part of residential /commercial verges).

The following documents/inspections are required as a minimum to satisfy the above condition:

1. Construction Site Start Up Meeting

City of Armadale Parks Design Landscape Construction Officer to attend site start up meeting with the Superintendent Representative and Construction Representative.

2. Key Hold Points During Irrigation and Landscape Construction

City to be invited to attend site at the key milestones as outlined within the City's Landscape Design and Installation Standards Factsheet.

-

3. Practical Completion Inspection

The City shall attend a PC site visit, to acknowledge a date of Practical Completion for the associated POS and streetscapes. This will determine the proposed date of handover between the Developer and the City.

- Superintendent's Representative to organise the Practical Completion inspection (within 7 days), inviting the City of Armadale Landscape Construction Officer. The City of Armadale contact will forward to the relevant internal CoA parties.
- The City may request to see the irrigation system functioning at the PC inspection. Superintendent to organise this with the relevant contractor.
- The City shall compile a list of items for immediate action and items to be rectified prior to handover.
- The City will issue an acknowledgement of Practical Completion, including proposed handover date.
- Superintendent's Representative to collate and issue the list of items on the City of Armadale Practical Completion checklist (refer attached Practical Completion Checklist) within 2 weeks of the Practical Completion inspection.
- Refer to the City's Landscape Maintenance Specification Factsheet.

Refer to City of Armadale Practical Completion Checklist - https://www.armadale.wa.gov.au/sites/default/files/assets/documents/docs/Planning_and_Land_Use/PC.pdf



4. Maintenance Period Inspections and Expectations

The above condition requires the Developer to maintain the POS and streetscapes to the specification of the City of Armadale.

The maintenance contractor is to refer to the City of Armadale Maintenance Specification Facesheet to understand the minimum expectations relating to maintenance of public open space and streetscapes.

The Developer will be responsible for the maintenance of the POS and streetscapes for the period outlined in the relevant WAPC condition. During the maintenance period, the developer shall submit a number of documents and be expected to attend site inspections as outlined in the City's Landscape Maintenance Specification Factsheet.

5. Environmental Inspections

Refer to the relevant Environmental Management Plans for maintenance expectations within environmental areas (for example foreshores, wetlands and revegetation areas).

Important Note:

Check with your environmental approvals for any reporting obligations to meet the specific completion criteria for natural areas.



Image 20: Sienna Woods play space, Haynes - Photographer PLAN E



Subdivision Condition

Landscape Handover (Street Trees)

Typical Relevant Condition (specific wording may differ for each development):

i) - A Landscaping Master Plan & Management Strategy which identifies/specifies the street trees to be planted in each street by the subdivider being prepared and implemented to the satisfaction of the WAPC and to the specifications of the local government. The subdivider shall install and maintaining street trees for three years, to the satisfaction of the WAPC.

Minimum Requirements for Street Tree Implementation:

The above condition requires the Developer to install and maintain street trees for a minimum of three years.

Option 1 - Developer to Supply and Install the Trees Themselves.

If the Developer selected Option 1 (Developer to supply, install and maintain the street trees), a handover process is required between the Developer and the City. This shall be as per the time frame outlined in the WAPC condition.

1a. Pre-Handover Site Meeting

The City shall attend a pre-handover meeting, to acknowledge the upcoming handover of the street trees within the relevant stage(s) of a development.

The intention of the pre-handover site meeting, is for the City to inspect and verify that all street trees have survived and thrived during the 3 year maintenance period.

Any missing trees shall be replaced at a cost to the Developer.

Handover date shall be nominated at this inspection (a minimum of 3 months from the pre-handover inspection, but no longer than 6 months).

1b. Handover Site Meeting

The City shall attend a handover meeting, to acknowledge the completion of the street tree implementation for the relevant stage(s) of development.

At this date, the street trees become the responsibility of the City in perpetuity.

Option 2 - City to Supply, Install and Maintain Trees Through Payment by Developer.

If the Developer selected Option 2 (City supply, install and maintain street trees) and paid the relevant contribution this condition will be satisfied.

Data Collection:

At time of PC tree data is to be supplied in accordance with the [City's Tree Specification \(To be updated\)](#)



Subdivision Condition

Landscape Handover (POS & Streetscapes)

ii) - Arrangements being made for the proposed public open space to be developed by the landowner/applicant and maintained for two years through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and to the specifications of the local government.

Minimum Requirements for POS (PAW/streetscapes) Implementation:

The above condition requires the Developer to install and maintain the public open space areas within the new development. This includes all public open space and streetscapes (medians, roundabouts and verge areas that don't form part of residential /commercial verges).

The following documents/inspections are required as a minimum to satisfy the above condition:

1. Pre-Handover Meeting

(Required 3 Months Prior to the Handover Date)

The City shall attend a pre-handover meeting, to acknowledge the upcoming handover of the POS and streetscape.

The intention of the inspection is for the City to outline any outstanding items, outstanding works and expectations to accept Handover on the date nominated at this inspection.

Superintendent's Representative to organise the Pre-handover inspection, inviting the relevant City of Armadale Landscape Construction Officer. The City of Armadale contact will forward to the relevant internal CoA parties.

- The City will request to see the irrigation system functioning at the pre-handover inspection. Superintendent to organise this with the relevant contractor.
- Following the Pre-handover inspection the City will issue an acknowledgement of Pre-handover, including proposed handover date and a list of items for items to be rectified prior to handover.
- Superintendent's Representative to collate and issue the list of items on the City of Armadale Handover checklist (refer attached Handover

2. Documentation Submission

- Playground Safety Audit – to be completed three months prior to handover. Any immediate actions shall be undertaken by the Developer. Audit to be undertaken by accredited playground auditor.
- Arborist Report – to be completed three months prior to handover. Any immediate actions shall be undertaken by the Developer. Arborist report to be undertaken by
- Confirm City has the As-constructed data (to be issued at PC) – inclusive of ASpec information, DWG and PDF. If the City does not have this on record. Provide.
- Electrical Completion Certificates and as-con drawing.
- Structural Report is required for any items that require a Building permit
- Dispose

Important Notes:

The pre-handover defect list is valid for 4 months from the pre-handover inspection date.

A new pre-handover inspection will be required after 6 months

Superintendent's Representative to collate and issue the list of items on the City of Armadale Handover checklist



3. Services Account Handover

Utility Accounts to be transferred to the City of Armadale

- Electrical
 - Provide address, meter number and Synergy Account Number to the City of Armadale
 - City of Armadale to contact Synergy and arrange for account to be transferred to City of Armadale.
 - Irrigation / Electrical cubicle to be keyed to City of Armadale requirements
- Water
 - Provide address, meter number and Water Corporation Account Number to the City of Armadale
 - City of Armadale to contact Water Corporation and arrange for account to be transferred to City of Armadale
- Irrigation / Electrical cubicle
 - To be keyed to City of Armadale requirements

4. Bore / Irrigation Infrastructure.

- Provide water usage records over the past watering year to City of Armadale
- Groundwater allocation to be transferred to the City of Armadale. Volume to be agreed with the City of Armadale prior to transfer.
- Developer to complete the Form 4T Application available on the WA government website:
- Refer <https://www.wa.gov.au/government/publications/form-4t-application-transfer-of-licence-or-entitlement>
- Water transfer fee to be paid by the Developer
- Ensure extent of short term irrigation has been hardened and turned off prior to handover

Note: Ensure extent of short term irrigation has been hardened and turned off prior to handover

5. Handover Meeting

The City shall attend the handover meeting, to acknowledge handover of the POS and streetscape from the Developer to the City.

- Superintendent's Representative to organise the Handover inspection, inviting the relevant City of Armadale Landscape Construction Officer. The City of Armadale contact will forward to the relevant internal CoA parties.
- The City will only accept handover if they have received the required documentation, utilities are transferred and ground water licence application submitted. All defects outlined at the pre-handover inspection, within the playground audit and arborist report are required to be completed prior to the handover inspection.
- The City will issue an acknowledgement of Handover should the above criteria be met. The maintenance responsibility is then transferred to the City.
- Arrange and coordinate Shared access to the bore with The City.

Important Note:

The Developer is advised that the City will only accept fully completed POS, that is the POS shall be completed from back of kerb, to back of kerb. Partial handover of open space will not be accepted.



Clearance Process

Typical Relevant Condition (specific wording may differ for each development):

i) - A Landscaping Master Plan & Management Strategy which identifies/specifies the street trees to be planted in each street by the subdivider being prepared and implemented to the satisfaction of the WAPC and to the specifications of the local government. The subdivider shall install and maintaining street trees for three years, to the satisfaction of the WAPC.

ii) - Arrangements being made for the proposed public open space to be developed by the landowner/applicant and maintained for two years through the implementation of an approved landscape plan providing for the development and maintenance of the proposed public open space in accordance with the requirements of Liveable Neighbourhoods and to the specifications of the local government.

The above conditions relate to the detailed design, documentation, implementation, maintenance and handover of the landscape of Public Open Space and Streetscapes. The following sections (detailed design/documentation, implementation and handover) relate to the different stages of these conditions.

A Developer will seek Clearance during the stages of the development (typically aligning with the civil stages). The relevant subdivision conditions on the WAPC approval must be completed, approved and endorsed by the relevant 'clearing Authority' prior to Clearance being achieved.

The City prefers all conditions to be achieved/completed prior to Clearance being awarded.

Where a landscape condition has not been completed or endorsed, the City may accept an outstanding works bonds/maintenance bonds. This is at the discretion of the City and will be reviewed with every application.

In relation to the above landscape related conditions, the following bond process may apply. It is important to liaise with the City's Parks Design department to ensure that this approach is agreeable to all parties.

1. Outstanding Works Bond for Landscape Works in POS and Streetscapes

- Developer to provide pre-tender or construction value of the landscape and irrigation works to the City
- The value of the outstanding works bond will be based on an agreed value of works
- The % of the bond is in accordance with the City's Fees and Charges Schedule, plus an administration fee.

2. Outstanding Maintenance Bond

- Developer to provide pre-tender or construction value of the landscape and irrigation works
- The value of the outstanding works bond will be based on an agreed value of works
- The % of the bond is in accordance with the City's Fees and Charges Schedule.

3. Street Tree Bond

- Developer to provide number of trees to be installed in the relevant stage. This shall be supported by a relevant approved street tree plan.
- The value of the outstanding works bond will be based on an agreed number of street trees.
- The value (per tree) is in accordance with the City's Fees and Charges Schedule, plus an administration fee.

4. Street Tree Maintenance Bond

- Developer to provide number of trees to be installed in the relevant stage. This shall be supported by a relevant approved street tree plan.
- The value of the outstanding works bond will be based on an agreed number of street trees.
- The value (per tree) is in accordance with the City's Fees and Charges Schedule.

Refer to <https://www.armadale.wa.gov.au/information-sheets-forms-and-fees-building-planning#toc-5> for CoA Information sheets in condition clearance process and bond retention.

5. Deed of Agreement

In all instances the above bonds will be submitted with a signed deed. The template Deed of Agreement is available as an Appendix to this document.

A partially executed document is to be provided in wet copy to the City for Full Execution

A fully executed agreement is required prior to the City recommending to WAPC that the condition is to be cleared.

6. Bank Guarantees

Following an executed Deed of Agreement, the City will raise an invoice and provide to the applicant to support the payment of the bond. The bond shall be in the form of a Bank Guarantee.

Bank Guarantees are required to be:

- From a recognised financial institution,
- Free of spelling errors,
- Titled to reference the subdivision's number, stage, and condition,
- Titled to reflect the name, and version of approved plan,
- Reference the category of bond (hard landscape, soft landscape or maintenance), and:
- Without expiry date.
- For information, Form 2 – Information on a completed non-artesian well, as per Department of Water and Environmental Regulation. Refer to <https://www.wa.gov.au/government/publications/form-2-information-completed-non-artesian-well-bore-log>

Important Notes:

An updated POS schedule and POS allocation plan is required to be submitted to the City Planning Department, in conjunction with the Clearance application to support the Civil and Landscape conditions.

Other conditions described in this document under 'Environment, Civil or UWMP' are reviewed by other departments within the City of Armadale. Contact the relevant department to confirm bonding requirements for those conditions.

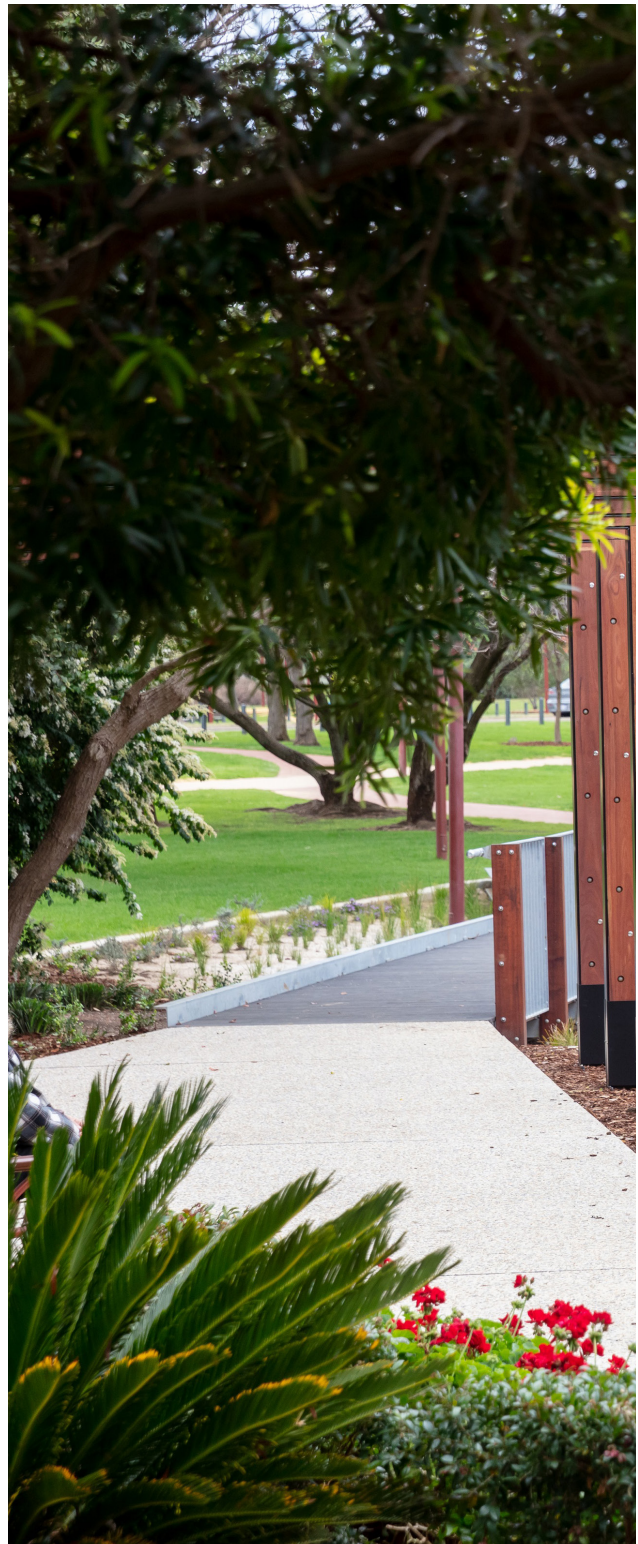


Image 21: Minnowarra Park, Armadale - Photo provided by CoA



Appendix Images Tables



Image 22: Rossiter Pavilion - Piara Waters - City of Armadale photo - Photographer Unknown

Appendix

A - Landscape Zone Plan

B - Assets Plan

C - Street Tree Masterplan

D - Landscape Concept Plan

E - POS Allocation Plan

F - Information Sheets and Standards

Landscape Design and Installation Standards

Landscape PC form and checklist

Landscape Maintenance Standards

Landscape Handover Application Form

Street Tree Design and Installation Standards

Street Tree PC form and checklist

Street Tree Maintenance Standards

Street Tree Handover Application Form

Information Sheet - Bonding for Clearances

Information Sheet - Verge Guidelines and Front Lot packages

Image List

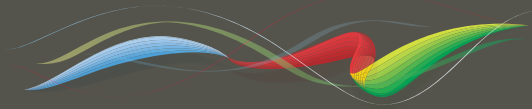
1. Cover - Minnowarra Park, Armadale. Image provided by CoA
2. Acknowledgement of Country - Champion Lakes - Image provided by City of Armadale
3. Joe Saunders Park, Champion Lakes - Image provided by PLAN E
4. Rossiter Pavilion - Piara Waters Image provided by City of Armadale
5. Bushmead open space - Image provided by PLAN E
6. Solaris open space, Forrestdale - Image provided by PLAN E
7. Minnowarra Park bridge, Armadale - Image provided by City of Armadale
8. Vertu Estate, Harrisdale - Image provided by PLAN E
9. CoA 'Together We Can' Event - Image provided by City of Armadale
10. Newhaven, Piara Waters - Image provided by PLAN E
11. Myella Estate, Waneneroo - Image provided by PLAN E
12. Solaris streetscape, Forrestdale - Image provided by PLAN E
13. Vertu streetscape, Harrisdale - Image provided by PLAN E
14. Roley Pools, Roleystone - Image provided by City of Armadale
15. Solaris Entry Statement, Forrestdale - Image provided by PLAN E
16. Memorial Park, Armadale - Image provided by City of Armadale
17. Aspiri, Piara Waters - Image provided by City of Armadale
18. Sienna Woods play space, Haynes - Image provided by PLAN E
19. Minnowarra Park, Armadale - Image provided by City of Armadale
20. Rossiter Pavilion - Piara Waters Image provided by City of Armadale

Tables

1. Parks Facilities Strategy - Facilities Matrix
2. Development Process Summary



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Landscape 'Zone'

Masterplan – Form

LEGEND

PFS CLASSIFICATION

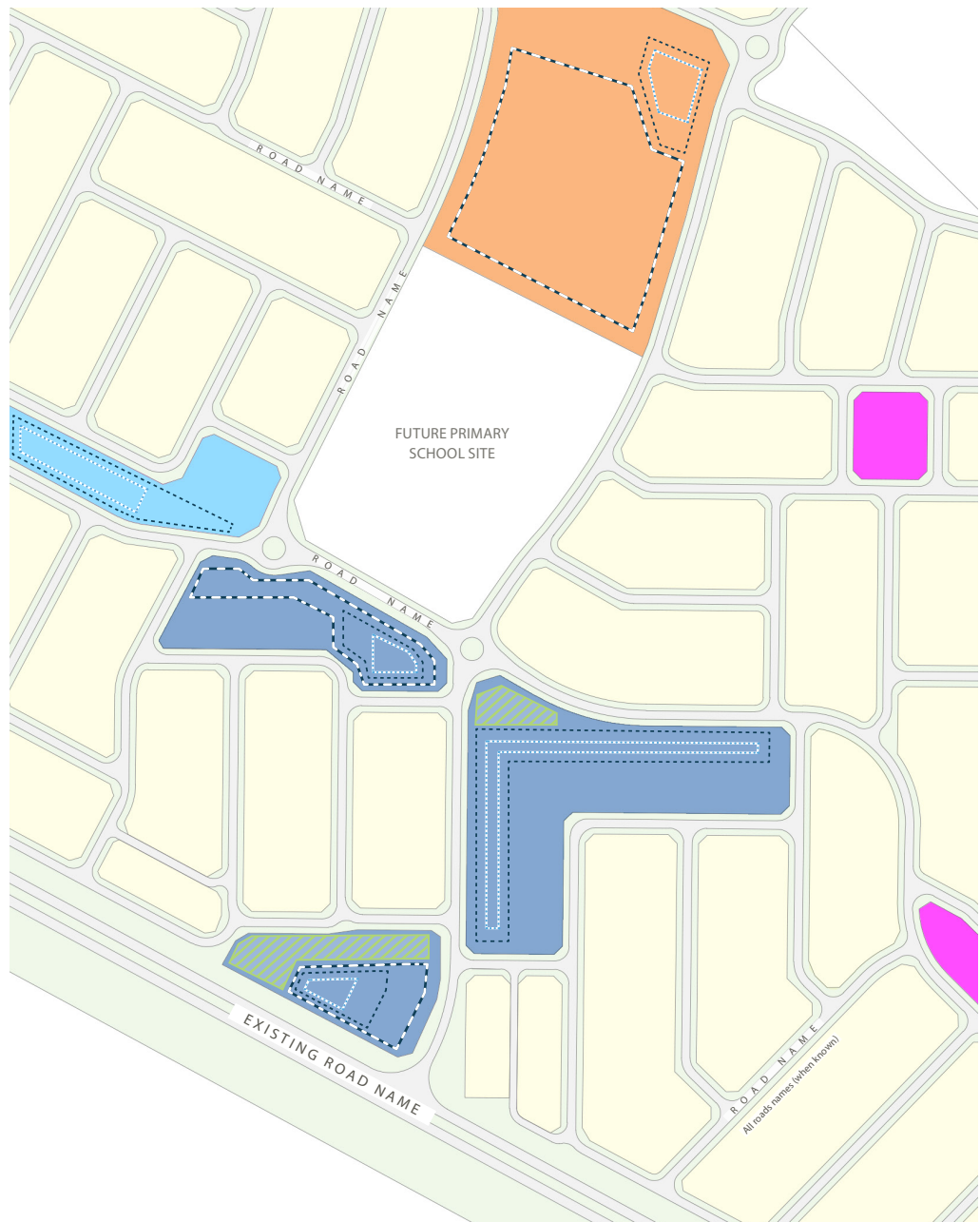
- DOS sport
- DOS Recreation
- DOS Nature
- NOS sport
- NOS Recreation
- NOS Nature
- LOS Recreation
- LOS Nature

DRAINAGE

- 1:1
- 1:5
- 1:100

TREES

- Existing Trees to be Retained



Landscape Zone Masterplan

Development Name

Scale x:xxx @ AX

North Arrow

This plan is intended as a guide only to demonstrate the information required to be shown on this plan type. A conceptual masterplan may be provided as a layer to this plan, however it shall be faded back to ensure the form and zones of the POS are clearly legible.



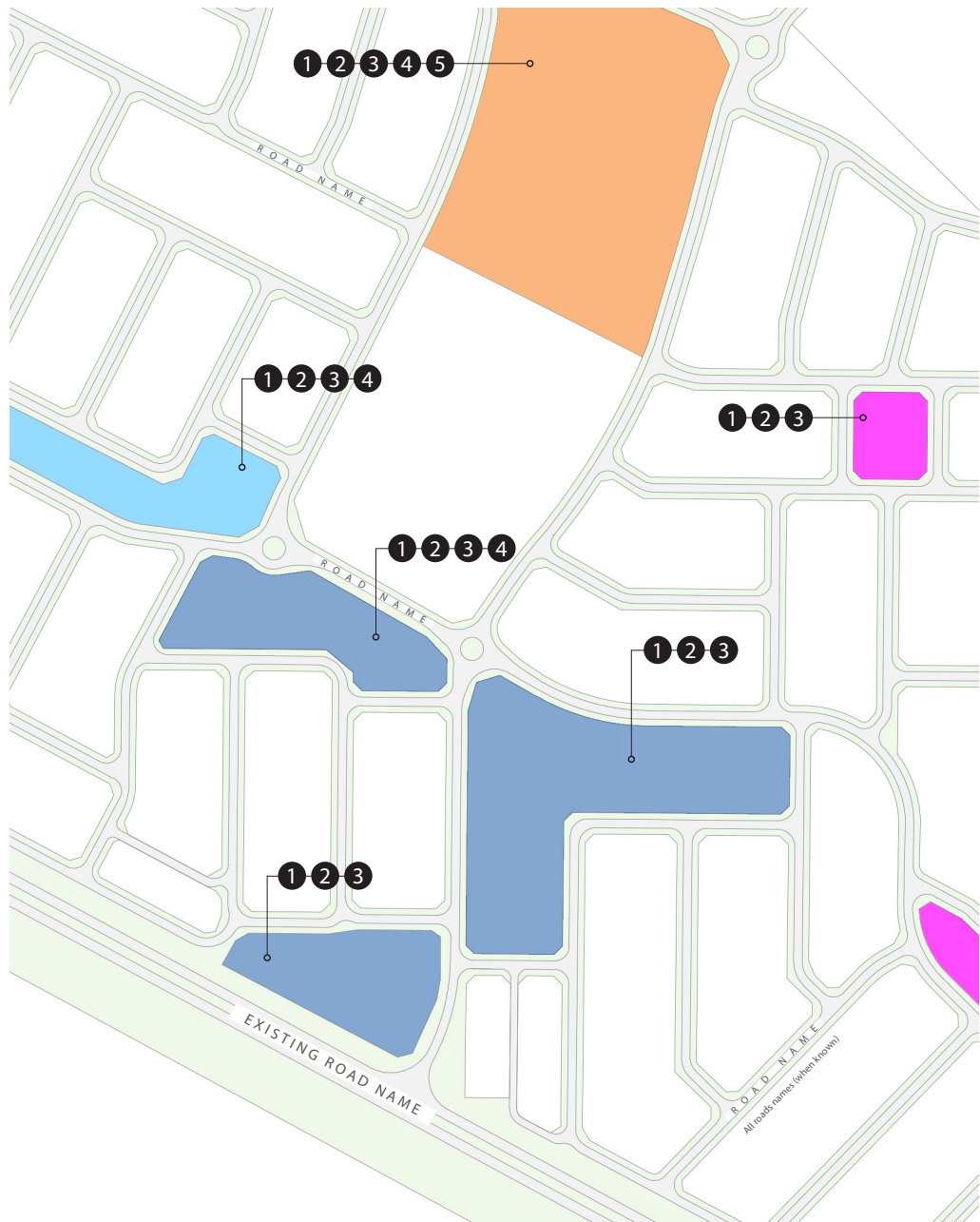
Facilities (Assets)

Plan – Function

LEGEND

- ① Asset Type 1
- ② Asset Type 2
- ③ Asset Type 3

(List all relevant assets)



Assets/Facilities Plan
Development Name
Scale x:xxx @ AX
North Arrow

This plan is intended as a guide only to demonstrate the information required to be shown on this plan type. A conceptual masterplan may be provided as a layer to this plan, however it shall be faded back to ensure the asset types are clearly legible.



Street Tree Masterplan

LEGEND

- Feature Tree
 - Botanical Name
 - Common Name
 - Size @ Installation
 - Installation Method
 - Major Road
 - Botanical Name
 - Common Name
 - Size @ Installation
 - Installation Method
- (List all relevant species)



Street Tree Masterplan
Development Name
Scale x:xxx @ AX
North Arrow

This plan is intended as a guide only to demonstrate the information required to be shown on this plan type. A conceptual masterplan may be provided as a layer to this plan, however it shall be faded back to ensure the street tree types are clearly legible.



POS Landscape Diagram

LEGEND

PFS CLASSIFICATION

NOS Nature

DRAINAGE

1:1

1:5

1:100

TREES

Existing Trees to be Retained

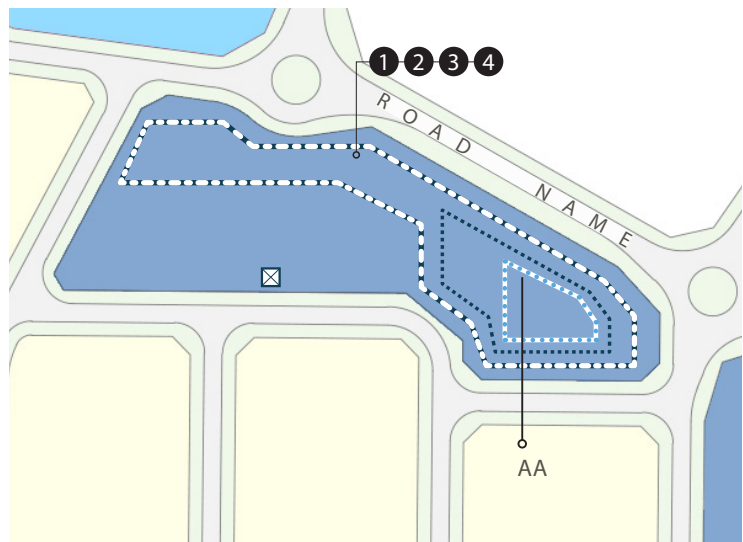
ASSET TYPE

1 Asset Type 1

2 Asset Type 2

3 Asset Type 3

(List all relevant assets)



POS xx SUMMARY

PFS CLASSIFICATION -

Size -

Neighbourhood Nature

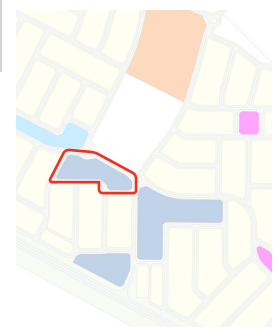
xxx sq.m



POS SECTION AA

Include information that will assist in the visual representation of this POS. For example:

- Key sections - showing the impact of drainage or bushfire management on the POS,
- Associative images - showing the intent of the POS), or
- Photos from site - showing retained trees or vegetation



Key Plan

POS Reference Number

Development Name

Scale x:xxx @ AX




North Arrow

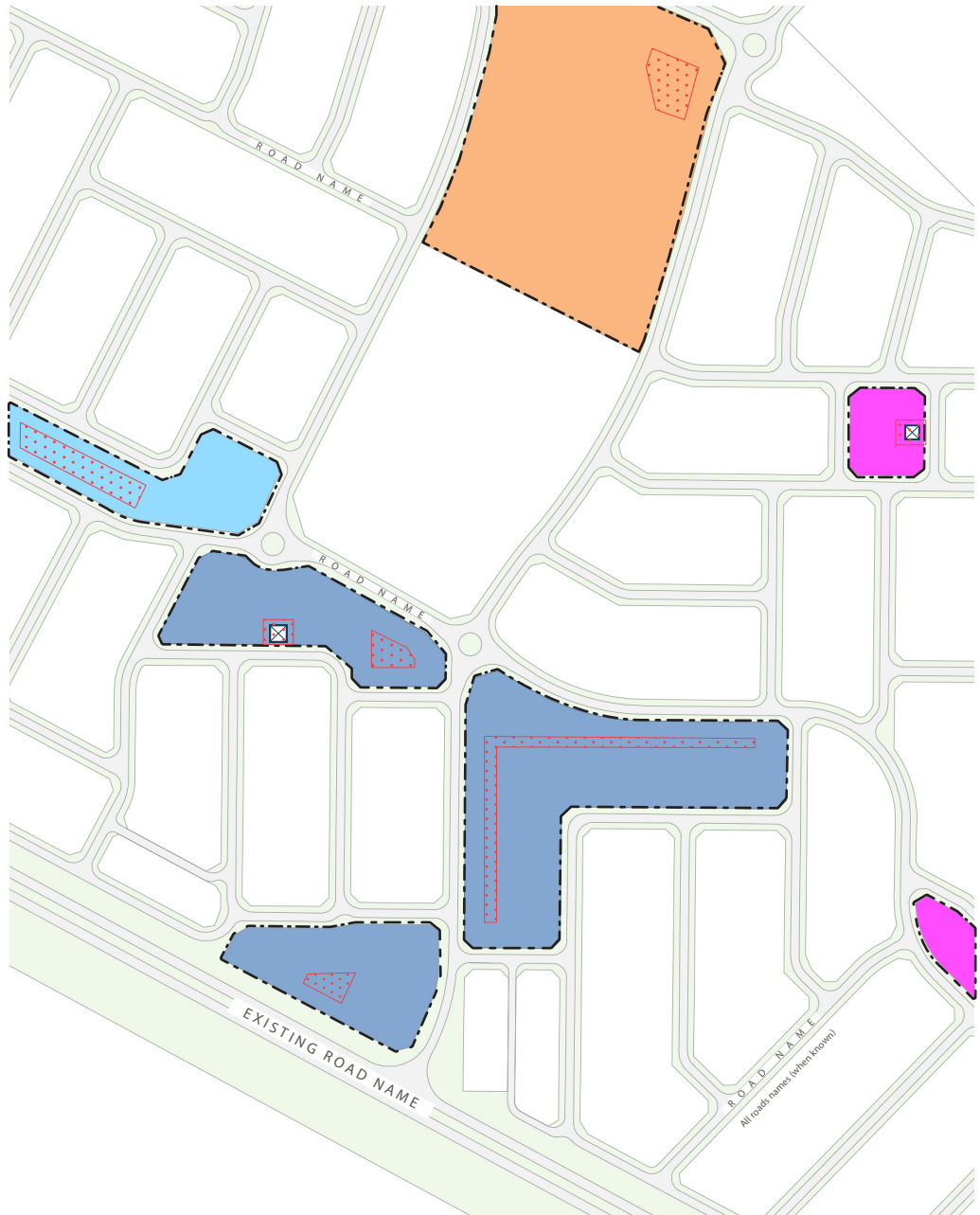
This plan is intended as a guide only to demonstrate the information required to be shown on this plan type. A conceptual masterplan may be provided as a layer to this plan, however it shall be faded back to ensure the asset types are clearly legible.



POS Allocation Plan

LEGEND

-  Restricted
XX SQM
-  Unrestricted
XX SQM
-  Service
Infrastructure
XX SQM

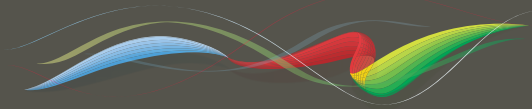


POS Allocation Plan
Development Name
Scale x:xxx @ AX
North Arrow

This plan is intended as a guide only to demonstrate the information required to be shown on this plan type. A conceptual masterplan may be provided as a layer to this plan, however it shall be faded back to ensure the street tree types are clearly legible.



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Landscape Design and Installation Standards

This fact sheet is intended to assist applicants understand the City's minimum expectations relating to the design and installation of landscaping of public open space and streetscapes

This document has been produced to guide developers on the standard landscape specifications for streetscapes and public open space (POS). These guidelines have been created to ensure a standard approach is implemented across all new estates.

1. Design Phase Considerations

These specifications are to be read in conjunction with the City's Public Open Space Landscape Guidelines – in particular the landscape Design Considerations and Form, Function, Classification and Embellishment. In developing the design consider:

- The intended function of the park and associated level of embellishment
- Design for Health and Wellbeing
- Design for Access and Inclusion
- Sense of Place and existing trees
- Site Conditions and Analysis
- In development of the design the developer shall be aware that City accepts Practical Completion and handover of whole POS areas only (ie. the POS shall be kerbed on all sides). The submission of designs for POS shall meet this condition, showing the POS is fully kerbed at time of Practical Completion.

2. Site Works

- Prior to acceptance of site from the Civil Contractor, the landscape contractor shall review and confirm that the site is in order and that all sub-grade materials are suitable. Soil subgrade material may be either a locally available native soil or may be imported as fill material during the construction process, however all subgrade soil must conform to the soil classification A-S being a predominately free draining soil, free from organic matter and other deleterious matter, certified free from pests and diseases.
- Fill for garden beds shall be landscape or native mix depending on the planting proposed. Both mixes are to be AS4419 Certified and applied a minimum depth of 200mm for garden beds.
- Rootzone sand shall be installed for turf to a depth of 200mm for non-active turf and installed rootzone sand shall be AS4419 Certified. Refer to the City's standard oval design specification for active turf sites.
- Earth works and fine grading shall be undertaken as per the approved earthwork drawings and shall conform to the lines, grades, cross-sections and details shown on the Drawings. All organic matter such as stumps, roots, scrub and brush, and all other foreign material including concrete, masonry, boulders, fences, structures, slabs and rubbish, shall be cleared from the natural surface, prior to works progressing to landscape installation.

3. Hardworks

3.1 Transformer Sites

- At detailed design stage, prior to implementation, the landscape and civil drawing sets shall document the transformer location and associated details.
- Each transformer site will have its own design and requirements for fire considerations.
- The electrical consultant shall provide a detailed plan which shows the area which is required to have no combustible material. The City will require this area to be hard landscaped with gravel or concrete and vested as road reserve not POS. Turf will not be considered as an acceptable material.
- The remaining extent of restrictive covenant for fire separation area. Provided this portion of the restrictive covenant does not limit the ability to landscape the POS, this will be accepted by the City, however this area will be calculated as 'restricted POS' not unrestricted within the POS calculations.

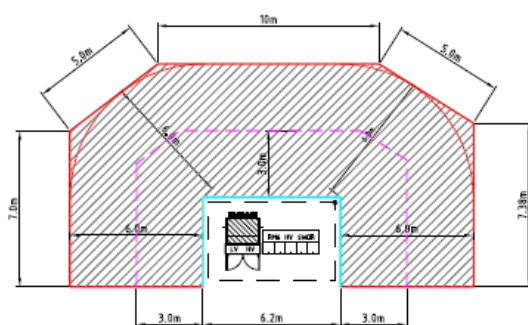


Image 1. Example transformer site.

Red line = Extent of restrictive covenant
Purple line = Extent of no combustible material

3.2 Pathways

- POS design to determine a primary access route (accessible path of travel) to all key elements of the site (and all accessible elements) that meets the Australian Standard requirements of a walkway (ideally) with gentle and compliant falls and a traversable surface.
- A minimum pathway width of 2200mm is recommended for the primary access routes. This is the minimum width requirement for a walkway that will also allow wheelchair movement, turning and passing for two wheelchairs (or prams and the like) [AS1428.1 2009 Clause 10.2]. Beyond the primary access route, secondary path routes may be considered suitable at a reduced width, ensuring minimum 1.5m width.
- All paved surfaces are to be graded to drain to turf and planting areas.
- Loose gravel pathways are not permitted to be installed in POS or streetscapes, except as feature paving in approved locations or as required for drainage purposes.
- Tactile Ground Surface Indicators (TGSIs) to be applied in accordance with **Section 3.5 Tactile Ground Surface Indicators (TGSIs)**, within this document.
- Ideally the primary access route is constructed of a durable surface material (concrete) that will maintain a traversable surface and will not be subjected to erosion or loose material washing onto the surface (e.g. retained to the upper side) creating a slippery/unsafe surface.
- Ensure that the specified ground material is traversable by people who use a wheelchair and those with an ambulant or sensory disability. Poorly laid brick paving with even minimal changes in level and gaps could create a barrier / trip hazard, or at the least an inconvenience to some walking aids and / or manual wheelchairs. [AS1428.1 2009 Clause 7.1]

- Ensure that abutting surfaces along the accessible path of travel have vertical edges of not more than 3mm or 5mm (if the lip is bevelled or rounded). [AS1428.1 2009 Clause 7.2]
- Provide good colour contrast between the paths and edges will assist those with low vision to identify paths.
- Ensure that the specified flooring material have finishes that are slip resistant [Refer to Tables 3A and B of SA HB 198:2014]
- Any pathways accessible by maintenance vehicles shall be reinforced and a minimum of 150mm thick and conform to the City's minimum standard footpath detail, available on the City's website- <https://www.armadale.wa.gov.au/standard-drawings>.

3.3 Stairs

- Proposed materials to be used shall be durable and hard-wearing, suitable for exposure to outdoor conditions with low on-going maintenance costs. Blockwork walls shall be laterite rather than limestone.
- Tactile Ground Surface Indicators (TGSIs) to be applied in accordance with **Section 3.5 Tactile Ground Surface Indicators (TGSIs)**, within this document.
- Check building licence requirements.
- Where stairs are proposed, stairs shall be constructed as follows [AS1428.1 2009 Clause 11.1]:
 - a) Where the stair is at an intersection, the stair shall be set back by a minimum of 900mm so that the handrail termination and TGSIs do not protrude into the transverse path of travel.
 - b) Stairs shall have opaque risers.
 - c) Stair nosings shall not project beyond the face of the riser and the riser may be vertical or have a splay backwards up to a maximum 25mm. Stair nosing profiles shall:
 - i. have a sharp intersection
 - ii. be rounded up to 5mm radius
 - iii. be chamfered up to 5mm × 5mm
 - d) At the nosing, each tread shall have a strip not less than 50mm and not more than 75mm deep across the full width of the path of travel. The strip may be set back a maximum of 15mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background.
 - e) Where the luminance contrasting strip is not set back from the front of the nosing then any area of luminance contrast shall not extend down the riser more than 10mm.
- Stairway handrails shall be continuous throughout the stair flight and, where practicable, around landings and have no obstruction on or above up to a height of 600 mm and as follows [AS1428.1 2009 Clause 11.2]:
 - a) The design and construction of handrails shall comply with AS1428.1 2009 Clause 12.
 - b) Handrails shall be installed on both sides of the stairs.
 - c) Handrails shall have no vertical sections and shall follow the angle of the stairway nosings.
 - d) Where a handrail terminates at the bottom of a flight of stairs, the handrail shall extend at least one tread depth parallel to the line of nosings plus minimum of 300 mm horizontally from the last riser.
 - e) The handrail shall extend a minimum of 300 mm horizontally past the nosing on the top riser.
 - f) Where the handrail is continuous, the 300 mm extension is not required in the inner handrail at intermediate landings.
 - g) The dimensions indicating the heights of handrails shall be taken vertically from the nosing of the tread to the top of the handrail or from the landing to the top of the handrail.
- For stair warning TGSIs [AS1428.4.1 2009 Clause 2.4 Figures 2.2 & 2.3(A)]
- Ramps are preferred to stairs for equitable access or co-located with stairs as an inclusive approach to the provision of step-free vertical access in the public realm.

3.4 Ramps

- A continuous accessible path of travel shall not include a step, stairway, turnstile, escalator, moving walk or other impediment. [AS1428.1 2009 Clause 6.1]
- Tactile Ground Surface Indicators (TGSIs) to be applied in accordance with **Section 3.5 Tactile Ground Surface Indicators (TGSIs)**, within this document.
- Walkways, ramps and landings that are provided on a continuous accessible path of travel shall be as follows [AS1428.1 2009 Clause 10.1]:
 - a) Sharp transitions shall be provided between the planes of landings and ramps.
 - b) Landings shall be provided at all changes in direction.
 - c) Landing or circulation space shall be provided at every gate, or similar opening.
 - d) For walkways and landings having gradients in the direction of travel shallower than 1:33, a camber or crossfall shall be provided for shedding of water and shall be no steeper than 1:40, except that bitumen surfaces shall have a camber or crossfall no steeper than 1:33.
- Walkways shall comply with the following [AS1428.1 2009 Clause 10.2]:
 - a) The floor or ground surface abutting the sides of the walkway shall provide a firm and level surface of a different material to that of the walkway at the same level of the walkway, follow the grade of the walkway and extend horizontally for a minimum of 600 mm unless a kerb or kerb rail and handrail or a wall not less than 450mm in height.
 - b) Walkways shall be provided with landings, as specified in Clause 10.8, at intervals not exceeding the following:
 - i. For walkway gradients of 1:33, at intervals no greater than 25m
 - ii. For walkway gradients of 1:20, at intervals no greater than 15m
 - iii. For walkway gradients between 1:20 to 1:33, at intervals that shall be obtained by linear interpolation.
 - iv. For walkways shallower than 1:33, no landings are required.
- Pedestrian ramps shall comply with the following [AS1428.1 2009 Clause 10.3]:
 - a) The maximum gradient of a ramp exceeding 1900 mm in length shall be 1:14
 - b) The gradient of a ramp shall be constant throughout its length.
 - c) Ramps shall be provided with landings at the bottom and at the top of the ramp and at intervals not exceeding the following:
 - v. For ramp gradients of 1:14, at intervals not greater than 9m.
 - vi. For ramp gradients steeper than 1:20, at intervals not greater than 15m.
 - vii. For ramp gradients between 1:14 and steeper than 1:20, at intervals that shall be obtained by linear interpolation.
 - d) Where ramps are constructed with a change in direction, the angle of approach shall create a 90° angle to the line of transition between the ramp surface and the landing surface.
 - e) Ramps shall have a handrail on each side of the ramp.
 - f) Where the ramp is at an intersection, the ramp shall be set back by a minimum of 900mm so that the handrail and TGSIs do not protrude into the transverse path.
 - g) The handrail shall extend a minimum of 300 mm horizontally past the transition point at the top and bottom of the ramp except where the inner handrail is continuous at an intermediate landing.
 - h) Ramps and intermediate landings shall have kerbs or kerb rails on both sides.
- Curved ramps, walkways and landings shall comply with the following [AS1428.1 2009 Clause 10.4]:
 - a) The gradient of curved ramps and walkways shall comply with AS1428.1 2009 Clause 10.4 Figure 20
 - b) Landings shall comply with AS1428.1 2009 Clause 10.8
 - c) The length of a curved ramp shall be measured horizontally along its centreline.
 - d) Curved ramps and walkways shall have a width of not less than 1500mm.

- e) Any crossfall shall be towards the centre of curvature.
- If required, the permissible threshold ramps at doorways on a continuous path of travel shall have [AS1428.1 2009 Clause 10.5]:
 - a) a maximum rise of 35mm
 - b) a maximum length of 280mm
 - c) a maximum gradient of 1:8
 - d) be located within 20 mm of the door leaf which it serves.
 - e) where the exposed edges of the threshold ramp does not abut a wall, the edges shall be tapered or splayed at a minimum 45°.
- Step ramps shall have [AS1428.1 2009 Clause 10.6]:
 - a) a maximum rise of 190mm
 - b) a length not greater than 1900mm
 - c) a gradient not steeper than 1:10
 - d) a slip-resistant surface
 - e) The edges of step ramp shall have a 45° splay where there is pedestrian cross-traffic. Otherwise, it shall be protected by a suitable barrier, such as:
 - i. a wall or suitable barrier with a minimum height of 450mm
 - ii. where an open balustrade is provided a kerb or kerb rail shall be provided
- Kerb ramps shall [AS1428.1 2009 Clause 10.7]:
 - a) be aligned in the direction of travel.
 - b) have the centreline, through the pedestrian refuges (if any), align across the road or vehicular way within the building/property allotment.
 - c) be aligned at 90° to path of travel at the top and bottom of kerb ramps.
 - d) have a sharp gradient transition at the top and bottom of kerb ramps.
 - e) a maximum rise of 190mm.
 - f) a length not greater than 1520mm.
 - g) a gradient not steeper than 1:8.5, located within or attached to a kerb.
- For ramp warning TGSIs (walkways, threshold ramps and step ramps do not require TGSIs) [AS1428.4.1 2009 Clause 2.4 Figure 2.3(B)]

3.5 Tactile Ground Surface Indicators (TGSIs)

- TGSIs should be installed to provide guidance (for orientation and wayfinding via the application directional TGSIs) and/or warning of an obstruction or hazard in any location where insufficient alternative or 'natural' tactile cues exist.
- Along the continuous accessible path of travel, warning TGSIS shall be installed and placed as follows [AS1428.4.1 2009 Clause 2.3.3]: For the full width of the path of travel.
 - a) Perpendicular to the direction of travel when approaching a hazard.
 - b) Set back 300mm from the edge of the hazard.
 - c) Where integrated warning TGSIs need to be detected by a person approaching at an angle to the continuous accessible path of travel, the TGSIs shall be arranged over a minimum depth of 600mm to 800mm from the direction of approach.
 - d) Where discrete warning TGSIs are used over a depth of 300mm to 400mm, the arrangement shall be over a minimum depth of 600mm to 800mm from the direction of approach.
- Where there are ramps and stairs along the accessible path of travel, warning TGSIS shall be installed and placed as follows [AS1428.4.1 2009 Clause 2.4]:
 - a) Located at both the top and bottom of stairways and ramps.

- b) Where the distance of the midway landing is 3000mm or more to the nearest nosing edge, the warning TGSIs shall be over a distance of 600mm-800mm.
- c) Where the distance of the midway landing is less than 3000mm to the nearest nosing edge, the warning TGSIs shall be over a distance of 300mm-400mm.
- d) Where handrails are continuous on both sides of the midway landing and the distance of the landing is less than 3000mm to the nearest nosing edge, warning TGSIs are not required.
- Where there are impediments or hazards with less than 2000mm height clearance in an accessible open public space, contact with overhead hazard shall be prevented by a suitable barrier such as [AS1428.4.1 2009 Clause 2.6 Figure 2.6]:
 - a) enclosing the area; or
 - b) providing handrails with kerbs or kerb rails in accordance with AS1428.1
 - c) In the absence of a suitable barrier, 600mm to 800mm deep band of TGSIs shall be installed at 300mm from the hazard.
- Where a pedestrian area adjoins a vehicular way at grade (on the same level, without a barrier kerb) or to delineate the pedestrian area and from the vehicular way, 600mm to 800mm deep band of warning TGSIs shall be installed 300mm away from the edge of the vehicular way. [AS1428.4.1 2009 Clause 2.5]
- Directional TGSIs are provided to [AS1428.4.1 2009 Clause 3.1]:
 - a) give directional orientation in open spaces where there are insufficient tactile directional cues (e.g. handrails or walls).
 - b) designate the route to be taken to avoid a hazard in the absence of existing tactile cues.
 - c) give directional orientation where a person must deviate from the regular continuous accessible path of travel to have access to
 - i. a mid-block kerb ramp or street crossing
 - ii. public transport access point (e.g. bus, tram or light rail stop, train or light rail station or passenger ferry wharf)
 - iii. point of entry to a significant public facility (e.g. railway station, public hospital, community health centre, sports or entertainment venue or public toilet)
- Directional TGSIs shall be installed and placed as follows [AS1428.4.1 2009 Clause 3.2.3]:
 - a) parallel with and along the centreline of the required direction of travel.
 - b) where indicating the continuous accessible path of travel, they shall be arranged according with a depth of 300mm to 400mm.
 - c) where needed to be detected by a person approaching at an angle to the continuous accessible path of travel, the directional TGSIs shall be arranged over a minimum depth of 600 mm to 800 mm from the direction of approach.
- Where a continuous accessible path of travel denoted by directional TGSIs reaches a point for a change in direction, this point shall be indicated by warning indicators 600mm to 800mm × 600mm to 800mm. [AS1428.4.1 2009 Clause 3.3]
- Warning TGSIs shall be installed on the face of kerb ramps at pedestrian crossings in the following scenarios [AS1428.4.1 2009 Appendix C3]:
 - a) the distance between the building line/boundary and the top of the kerb ramp is 3m or more.
 - b) the change in gradient between that of the pedestrian surface at the top of the kerb ramp and the gradient of the kerb ramp surface is shallower than 1:8.5.
 - c) the kerb ramp is not aligned with the building line and in not the direction of travel across the vehicular way. Directional indicators should lead to the warning indicators located at the crossing entry point. Directional indicators should be provided from the property line to the top of the ramp.
- TGSIs shall be laid so that there is no likelihood of the edges lifting. [AS1428.4.1 2009 Clauses 2.3.1 & 3.2.1]
- A TGSIs shall be slip-resistant. Preference for concrete TGSIs.

- The base surface of an integrated TGSi shall be not more than 3mm above the abutment surface of the surrounding floor or ground surface and shall have all exposed external edges chamfered.
- Where extensions are required, ensure that the TGSIs have cut/seam lines in the middle section and all directional TGSIs have the chamfered sides to reduce tripping hazards.

3.6 Walls

- Proposed materials to be used shall be durable and hard-wearing, suitable for exposure to outdoor conditions with low on-going maintenance costs. Blockwork walls shall be laterite rather than limestone.
- A non-sacrificial anti-graffiti coating must be installed to exposed areas of walls.
- Check building licence (BL) requirements, a BL may be required for all walls over 500mm.
- Retaining walls shall have suitable drainage designed in.
- Retaining walls at a height of 600mm shall require a balustrade.
- Retaining walls under a height of 600mm with a pathway adjacent shall have a kerb or kerb rail.
- Kerbs or kerb rails shall [AS1428.1 2009 Clause 10]:
 - a) be located so that the path-side face is either flush with the path-side face of the handrail or no greater than 100 mm away from the path-side face of the handrail, if a handrail is provided.
 - b) where the handrail is supported on a vertical post, the height of the top of the kerb or kerb rail shall be not less than 150 mm above the finished floor.
 - c) be a minimum of 65mm in height (kerb).
 - d) be a minimum of 150mm in height with a maximum gap of 65mm in height (kerb rail).
 - e) Where kerb is at a height of 65 mm to 75 mm, the support posts shall be set back a minimum of 200 mm from the face of the kerb or kerb rail.

3.7 Garden Bed Edging

- Extruded concrete kerbing is preferred as a garden bed edge. Garden bed kerbing is to be plain grey in colour, 32mpa at 28 days and installed utilising suitable extrusion kerbing equipment operated by a competent and qualified operator. The profiles will typically be either 150mm (w) x 200mm (d) or 150mm x 150mm.

3.8 Pedestrian Bridges and Boardwalks

- Utilise timber alternatives such as composite or concrete decking.
- Structural support shall be concrete piles, no metal or timber work below the 1:5 year, top of water level.
- Local hardwood timber will be considered within handrails and as a structural timber.
- If the depth of water beneath / adjacent to the bridge is over 300mm in depth, a balustrade is required to be provided.
- If the fall height is greater than 600mm high, a balustrade is required. If the drop is less than 600mm high, with water under 300mm, a kick rail will be accepted.
- Bridges over Water Corp easements / drains will be required to comply with above barrier / handrail / kickrail requirements.
- The design and construction of handrails shall comply with the following [AS1428.1 2009 Clause 12 Figure 29]:
 - a) Handrails and balustrades shall not encroach into required circulation spaces.
 - b) The cross-section of handrails shall be circular or elliptical, not less than 30mm or greater than 50mm in height or width for not less than 270° around the uppermost surface.

- c) Exposed edges at ends and corners of handrails shall have a radius of not less than 5mm.
 - d) The top of handrails shall be not less than 865 mm nor more than 1000 mm above the nosing of stairway tread or the plane of the finished floor of the walkway, ramp or landing.
 - e) The height of the top of the handrail, measured, shall be consistent through the ramp (or stairs) and any landings.
 - f) If a balustrade is required at a height greater than the handrail, both shall be provided.
 - g) Handrails shall be securely fixed and rigid, and their ends shall be turned through a total of 180°, or to the ground, or returned fully to end post or wall face.
 - h) The clearance between a handrail and an adjacent wall surface or other obstruction shall be not less than 50 mm. This clearance shall extend above the top of the handrail by not less than 600 mm.
 - i) Handrails shall have no obstruction to the passage of a hand along the rail.
 - j) The inside handrail at landings shall always be continuous.
- Meet Australian Standards for Design for Access and Mobility and Building Code of Australia.
 - a) A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability.
 - b) Abutment of surfaces shall have a smooth transition. Design transition shall be not more than 3mm or 5mm, provided the edges have a bevelled or rounded edge to reduce the likelihood of tripping. [AS1428.1 2021 Clause 4.2 Figures 6 & 7]
 - c) Slotted openings for stormwater grates, timber decking and boardwalks shall not be greater than 13mm and be oriented so that the long dimension is transverse to the dominant direction of travel. Where slotted openings are less than 8mm, the length of the slots may continue across the width of paths of travel. [AS1428.1 2021 Clause 4.4 & 4.5]

3.9 Signage

- Promotional signage and entry statement signage will require City of Armadale Planning Approval.
- Interpretative and way finding signage shall conform to the City's corporate style guide, available on request.
- Wayfinding, directional (other than to an accessible entrance or accessible toilet) or informative signage is not addressed in the Australian Standards called up in the Access Code of the Premises Standard or the National Construction Code, therefore, to meet the following requirements is not mandatory, but important to meet the needs of all people regardless of age or ability, and the intent of the DDA. It is recommended wayfinding, directional, or informative signage incorporates the following principles of good signage [AS1428.2 1992 Clause 17]:
 - a) Any information provided on signs should be clear and unambiguous to read.
 - b) Lettering (size, type, layout) to be clear and legible (i.e., sans serif font, in sentence or title case as appropriate to the environmental/signage context).
 - c) Avoid the use of all capitals [Readability is reduced with ALL CAPS because all words have a uniform rectangular shape, meaning readers can't identify words by their shape (Reference: Harvard University Digital Accessibility)].
 - d) Letter height to be appropriate to the required/anticipated viewing distance.
 - e) The sign is not to reflect light nor be placed behind glazing (due to reflection and glare).
 - f) The text is to be in 30% luminance contrast to the sign.
 - g) The sign should contrast with the background surface.
 - h) Avoid the use of multiple typefaces, and a patterned or visually cluttered background to the signage text.

- i) Signage to be located at a height between 1200–1600mm from the finished floor surface, where it will be most visible to people seated and standing. Where space within the 1200-1600mm zone is not available, the sign can be extended downward, no lower than 1000mm.
- j) Should the sign be obscured at any time (e.g., by crowds) it should be placed at least 2000mm high [preserving the accessible path of travel as per AS1428.1 2009 Clause 6.2 and Figure 2] with the text size correspondingly increased in size.
- k) Best practice indicates directional signage should be consistent in style and located consistently along the path of travel so that it can be readily found and at key decision-making points.
- l) Signage should not obstruct the accessible path of travel.
- m) Free-standing signage (e.g., totems, boards) should be set off the accessible path of travel, on a hard stand with circulation space in front of at least 1540mm (width) by 2070mm (in the direction of travel) [AS1428.1 2009 Clause 6.5.3].
- n) Ensure signage cannot be obstructed by foliage and the like.
- For building directory signage:
 - a) Avoid including too much information.
 - b) Use pictorial content including directional arrows and internationally recognised symbols where these are available. Ensure symbols are as intuitive to interpret as possible, in the context of the environment.

In an environment supporting the needs of older persons or persons with cognitive impairment, consider the following [National Aged Care Design Principles and Guidelines, prepared by the Department of Health and Aged Care, July 2024]:

- c) The posture of older persons often results in a downward gaze, requiring effective signage to be located lower, ideally with the
- d) top of the signage no more than 1200-1500mm above the floor.
- e) Keep messaging short, easy to understand and easy to remember.
- f) Use language that is familiar and relevant to the environment/culture.
- g) Avoid acronyms and technical wording.
- h) Locate institutional signage (e.g. for service maintenance) in places that are less visible to building users/visitors and locate staff-only signage in back, not front-of-house areas.

3.10 Carparking

- Provide roadside carparking at the below rates:
 - Sporting spaces – refer to community planning team
 - Nature spaces (2 – local, 5- neighbourhood, 10 district)
 - Recreation spaces (2 – local, 5- neighbourhood, 15 district)
- Trees shall be designed into carpark arrangement as follows;
 - 1 tree per 3 parallel bays, runs of parallel bays greater than 3 will generally not be supported.
 - 1 tree per 4 bays for standard parking
- Bike parking should be considered in all parks to encourage people to arrive by bike.
- Carparking shall meet Australian Standards for parking facilities and Australian Standards for Design for Access and Mobility, including the provision of accessible parking bays as outlined as follows;
 - a) An angle parking space shall comprise a combination of areas as follows [AS2890.6 2009 Clause 2.2.1]:
 - i. A dedicated (non-shared) space of 2400mm wide by 5400mm long.
 - ii. A shared area on one side of the dedicated space of 2400mm wide by 5400mm long. It may be entirely on the left or entirely on the right side of the dedicated space.

- iii. A shared area 2400 mm long by 2400 mm wide at one end of the dedicated space. It may be entirely at the front or entirely at the rear of the dedicated space.
 - iv. The dedicated space and the shared area shall be at the same level.
 - v. A bollard shall be provided at the front and middle of the shared area.
 - vi. The angle-parking angle shall be between 45 degrees and 90 degrees. It is not required that all spaces within a car park be at the same parking angle.
- b) A parallel parking space shall comprise areas as follows [AS2890.6 2009 Clause 2.2.2]:
- i. A dedicated space of at least 3200mm wide by 7800mm long
 - ii. A shared area adjacent to the non-trafficked side of the dedicated space of at least 1600mm wide by 7800mm long.
 - iii. The shared area may be at a higher level than the dedicated space in which case it shall be separated by a kerb not more than
 - iv. 190mm high and shall be increased in width to accommodate kerb ramps in accordance with AS 1428.1.
- c) Each parking space for people with disabilities and related walking and wheelchair unloading areas shall comprise a firm plane surface with a fall not exceeding 1:40 in any direction (1:33 if the surface is a bituminous seal and the parking space is out of doors). These areas shall have a slip-resistant surface. [AS2890.6 2009 Clause 2.3]
- d) The path of vehicular travel from the car park entrance to all parking spaces for people with disabilities and from those spaces to the car park exit shall have a minimum headroom of 2200mm. The headroom above each dedicated space and adjacent shared area, measured from the level of the dedicated space shall be a minimum of 2500 mm. For an angle parking space, the headroom of the front of the space and its adjacent shared area may be reduced to lie within the profile. [AS2890.6 2009 Clause 2.4 Figure 2.7]
- e) Where kerb ramps are to be provided, they shall be placed at a front or rear corner of the parking space. [AS2890.6 2009 Clause 2.5]
- f) Each dedicated space shall be identified by means of a white symbol of access in accordance with AS 1428.1 between 800mm and 1000mm high placed on a blue rectangle with no side more than 1200mm, placed as a pavement marking in the centre of the space between 500mm and 600mm from its entry point. [AS2890.6 2009 Clauses 3.2]
- g) Pavement markings shall be yellow and shall have a slip resistant surface. Raised pavement markers shall not be used for space.
- h) Delineation. Pavement markings shall be provided as follows [AS2890.6 2009 Clauses 3.1]:
- i. Dedicated parking spaces shall be outlined with unbroken lines 80 to 100mm wide on all sides excepting any side delineated by a kerb, barrier or wall.
 - ii. Shared areas shall be marked as follows:
 - Walkways within or partly within a shared area shall be marked with unbroken longitudinal lines on both sides of the walkway excepting any side delineated by a kerb, barrier or wall.
 - Other vacant non-trafficked areas, which may be intentionally or unintentionally obstructed (e.g. by unintended parking), shall be outlined with unbroken lines 80 to 100 mm wide on all sides excepting any side delineated by a kerb, barrier or wall, and marked with diagonal stripes 150 to 200 mm wide with spaces 200 mm to 300 mm between stripes. The stripes shall be at an angle of 45 ± 10 degrees to the side of the space.
 - No shared area markings shall be placed in trafficked areas.
- i) Signs should be provided where necessary, as follows [AS2890.6 2009 Appendix A3]:

- i. Direction signs - If the route to parking spaces for people with disabilities is not readily apparent from the vehicular entrance to the car park, direction signs comprising the international symbol of access and an arrow should be used at the entrance and at each change of direction to direct traffic to the spaces. The symbol should point in the same direction as a left or right arrow.
- ii. Space reservation signs - In public car parks linear parking control signs* bearing the user limitation '(Access Symbol) ONLY' should be used if it is necessary to formally reserve spaces for their intended use. Additional words such as PERMIT MUST BE DISPLAYED may be added to the signs.

3.11 Access Management

- 1.2m high chainlink fencing is to be installed around the perimeter of POS with a sport function.
- Bollards (composite flexi pole or painted timber) are to be installed around the perimeter of most recreational POS. Post and rail or 1.2m chainlink fence may be required for areas with high use playgrounds or to restrict motorbike access.
 - a) Where bollards are located along a walkway, depending on the bollard finish, i.e. stainless steel, they may not be detectable by a person with vision impairment. Ensure any bollards located on the path of travel achieves a minimum 30% luminance contrast to the surrounding surfaces. [AS1428.2 1992 Clause 27.1(b)]
 - b) Where bollards have reflective surfaces, e.g. stainless steel, the bollard is to have a 150mm thick band of contrast strip at the top section.
- A lockable maintenance gate with a dedicated 3m wide, reinforced concrete crossover shall be provided at agreed access points.
- Pedestrian Access gates within parks and playgrounds
 - a) All pedestrian gates are to achieve the minimum clear open width of 850mm. [AS1428.1 2009 Clause 13.2]
 - b) All pedestrian gates are to achieve the required circulation spaces. Where the pedestrian gates are approached from a footpath flanked by soft/inaccessible surfaces e.g. dirt or flower bed, the hardstand area shall also accommodate the required latch-side clearance. [AS1428.1 2009 Clause 13.3 Figures 31 or 32]
 - c) Alternatively, where pedestrian gates are power operated, latch-side clearance is not required. [AS1428.1 2009 Clause 13.3.4]
 - d) Where vestibules are designed between pedestrian gates, ensure that the minimum distance of 1450mm between the door leaves in either closed or open positions are maintained. [AS1428.1 2009 Clause 13.4 Figure 34]
 - e) Excluding child safety gates, the gate hardware shall be lever type for hinged gates such that the hand cannot slip from the handle, ensuring the operation of the latch or D type for sliding gates. All gate handles must achieve the required 35mm to 45mm clearances to the back plate or gate face. The gate handle must be installed at 900mm to 1100mm high. [AS1428.1 2009 Clause 13.5.2 (a), (b), (c) and Clause 13.5.3(a)]
 - f) The maximum force required to operate and hold open the pedestrian gates shall not exceed 20N. [AS1428.1 2009 Clause 13.5.2(e)]
 - g) The pedestrian gates shall be self-closing. Alternatively, a horizontal handrail or pull bar shall be fixed on the closing face of the hinged gate. [AS1428.1 2009 Clause 13.5.2(f) Figure 36]
- Conservation / Nature Areas
 - a) Conservation fencing is to be installed around the perimeter of POS with a nature function.

- b) It is desirable to include accessible paths throughout conservation areas, however as these areas often include naturalistic, aggregate paths, restrictive fencing preventing unintended motorbike access and fauna control, pedestrian gates to achieving the minimum clear open width of 850mm. [AS1428.1 2009 Clause 13.2] are not always practical.
- c) Loose gravel pathways are generally not permitted to be installed in POS or streetscapes, except as feature paving in however may be considered appropriate in conservation areas.
- d) In these areas, combined maintenance gate / pedestrian gate arrangements may be appropriate to consider for conservation areas.

3.12 Lighting

- Lighting shall be limited to higher order parklands as per the facilities matrix.
- Within recreational POS or public access ways lights shall be installed on poles or within shelters. Lighting shall be LED and powered rather than solar. Provide vandal proof lighting options for consideration, with a design to Australian Standard - Lighting for roads and public spaces - for passive lighting.
- No inground or uplighting will be approved.
- A 'PE' cell and timer control system is to be installed with the control gear is to be accessible within the POS.
- Within District and Regional Sporting POS, lights shall be designed in accordance with Australian Standard LUX requirements for varying sports standards.

3.13 Play Spaces

- Equipment to be located within one general area, ensuring inclusive play areas are connected to primary walkways.
- Seating opportunities to be considered so as to provide clear sightlines for caregivers to the play areas.
- Ensure that inclusive play areas and associated seating opportunities are under shade. Shade options shall be provided, with preference being mature trees and constructed options considered for larger sites.
- Playground design and softfall shall be compliant with Australian Standards. Softfall shall be pinebark mulch or softfall rubber (no sand). Locate accessible and inclusive play equipment on a traversable surface such as rubber soft fall or compacted gravel. Avoid segregating the play areas into physically challenging play areas set over inaccessible surfaces.
- A diverse range of play opportunities which cater for a range of interactive activities including climbing, balancing etc. Disability inclusion and sensory play shall be considered for all playgrounds.
- In evaluation of the diversity of play opportunities on offer within a proposed playground, consider the following inclusions;
 - a) Choice of play elements at ground level where access for all is possible.
 - b) Choice of climbing structures to offer a variety of options in regards physical challenge and child ability.
 - c) Good sightlines to play equipment, particularly in areas of play for younger children.
 - d) Avoid raised lips around play equipment.
 - e) Consider, if swings are to be provided, that a swing with body support is provided (e.g. hammock/birds nest swing).
 - f) Where a slide is provided, replace with a double slide (so that children can slide together, or a parent can slide adjacent a child).
 - g) Where significant play equipment items are provided in a playground that is not specifically designated as all-inclusive, specify the accessible version, such as a see-saw with a backrest; a flying fox with a supportive seat, a tunnel with an accessible path of travel through the centre,

sensory finishes, musical instruments, sand and water play, a shop front, a “clatter bridge” or dry creek bed, grinding stone and the like, all set on a traversable surface.

- h) Consider access to quiet spaces for young people who prefer to play quietly or need to retreat, including cubby spaces, nooks, mia mia, arbours and the like.
- The Developer will organise an independent audit of the proposed playground prior to construction of the Works and submit to the City for its records.
- The Developer will organise an independent audit of the playground post installation and submit to the City for its records, inclusive of Softfall impact attenuation testing.
- All footings will require engineering design and certification.
- The Developer shall supply the City with the manufacturer’s details of equipment installation instructions; spare parts lists, warranties and instructions required for on-going maintenance of their equipment.
- Timber is not a preferred material. Should timber be approved it should be limited to high order district open spaces, with the timber used in the playground equipment shall be treated Durability Class 1 or 2 Hardwoods.
- Lead times for replacement items / pieces must be considered. Preference given to Australian sourced items.

3.14 Bins

Specifications for bins include the following:

- 120L or 240L plastic wheelie style bins are preferable.
- Bins shall be enclosed in a metal bin enclosure.
- enclosure where practicable.
- Located on a concrete hard-stand or equivalent and positioned with consideration for access for servicing.
- Dog waste disposal bags shall be stored in a metal dispenser mounted on to bin pole.

3.15 Furniture

- Off the shelf, locally sourced products are preferred. Custom furniture is not preferred and will only be considered for higher order parks (district or neighbourhood).
- Provide universally accessible seating options including circulation space.
 - a) Seating opportunities should be considered at intervals of approximately 60-100m apart, especially between accessible parking bays/drop-off to points-of-interests. [National Disability Services, ACROD Parking Program - Individual Eligibility Criteria]
 - b) Accessible seating options to include a hardstand in front of the seat to enable a mobility device user to manoeuvre to the front of the seat* and sit down (a depth of 1500mm is ideal). Include a hardstand to the side (or to both sides) of the seat so that a wheelchair user can be seated next to the park bench (this space also allows a pram to be parked next to the seat). This is described as a “wheelchair seating space” and is to be at least 800mm wide (1000mm preferred, for comfort) and 1300mm in length, ensuring the 1300mm does not protrude into an access path.
 - c) Ensure when choosing the orientation of benches, that they offer desired views / sightlines, e.g. the river, the playground etc. This may mean the seat faces towards the path or is set with the seat back closest to the path. People who use a wheelchair should be afforded the opportunity to sit with friends and family seated on the bench, thus OHA advocate that bench seats are provided with an adjacent wheelchair seating space as described above. In the instance a seat is located with the seat back closest to the path, provide an access path to the side of the seat (this may also serve as the wheelchair seating space), then provide manoeuvring space to the front of the seat (to allow people with a walking aid or pram approach the seat and sit down). This

manoeuvring space should be ideally 1500mm deep, although 1200mm will suffice. [Sport and Recreation Access for All. 1996. Sport and Recreation Victoria.]

- All seating is to be constructed of steel or aluminium.
- Battens shall be aluminium or composite materials.
- Seating shall be installed with above or below ground fixings, where possible on a concrete hard stand.
- Seating shall have armrests and backrests to accommodate DAIP requirements, detailed as follows;
 - a) Ensure the bench seat has a backrest and armrests, seat height of 450mm, preferred seat base depth of 450mm, a seat front where there is a clear space between the legs at ground level to within 150mm of the front edge of the seat and to within 100mm of the seat height to allow for rearward adjustment of feet when rising. [AS1428.1 1992 Clause 27.2]
 - b) The seating should not protrude into any accessible path of travel and be set back 500mm from the accessible path of travel (this is to allow people to be seated, without their feet and other items such as bags, obstructing the access path). [AS1428.1 1992 Clauses 27.1]
 - c) The material shall not be heat absorbent. [AS1428.1 1992 Clause 27.2]

3.16 Shelter

- All shelters shall be constructed of steel or aluminium (the City's preference is for the steel to be HD galvanised then powder-coated).
- Shelters shall be set on a hard-stand pad (e.g. unit paving or insitu concrete).
- Shelters shall be installed with below ground fixings where possible.
- Shelters shall be structurally certified by an accredited engineer and will require City of Armadale Building Approval prior to installation.
- Shelter and picnic facilities to be positioned to allow sufficient circulation space to accommodate DAIP requirements.
 - a) A picnic table is to meet the following parameters [AS1428.1 1992 Clause 24 Figure 25]:
 - i. 750±20mm high.
 - ii. Knee and footplate clearance according to Figure 25 of AS1428.2 and Clause 24.1 (OHA would advocate that a minimum 720mm underneath clearance be achieved).
 - iii. Underneath clearance width, between the legs or other fixture beneath the table, a minimum of 800mm, at the approach side of the table. This may be achieved either by:
 - iv. removing a whole or part of a bench seat at the side of the picnic table and ensuring the table legs are greater than 800mm apart, or
 - v. ensuring the cantilevered table end (620-640mm deep) is free from obstruction underneath, where a wheelchair user could make an approach to the table end (including ensuring the fixed seats are set a minimum 800mm apart).
 - vi. In regards the associated bench seat, this is ideal to have a seat height of 450mm with a clearance of at least 200mm between the seat and table, with the seat no more than 320mm from the tabletop.
 - b) Additionally:
 - i. Provide a minimum 1540mm (width) and 2070mm (in the direction of travel), clear space on approach to the accessible part of the table. Ensure the accessible component of the picnic table is orientated toward the wheelchair approach.
 - ii. For built shade structures, include a firm, level, 1500mm wide traversable surface around the perimeter of the picnic table (unobstructed by shelter support columns) as this will provide comfortable and usable access to the table for all people.
 - iii. Ensure the picnic table is connected to other park amenities (accessible barbeque, bin, drinking fountain etc) via a continuous accessible path of travel.

- iv. Ideally provide a minimum of one accessible picnic table under a shelter on a firm, level and even ground surface.
- c) Ensure that the accessible circulation spaces under the shelters shall have the minimum 2000mm height clearance. [AS1428.1 1992 Clause 6.2]

3.17 Public Toilets

- Refer to the City's Public Toilet Strategy which further guides the design and implementation of public toilets.
 - a) Accessible unisex sanitary facilities to comply with the full prescriptions of AS1428.1 2009 Clause 15.2. Where possible provide baby change tables within the accessible sanitary facilities.
 - b) Where showers are provided, accessible showers are to comply with the full prescriptions of AS1428.1 2009 Clause 15.5.
 - c) Sanitary compartments for people with ambulant disabilities to comply with the full prescriptions of AS1428.1 2009 Clause 16.
 - d) The provision of an adult change table and hoist and an appropriately furnished room to meet the toileting and changing needs of people with high physical support needs (or the provision of a Changing Places facility) are to meet NCC 2022 S27 or Changing Places Design Specifications 2020 respectively. Consider the location of the adult change facilities where it is central and accessible to people from all areas.

3.18 Barbecue

- Electric, consisting of either brick or aluminium panels.
- Either single or double cooktop.
- Located on a concrete hard-stand or equivalent.
- Generally located in conjunction with a bin, picnic area and drink fountain.
- Where barbecues are provided, at least one accessible barbecue option is to be included. Key access elements to include when an accessible barbecue is provided are as follows:
 - a) Specify an accessible style of barbecue that features (ideally) a 720mm knee clearance height.
 - b) Provide an accessible path of travel to the barbecue area that also connects to the other picnic facilities.
 - c) Provide sufficient hardstand so that a person with a mobility impairment can move around the barbecue and approach the accessible side, this should include a minimum 1000mm wide path of travel up to and alongside the barbecue and 1540x2070mm turning space in front of the barbecue.
- The inclusion of a water supply with a vandal proof tap will be required to facilitate cleaning of the area.
- Consider placement beneath a shelter for shade and protection from rain, assisting with fat tray overflow.

3.19 Drink Fountain

- Constructed of either steel or aluminium, Exteria Slimline drink fountain or equal approved.
- Accessibility to be considered in the drink fountain design, with consideration of the following key access elements;
 - a) Drink fountain to have a circulation space of 1540x2070mm (minimum) allowing a front or side-on approach [AS1428.2 1992 Clauses 6.2 & 27.1 Figure 33]:
 - i. not obstructed by steep slopes or water pooling (from the fountain use);
 - ii. of a firm, traversable, even and level surface
 - b) Provide knee clearance underneath of at least 720mm with sufficient clearance for wheelchair footplate. [AS1428.1 2009 Figure 45]

- c) Has functional components (e.g. spout and drinking bottle refill), that meet the height and depth reach ranges, to be operated by all people from either a standing or seated position, with push button or lever control 800-1000mm high; located on the front of the fountain, that is light to operate.
 - d) Locate the drink fountain on a traversable surface with circulation space that enables all users, including people using wheeled mobility devices, to manoeuvre into a position to operate all functions.
 - e) Orientated the drink fountain so it is accessible but does not obstruct pedestrian traffic.
[AS1428.2 2009 Clause 27.1(a)]
- A tilt-able dog bowl attachment to be included.
 - Drainage is to be provided via either a soak well or a connection to an outlet.
 - Drink fountains to be installed on a traversable surface / hardstand, with crossfall graded onto adjacent garden bed.
 - Isolation value to be incorporated to base of drink fountain.

3.20 Shade Sails

- Constructed shade sail options considered for district or neighbourhood scaled playgrounds.
- Galvanised & powder coated metal poles shall require structural certification by an accredited engineer. Building approval is to be issued by the City prior to installation.
- Shade sails should provide a high level of UVR protection.
- The lowest point of the shade sail should be installed at 2.5m above the tallest part of the equipment installed underneath.
- Poles are to be located so that access is available for removing and reinstalling shade sails.
- Shade sails to be designed and positioned to ensure does not compromise fall zones and compliance with relevant playground safety standards. Shade sail design to be captured in playground audit to ensure fall zone compliance.

3.21 Art

- Refer to the City of Armadale Art Strategy for further detail. With consideration for accessibility, consider the following elements.
 - a) Set the artwork off to ensure the artwork shall not protrude into the accessible paths of travel.
[AS1428.2 2009 Clause 27.1(a)]
 - b) Where artwork is set over accessible paths of travel, ensure that a minimum of 2000mm overhead clearance is maintained. [AS1428.1 2009 Clause 6.2]
 - c) Consider utilising artwork as visually distinctive wayfinding landmarks at locations where directional decisions need to be made, is particularly useful for people with cognitive disabilities or people with low vision.
 - d) Avoid use of strong patterning on pavers or slippery surfaces.

3.22 Youth Spaces – Basketball, pump, skate etc

- Basketball courts are to be placed a reasonable distance from housing. It is likely 50-100m separation from houses is required. A noise assessment will be required for basketball courts to support the submission.
 - Basketball backboards are to be noise reducing and the surface shall utilise noise attenuation surfacing.

- The surface may vary depending on intended usage (surface options include insitu poured concrete, asphalt, plexi-pave or similar, the surface shall be hardwearing)
- Pump and Skate parks are to be placed a reasonable distance from housing. It is likely 50-100m separation from houses is required. A noise assessment will be required to support the submission.

3.23 Fitness

- Equipment shall be installed as per manufacturers' specifications, including any required fall zone and associated fall zone material.
- Preference for static rather than dynamic exercise equipment, to be installed.

4. Softworks

4.1 PSHB compliance – trees, shrubs and mulching

Polyphagous shot-hole borer (PSHB) *Euwallacea fornicatus* is a beetle native to Southeast Asia. Establishment of the pest in WA would have a significant impact on our urban canopy. Measures to reduce the risk of transfer are to be implemented as best practice.

- Mulch is to be free of weeds, propagules, pathogens, allopathic organisms. Pasteurized and Certified to AS 4454 Composts, Soil Conditioners and Mulches. If machinery has been used to handle green waste or mulch within a quarantine area (QA), the equipment must be cleaned of wood material prior to leaving the QA and entering the City.
- When undertaking landscape works, investigate if a Permitted Movement Notice is required. If plants are sourced from a nursery within a QA and are over 2cm diameter, a permit to supply outside of the QA is required. Should the plants be sourced from within a QA, the City requests installers thoroughly inspect the stock for pests and diseases. Copies of the permit and evidence of inspection of plant stock prior to planting will be requested at Practical Completion.
- These trees should also be monitored for activity:
 - *Acer negundo*
 - *Coprosma repens*
 - *Delonix regia*
 - *Erythrina x sykesii*
 - *Ficus macrophylla*
 - *Ficus rubiginosa*
 - *Morus alba*
 - *Morus nigra*

Landscapers should regularly refer to the DPIRD website for an up-to-date list of species affected before planting.

4.2 Bushfire considerations

- A Bushfire Management Plan may apply, and this should be cross referenced. The landscape design is to reflect the agreed POS vegetation classification within the BMP. Please note that the City will not accept designs or management plans that document a Public Open Space (POS) being designed or maintained to low threat. Shade canopy and tree positioning is critical for the hot Perth climate and designs shall target a canopy cover of 60% within parklands.
- When developing Bushfire Management Plans (BMP), note that the City will not accept management plans that document a Public Open Space (POS) being designed or maintained to low threat. Designing and maintaining to 'Low threat' places unobtainable maintenance obligations on the City and is considered a risk to property or persons.
- When drafting the management plan, the best approach is for the post development vegetation classification to reflect the ultimate designed / revegetated state for the POS and be classified accordingly. The Bushfire Attack Level (BAL) ratings of adjacent residential development are required to reflect this and be rated accordingly.
- Under the state guidelines there is provision for exclusions under AS3959-2009 Clause 2.2.3.2 9 (f) Exclusions. This shall only be accepted for POS excluded on the basis of size and it shall be demonstrated that there is no requirement for the City to manage or design POS now or into the future to 'low threat' state.
- The following descriptions are derived from objectives for maintaining low threat vegetation within an Asset Protection Zone (APZ). As such the above description for designing and maintaining low threat vegetation is not acceptable and the City will not accept handover of parklands designed to this standard -
 - Fences within APZ are to be constructed from non-combustible materials.
 - Fine Fuel loads are measured as the total dry weigh of all (fine) fuels which are thinner or have a diameter of or less than 6mm. Measures managing Fine Fuel Load are to include removal of dead vegetation on a regular basis and fuel load should be maintained at < 2 tonnes per hectare (on average).
 - Mulches should be non-combustible such as stone, gravel or crushed mineral earth, or wood chip greater than 6mm in thickness.
 - Frequent mowing of turf to maintain at less than 100mm height.
 - Trees are defined as being greater than 5m in height within the guidelines. Trees at maturity should be minimum distance of 6m from all elevations of the buildings. Dependent on tree species and mature size, trees to be positioned between 5-10m spacing.
 - Branches at maturity should not touch or overhand a building or powerline. Lower branches and loose bark should be removed to a height of two metres above ground and / surface vegetation to provide adequate separation between tree canopy and understorey vegetation.
 - Canopy cover within the APZ should be less than 15% of total APZ area.
 - Tree canopies at maturity should be at least 5 metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15% and are not connected to the tree canopy outside the APZ.
 - Shrubs are defined as 0.5m – 5m in height within the guidelines. No shrub planting to be located under trees or within 3 metres of a building.
 - Shrubs should not be planted in clumps greater than 5 metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres.
 - Ground covers are defined as less than 0.5m in height within the guidelines. In this context, groundcovers can be placed under trees but must be maintained to remove dead plant material as prescribed in fine fuel load. Groundcovers can be located within two metres of

a structure, however, must be placed three metres from windows or doors if greater than 100mm in height.

- Further information can be found in:
 - AS3959:2018 – Construction of Buildings in Bushfire Prone Areas
 - Guidelines for Planning in Bushfire Prone Areas (Department of Planning)
 - Plant Guide within the Building Protection Zone for the Swan Coastal Plain of Western Australia (FESA)

4.3 Turf

- Within the design, turf is to be bordered by a kerb or path, refer to garden bed edging.
- Turf shall be installed above the 1:5 flood zone.
- Installation of subsoils is not preferred, rather the City requires a 700mm separation from peak ground water to the finished turf level.
- Rootzone sand shall be installed for turf to a depth of 200mm for non-active turf and installed rootzone sand shall be AS4419 Certified. Refer to the City's standard oval design specification for active turf sites.
- Gradients within turfed areas shall not exceed 1:6. Designs shall allow for a turning circle of 3m radius around any trees, structures or furniture to enable the ride on mower access.
- All turf shall be agricultural variety kikuyu. The rolled turf shall be sourced from an accredited commercial turf farm.
- The turf shall be free of any visible weeds. Turf shall be certified free of the Sting nematode (*Ibipora Iolii*). The City may nominate an independent laboratory to undertake turf quality assessments should additional verification be required. Provide details of supplier and product to City for approval prior to purchase.

4.4 Garden Beds

- Garden beds shall be bordered by a concrete edge or pathway. The gradient within shall be max 1:5.
- All stock shall be supplied by accredited suppliers and shall be in accordance with the approved Plant Schedules and Drawings.
- Stock purchased shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease and insect pests, with large healthy root systems and no evidence of having been restricted or damaged.
- For garden beds provide 3 x 130mm pots per square meter. Should tubestock be approved, provide 4 x tubestock per square meter.
- At time of planting, install stock with Wetting Agent and Fertiliser as per manufacturers recommendations ('WettaSoil' and Polycote Native Blend 15-0.5-10+TE or equivalent).
- For natural areas, refer to the management plan for details.

4.5 Mulch

- Mulch shall be applied to a depth of 75mm in all planting mix areas.
- Mulch shall be applied to a depth of 100 mm in non-planting areas.
- Mulch shall be kept just clear of the plant stem.
- Mulch shall be chipped Pine Bark Mulch for high visibility areas. Mulch is to be free of weeds, propagules, pathogens, allopathic organisms. Pasteurized and Certified to AS 4454 Composts, Soil Conditioners and Mulches. Provide details of supplier and product to City for approval prior to purchase.
- Site mulch is not approved. Lower grade mulch will be acceptable for low visibility dry gardens subject to approval. Mulch is to be free of weeds, propagules, pathogens, allopathic organisms. Pasteurized and

Certified to AS 4454 Composts, Soil Conditioners and Mulches. Provide details of supplier and product to City for approval prior to purchase.

4.6 New Trees

- Shade canopy and tree positioning should consider maximising shade over pathways and playgrounds. Designs shall target a canopy cover of 60% within parklands.
- Trees are preferred to be located in garden beds instead of turf areas.
- Trees in turf are to be kept to a minimum. Trees installed within turf, shall be installed within 3m diameter tree well.
- Trees shall be planted a minimum 1m from any hard paved surface or edge and 4m away from nearby houses.
- Trees are preferred in 45L, 100L and 200L bag sizes.
- Trees located within paved surfaces, or which are deemed to pose a risk for future root damage, are to be installed with root barriers.
- The Contractor shall ensure that trees are purchased are in accordance with the Australian Standard AS2303 'Tree Stock for Landscape Use' 2015.
- Trees stock shall feature a defined central leader and the apical bud intact.
- Trees stock shall be free from harmful pests and diseases.
- At time of planting install 30-45lt stock with hardwood stakes, painted black 50x50x2000mm. Two stakes per tree, stakes shall be installed with 500mm in ground and 1500mm above ground. Apply ½ bag aged, bagged manure, Polycote Native Blend Controlled Release fertiliser and "WettaSoil" wetting agent or equivalent as per manufactures specifications.
- Tree diversity is encouraged, native trees supported and species selection subject to approval.

4.7 Basins and swales

- All swale/overland flow areas are to be formed, as required, to provide the correct design levels, batter shape and slope in accordance with the requirements of the Urban Water Management Plan (UWMP) and civil drawings. On completion, the drainage areas will require sign off by the contract engineer that they comply with the UWMP and civil drawings.
- All Stock shall be supplied by accredited suppliers and shall be in accordance with the approved Plant Schedules and Drawings.
- Stock purchased shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease and insect pests, with large healthy root systems and no evidence of having been restricted or damaged.
- For swales and basins, provide 4 x tubestock per square meter.
- Ensure conveyance swales have a clear zone to base channel, free of planting (1-2m wide, location dependant).
- Prior to planting ensure swale is at the correct levels.
- Embankment gradients shall be a maximum 1:4 to be planted. 1:3 and steeper shall be rock pitched.
- Swales and basins are typically not mulched with mulch only approved for use above the top water level.
- The Developer is required to obtain the relevant clearing permit(s) from Department of Biodiversity, Conservation and Attractions (DBCA) for the removal of Typha within their development area.

4.8 Revegetation Works

- Works associated to be undertaken within an identified environmentally sensitive area, are to be undertaken in accordance with the endorsed management plan. Refer to environment team.

4.9 Irrigation

- Refer to the City of Armadale specification.

4.10 Groundwater resource

- All groundwater licences applied for by Developers will be for a minimum term of ten (10) years and have a specific abstraction volume and authorised use for “irrigation purposes”. Construction/Dust suppression licences shall be a separate licence.
- The Developer must coordinate the transfer of a current Ground Water Abstraction licence with appropriate abstraction volume commensurate with the type and scale of irrigation requirements six (6) months prior to coincide with formal handover.
- The Department of Water and Environmental Regulation may on occasion not accept or administrate transfer of very small portions of a groundwater licence until such time as the development reaches 25% completion and handover.
- Groundwater licences with less than twelve months until expiry will need to be amended by the Developer, with the Department, prior to handover to the City for the full ten (10) year term.

5. Streetscapes

5.1 Roundabouts

- Treatments to access and local roads shall be limited to street trees, mulch and hard paving.
- Higher order roundabouts such as ones located on distributor roads shall be limited to street trees, grass trees, hard/ feature paving and low ground covers where irrigation is available.
- All roundabouts shall have a minimum 2-3m kerbed paved surround with a minimum 600mm mulch only area before any soft planting in the middle. This provides a safe maintenance zone.
- All proposed tree locations shall be confirmed by engineering to ensure sightlines are achieved.

5.2 Median island treatments

- Median islands shall be limited to street trees, mulch and hard paving. Understorey planting will not be approved unless the median functions as a swale.
- Offset to tree placement from the road edge shall be considered in line with the liveable neighbourhood guidelines.

5.3 Median islands treatments – Swales

- Where median islands form a treatment swale, low ground covers as an understorey planting will be approved in addition to tree planting.
- Offset to tree placement from the road edge shall be considered in line with the liveable neighbourhood guidelines.
- Treatments to slow the waters movement into the swale shall be implemented such as mortared rock and jute matting.
- Swales shall have a 600mm offset to planting from the road edge. This shall be filled with mulch if suitable or a hard treatment such as mortared rock or compacted gravel.
- All proposed tree locations shall be confirmed by engineering to ensure sightlines are achieved.

6. Asset Management and Data Collection

6.1 A-spec

The City requires the developer/consultant to submit A-spec data in GIS READY FORMAT in accordance with the current A Spec standards at Practical Completion.

The City's Asset Management department has the required qualifications and experience in-house to undertake and complete the required A-Spec documentation outlined. The City will complete the works to the quality and standards required by the City, and the Developer will be provided with a copy of the A-Spec documentation for their records at the completion of the works.

The quote for the provision of A-Spec documentation can be provided on request. If the City is awarded the provision of A-Spec documentation Condition 4 will be deemed complete.

For further information or assistance, please contact the City's Asset Management Department on 9394 5000 or email the Asset Management department on assetmanagement@armadale.wa.gov.au. Further information is available on the A Spec website at www.a-specstandards.com.au.

6.2 As-con drawings

In addition to A-spec, the City requires the developer/consultant to submit 'as constructed' drawings in PDF and DWG of:

- As-constructed documentation of landscaping including hard works, soft works, furniture, playgrounds
- As-constructed documentation of irrigation systems
- As-constructed documentation of electrical systems
- As-constructed documentation of scheme water connections

6.3 Asset Schedule

The City requires the developer/consultant to submit information about the landscaping as an asset management schedule including a schedule of items, costs and useful life. This shall be provided at Practical Completion and considered throughout the design phase to ensure the information is captured.

7. Construction Phase

Before proceeding to build the design as per the above specifications, ensure the appropriate approvals are in place.

7.1 Approvals

- Cross reference IFC drawings against approved landscape and civil plans to ensure compliance. Forward the IFC set to the City. Check the approval of the landscape drawings – the approval is valid for two years only.
- Separate approvals are required to be obtained for dust and noise management. Please contact the City's Health Services Department for further details.
- Structural Approval and building licence approval is required for all retaining walls, fencing and all other structures prior to commencement of construction. Provide structurally signed drawings for City reference and records.
- Traffic management and works within the road reserve require an application to be submitted for approval – refer to <https://www.armadale.wa.gov.au/traffic-management-plansworks-road-reserve>

- To mitigate noise complaints, works are to be undertaken between Monday to Friday from 7.00am to 5.00pm

7.2 Contractors

It is the Developers responsibility to ensure Contractors engaged to undertake works are professional and meet the following requirements.

- Contractors shall be experienced, reputable landscape contractors with relevant qualifications to the scope of works.
- Contractors shall have a comprehensive WHS Management System
- Appropriate levels of insurance are to be in place. The Developer is required to hold, current and valid, Public Liability Insurance for no less than \$20 million in any one occurrence, once the POS has been created, during construction and throughout the entire maintenance period over the Public Open Space and any associated landscape works within the development. The Public Liability Insurance shall indemnify the City of Armadale against any potential claims.
- The contractor undertaking the construction works on behalf of the Developer and shall also hold the relevant insurance policies. It is the responsibility of the Developer and their consultant team to ensure that the relevant insurances are in place and valid.
- The Developer is required to install the parkland and associated infrastructure to ensure that there is no potential harm to the users. Issues associated with safety are to be addressed immediately and recorded by the relevant contractor engaged by the Developer.
- The Developer shall be responsible for the protection of existing infrastructure including, but not limited to, kerbing, roads, footpaths, lot hydromulching. Private lots, roads, carbays and verges are not to be utilised for the laydown of materials.

7.3 Site Preliminaries

Before proceeding to build a developer must ensure all site safety and protective measures are in place.

- The developer shall ensure measures are in place to protect existing infrastructure in and around the site.
- The developer shall ensure all existing vegetation to be retained is protected as agreed and arborists recommendations have been actioned.
- The developer shall ensure the work site is safety fenced, and a site-specific safety management plan is in place prior to works being undertaken.
- A plan is in place to protect the site from sand drift and builders rubbish and the Contractor has facilities to remove all waste and by-products generated by the works daily.

7.4 Certification

During the Construction phase the developer shall ensure the following certifications and audits are undertaken as outlined within and provided to the City for its records:

- Soil certification
- Playground Play Safety
- Tree inspections
- Sting nematode certification
- Structural certification
- Soil and mulch certification
- Electrical certification

Standard Construction Inspection Checklist

The City shall attend inspections during the construction phase with the developer to monitor the installation works being undertaken. This checklist is provided for information to developers and will be utilised by City Officers during the construction period.

Inspection Details - Internal Use

Location

Development / Stage

Attendance

File reference

Date

Inspection timing Allow 5 days notice	Start up meeting	
	Tree protection fencing	
	Irrigation mainline installation before backfill	
	Playgrounds, Structures and Concrete footings - Completion of Footings for structures installation before backfill	
	Inspection of supplied plants and trees on site prior to installation	

Start up	Yes/No	Comments
<i>Review inspection list - Are there any approvals or submissions upcoming or due?</i>		
<i>Has a TMP or works in road reserve been completed?</i>		
<i>Inspection timeframes discussed?</i>		
<i>Contact details exchanged?</i>		
<i>Other Comments</i>		

Tree protection	Yes/No	Comments
Agree extent of site fencing and protection of trees and inspect on site actual fencing installed		
Check- are existing trees showing signs of stress?		
Other comments		

Irrigation	Yes/No	Comments
Request joint inspection with Irrigation Supervisor. Allow 5 days notice		
Other comments		

Playgrounds, Structures and Concrete footings	Yes/No	Comments
The Developer will organise an independent audit of the proposed playground prior to construction of the Works and submit to the City for its records		
Any structural drawings or copies of building licenses to be provided?		
Playground footings – site photos and inspection - playgrounds, shelters, furniture		
Shelter footings – site photos and inspection		
Furniture footings – site photos and inspection		
Other comments		

Mulch and planting	Yes/No	Comments
Mulch - Provide details of supplier and product to City for approval prior to purchase		
Turf shall be certified free of the Sting nematode (<i>Ibipora lolii</i>). Provide details of supplier and product to City for approval prior to purchase		
PSHB compliance - Permitted Movement Notice		
Other comments		

Asset Management Schedule

The City requires the developer/consultant to submit information about the landscaping as an asset management schedule including a schedule of items, costs and useful life. This shall be provided at Practical Completion and considered throughout the design phase to ensure the information is captured.

Location Details			
Location			
Development / Stage			
Date of PC Inspection			
Organisation Name		Contact Name :	
Contact Phone		Email :	

Landscape Details			
Installation Contractor		Email :	
		Phone :	
Maintenance Contractor		Email :	
		Phone :	

Item	Measure	QTY	Installation Cost (rate)	Average useful life
Soft works				
Irrigated Garden Bed	sq m			
Basins / swale	sq m			
Natural area	sq m			
Mulch Only Area	sq m			
Turf	sq m			
Trees 45lt	Item			
Tree 100lt and above	item			
Trees 5lt and below	Item			
Hard works				
Playground Softfall Rubber	sq m			
Playground Softfall Mulch	sq m			
Playground pieces	Item			
Shade sails	Item			
Shelters	Item			
Bins	Item			
BBQ (plates)	Item			
Boardwalks	sq m			
Concrete hardstand / Footpaths	sq m			
Bollards	Item			
Fencing	Lin.m			
Custom items - BMX/skate	Item			

Landscape PC Application Form & Checklist

This form must be completed and submitted to the City following the Practical Completion Inspection, in order to formalise PC.

Location Details			
Location			
Development / Stage			
Date of PC Inspection			
Organisation Name		Contact Name :	
Contact Phone		Email :	

Landscape Details			
Installation Contractor		Email :	
		Phone :	
Maintenance Contractor		Email :	
		Phone :	

Irrigation Details			
Installation Contractor		Email :	
		Phone :	
Maintenance Contractor		Email :	
		Phone :	
Bore ID:			
Bore Location:			
Installation Contractor Name:			
Date of Bore Commission:			
Water License Number:			
Water License Allocation:			
Filtration System:			

#	Title	Comment	Requirement:	Tick if Complete or N/A
1	Defect Completion	Defects are be addressed within 2 weeks of Practical Completion meeting.	<ul style="list-style-type: none"> • Photos and report to be provided. • A re-inspection with Developer and City Officers may be requested by the City. 	
2	UWMP Compliance	Final WSUD areas have been installed in accordance with the requirements of the Urban Water Management Plan (UWMP) and civil drawings.	<ul style="list-style-type: none"> • Provide written sign off by the developers engineer that the installed works comply with the UWMP and civil drawings 	
3	A-Spec	The City requires the developer/consultant to submit 'as constructed' drawings and information in GIS READY FORM in accordance with the current A Spec standards at Practical Completion.	<ul style="list-style-type: none"> • Submit A-spec Data in GIS format 	
4	As-Con	'as constructed' drawings in PDF and DWG	<ul style="list-style-type: none"> • As-constructed documentation of all landscaping in PDF and DWG • As-constructed documentation of irrigation systems in PDF and DWG • As-constructed documentation of electrical systems in PDF and DWG • As-constructed documentation of scheme water connections in PDF and DWG 	
5	Audits & Certifications	Provide all for City's Records	<ul style="list-style-type: none"> • Soil certification • Playground Play Safety • Tree inspections • Sting nematode certification • Structural certification • Soil and mulch certification 	

6	Schedules	<p>Provide maintenance Schedule as per City's Landscape Maintenance Specification factsheet.</p> <p>Provide Asset Management Schedule as per Landscape Design and Installation Standards Factsheet</p>	<ul style="list-style-type: none"> • Proposed maintenance schedule (submit via email) • Provide asset management schedule (submit via email) 	
7	Joint Inspection Schedule	<p>The City shall attend inspections with the developer to monitor the maintenance being undertaken.</p>	<ul style="list-style-type: none"> • Proposed Inspection schedule with dates 	
8	Bore Information	<p>Should a bore be constructed in this phase construction information will be required. Should the City and Developer be sharing a bore, a MOU is to be drafted.</p>	<ul style="list-style-type: none"> • Copy of the original Bore Construction Drillers Log. • Bore Metering -Developer or Agent must: <ul style="list-style-type: none"> ○ Provide the following details of the installation to the Department within 30 days of construction and to the City of Armadale within 30 days of the confirmed date of POS Handover. ○ GPS Coordinate references relating to the location of the meter or another approved description of its location. ○ Date of installation ○ Meter reading at the time of installation. ○ Make, size, type and serial number of the meter. ○ After the meter is installed drawings or annotated photographs of the meter should be taken ○ The length of pipe connecting the draw-point to the upstream flange of the meter. ○ The length of pipe between the downstream flange of the meter and the first-bend or take-off. ○ The direction of the water flow through the meter. ○ A copy of the manufacturer's specifications for installation of the meter or written advice from the 	

			<p>person who installed the meter that it complies with the manufacturer's specifications for installation must also be provided.</p> <ul style="list-style-type: none"> • Execute MOU as required 	
9	Bond Release Request	Should an outstanding works bond be ready for release as per the Deed of Agreement, the developer is to submit a request to release.	<ul style="list-style-type: none"> • Written request 	
10	Playground Maintenance	<p>The staff performing the works within playgrounds are required to be qualified and trained in playground maintenance.</p> <p>A minimum qualification will be Playground Inspectors Course 1 or equivalent.</p> <p>The Developer will ensure all staff performing maintenance works on the Playgrounds / Equipment will have Western Australian and/or Federal Police Clearance Certificates (working with children)</p>	<ul style="list-style-type: none"> • Qualifications and police clearance documentation 	
11	Typha	The Developer is required to obtain the relevant clearing permit(s) from Department of Biodiversity, Conservation and Attractions (DBCA) for the	<ul style="list-style-type: none"> • Provide Copy if required 	

		removal of Typha within their development area.		
12	Electrical Compliance	Electrical certification for all installed electrical items supplied	<ul style="list-style-type: none"> • Certification to be supplied (submit via email) 	
13	Signage	Site signage is installed	<ul style="list-style-type: none"> • Signage to note developer is maintaining parkland • Contact details for developer 	

Internal Use			
Submission notes			
CM9 ref:		Date Received:	
Finalised by:		Sign off:	

Landscape Maintenance Standards

This factsheet is intended to assist applicants understand the City's minimum expectations relating to maintenance of public open space and streetscapes when under the developer maintenance period.

This document has been produced to guide developers on the minimal maintenance requirements for streetscapes and public open spaces during the 2-year consolidation period prior to handover to the City. This establishment period is essential for planting establishment and these guidelines have been created to ensure a standard approach is implemented across all new estates.

This specification should be read in conjunction with the City's Public Open Space Landscape Guideline and the Landscape Design and Installation Standards document.

Please note this fact sheet refers to landscaping maintenance expectations for parklands. For natural areas with a management plan approved by the City's environment team please refer to the environment team.

Maintenance Period Submissions

During the maintenance period, the developer shall submit a number of documents for review or approval. The submissions include:

Submission	Timing	Submitted for
Proposed Maintenance Schedule	At PC	Approval
Playground staff Certification and police clearance documentation	At PC	Review
Maintenance Report	Every 6 months	Review
Electrical testing for lighting or BBQ	Every 6 months	Review
Bore water meter readings and report to DWER as required with cc to City	Yearly	Review

Maintenance Schedule

At Practical Completion (PC) the Developer shall submit to the City for approval a proposed maintenance schedule for the extent of 2 year consolidation period. This schedule shall form the basis of the monthly report.

The Schedule shall –

- Be divided into weekly, monthly and yearly intervals with details of all maintenance tasks clearly indicated and programmed into the schedule allowing for seasonal changes as required, for the extent of works area.
- In particular the schedule shall note as relevant including timeframes the following items:
 - Sand drift and Rubbish Inspection and Removal
 - Rubbish Bin Removal and Cleaning
 - Park Furniture Inspection and Maintenance
 - Hard Landscaping Inspection and Maintenance
 - Weed Control Inspection and Maintenance
 - Graffiti Removal Inspection and Maintenance
 - Irrigation inspection and Maintenance including proposed hardening off requirements
 - Plant and tree inspections, maintenance and replacements
 - Lawn inspection and Maintenance
 - Cleaning of BBQ's
 - Playground and softfall inspection and maintenance
 - 6 month electrical testing for lighting or BBQ

Maintenance Reporting

Every 6 months the developer shall provide a collated maintenance report outlining the works undertaken in the last six months. Additional joint inspections will be requested should the reporting not indicate acceptable maintenance standards are being applied.

The report shall demonstrate the following

- Records of Attendance and maintenance work undertaken on a weekly, fortnightly or monthly program including details of actions, works undertaken, dates and photos
- Results for testing or auditing undertaken such as
 - electrical testing for lighting or BBQ s
 - turf soil analysis testing
 - playground audits by playground inspector
 - tree health audit by arborists

Maintenance Period Inspections

After acceptance of PC, the developer shall arrange a Joint Inspection Schedule. The City shall attend inspections with the developer to monitor the maintenance being undertaken.

Inspection	Timing	Inspected for
Maintenance inspection	12 months after Practical Completion	General landscape and 12-month hard works defects
Pre-handover inspection	21 months after Practical Completion	Preparing for handover

Maintenance Period Signage

Site signage shall be installed that advises the general public the parkland is under the maintenance of the developer and all enquires in regards to parkland maintenance shall be directed to the developer – this sign shall also provide a contact (email). The sign shall be removed on handover acceptance by the City.

Standard Maintenance Guidelines

It is expected a developer shall maintain the landscape in peak condition at all times. For clarity it is expected during the consolidation period the Developer shall be responsible for the following:

General

- Ensure all works are arranged to keep the landscape in peak condition and growing healthily
- Ensure that sand drift from adjoining undeveloped lots is controlled / restricted during the maintenance period. Any areas impacted by sand drift will need to be rectified, levels adjusted and replanted/turfed
- Ensure that rubbish from adjoining lots / builders rubbish is controlled during the maintenance period. Regular rubbish pick up to present the park to acceptable standards at all times is required.

Turf Maintenance

- Inspect turf to ensure that turf is not exhibiting signs of stress. Remedy any problems evident by appropriate action as required. Turf to have a deep green consistent colour across all areas and shall not be discoloured or suffering from signs of fertiliser/nutrient deficiencies. Top dress, weed and fertilise grass as required
- Turf shall be maintained on a fortnightly basis and swarth height cut to be 18mm- 20mm, dependable on the season and at the discretion of the City. The depth of thatch should not exceed 10mm
- Removal of any grass clippings from the surface immediately after mowing.
- Monitoring and biological/chemical control of any invasive pest, weed or disease infestation.
- Regular whippersnipping around any impediments to the mowing patterns, i.e. bollards, walls, trees, valve boxes and other structures.
- Basic weed control via chemical or manual removal.
- The Contractor will make follow up fertiliser applications with a complete fertiliser with a minimum NPK ratio of 12:3:10, washed in in accordance with Manufacturers specifications.
- 3 months prior to handover turf soil analysis testing is to be undertaken and improvements implemented

New Trees

- Inspect all installed trees to ensure that trees are not exhibiting signs of stress. Remedy any problems evident by appropriate action as required.
- Inspect stakes and ties and adjust and replace as necessary to prevent trees being damaged by wind or chaffing. Any replacement stakes and ties shall match those installed at planting.

Ensure trees are suitably staked to encourage upright growth but remove stakes as required when the tree can maintain structure and upright growth without support.

- Uplift trees carefully during maintenance period to encourage a central leader trunk, as required;
- Prune to remove dead, diseased, damaged and dying limbs. Collect all debris arising from pruning operations and remove from site. This is expected a minimum 1 visit per fortnight;
- Remove and replace any dead, diseased, or dying trees immediately. Any widespread failures of one species are to be reported to the City so that an appropriate substitute can be identified prior to replacement;
- Ensure all irrigation or truck watering is undertaken to ensure steady and healthy growth;
- Allow for a 75mm re-mulch at time of handover around tree wells
- Mulch shall be chipped Pine Bark Mulch as approved by the City. Mulch shall be free of weeds, propagules, pathogens, allopathic organisms, Pasteurized and Certified to AS 4454 Composts, Soil Conditioners and Mulches.

Existing Trees

- Inspect all existing trees to ensure that trees are not exhibiting signs of stress. Remedy any problems evident by appropriate action as required.
- Existing trees are monitored through the maintenance period and any required pruning, uplifting, speciality requirements are undertaken by the Developer to ensure the best chance of success for the existing retained trees. Prune to remove dead, diseased, damaged and dying limbs. Collect all debris arising from pruning operations and remove from site.
- Developer to obtain Arborist report on the existing trees (as agreed with City, generally trees near playgrounds or pathways will be requested) prior to handover. All immediate works outlined in the Arborist report are to be undertaken prior to handover

Shrub planting and garden beds

- Undertake rubbish collection including removal of all cigarette butts, bottles, cans, litter, vegetative matter (dead leaves, grass cuttings, etc) and any other undesirable material from new landscaped areas Maintain the garden beds areas free from weeds and grasses by hand weeding or by application of approved herbicide. All weeds greater than 30cm are to be removed by hand
- Remove and replace any dead, diseased, or dying vegetation immediately. Any widespread failures of one species are to be reported to the City so that an appropriate substitute can be identified prior to replacement;
- Dead head species as required in appropriate season. Collect all debris arising from dead heading operations and remove from site;
- Prune any planting overhanging paths or other pathways. This is expected a minimum 1 visit per fortnight;
- Ensure all irrigation or truck watering is undertaken to ensure steady and healthy growth
- Allow for a 75mm re-mulch at time of handover and as required to keep the average depth to 75mm
- Mulch shall be chipped Pine Bark Mulch as approved by the City. Mulch shall be free of weeds, propagules, pathogens, allopathic organisms, pasteurized and certified to AS 4454 Composts, Soil Conditioners and Mulches.

- Undertake infill planting on a regular basis to meet the agreed planting numbers / endorsed density at time of handover.

Basins and swales

- Undertake clearing and pruning to ensure base of swale is clear of any planting.
- Undertake inspections of rocks to ensure base of swale is clear of any blockages. This is expected a minimum 1 visit per month;
- The Developer is required to obtain the relevant clearing permit(s) from Department of Biodiversity, Conservation and Attractions (DBCA) for the removal of Typha within their development area.
- Undertake infill planting during the winter planting season as required to meet the agreed planting numbers to ensure POS achieves endorsed density at time of handover

Hard Landscaped Areas & Furniture

- All hard landscaping shall be kept free of graffiti, dirt, litter, weeds and any other undesirable material.
- Minor repairs to paving, walls and furniture immediately on discovery of issue;
- High pressure cleaning to paving, walls and furniture once every 3 months;
- Staining and oiling to timber to keep in prime condition once every 6 months;
- All graffiti shall be removed immediately upon discovery.

Rubbish Bins

- Empty rubbish bins atleast once a week or more often as required in high profile areas;
- Clean bin with high pressure water cleaner once every 3 months

Drink Fountains

- Expected minimum 1 visit a fortnight to ensure working;
- Fix and repair as required. Repairs to be undertaken within 24hrs of reporting.

BBQ

- Expected minimum 1 visit a fortnight including
 - Check BBQ is working
 - Removal of any food particles around the BBQ including burnt carbon
 - Degrease and clean hotplate and BBQ surface.
 - Removal and disposal of grease and waste from catch tray
 - Cleaning and sanitising the BBQ Surface and surround with high pressure water cleaner
- Electrical safety inspections, carried out every 6 months. Reports to be issued to City for our records

Playground Equipment

Playground and softfall inspection and maintenance minimum 1 visit a fortnight. Undertake:

- Playground to be inspected by an accredited playground inspector. The staff performing the works within playgrounds are required to be qualified and or trained in playground maintenance. A minimum qualification will be Playground Inspectors Course 1 or equivalent. The Developer will ensure all staff performing maintenance works on the Playgrounds / Equipment will have Western Australian and/or Federal Police Clearance Certificates including working with children.
- Inspection that all bolts, joints & clamps are in place and fastened in accordance with the manufacturers specification. Nuts and bolts recessed and / or capped;
- Inspection that all chains are sound, "S" hooks are closed and attached to frame;
- Inspection that all bearings are moving freely;
- Inspection that all seats attached correctly in accordance with the manufacturers specification;
- Inspection that there is no visible signs of movement in the equipment foundations and equipment foundations have appropriate soft fall coverage;
- Inspection that all slides are free of cracks and have a smooth safe surface;
- Inspection that all equipment is free of rust, corrosion and graffiti;
- Inspection that all panels, rails are firm and secure;
- All vandalised components are made safe and / or removed;
- Ladders attached correctly to equipment and have no loose rungs;
- Springs are firm with no signs of fracturing;
- Inspect all timber equipment and clean off any material that would affect its intended purpose. Replace or Repair timber components that are splitting, broken or weathered;
- Undertake all work necessary to maintain a safe play space in accordance with Australian Standards
- High pressure clean all play equipment two (2) times per annum.
- Stain / oil all timber equipment using products as stipulated by the manufacturer;

Playground Softfall

- Playground and softfall inspection and maintenance minimum 1 visit a fortnight;
- Undertake all work necessary to maintain a safe play space in accordance with Australian Standards;
- Ensure all hollowed out areas in softfall material around or under playground equipment, i.e. under swings, see-saws and at the end of slides are to be raked back level. Allow for Top ups of sand or mulch as required throughout the extent of consolidation

Playground Surfacing -Sand

- Mechanical sand sifting will be performed four (4) times per annum and is to include all areas of the play pit and will penetrate to a depth of one hundred (100)mm. The mechanical sieve must screen the sand to remove material greater than six (6)mm in diameter. All debris from this process will be collected and retained in suitable devices and removed from site. No debris / litter to be placed in park bins as these are for the community. The developer will ensure appropriate signage is installed prior to works commencing advising the community of the activities to be undertaken.

Playground Surfacing -Rubber

- The rubber surface shall be blown. All debris from this process will be collected and retained in suitable devices and removed from site. No debris / litter to be placed in park bins as these are for the community. Place any needles in approved waste disposal units.

Irrigation

- The irrigation system shall be maintained and operated as to maintain the landscape in peak condition, optimising growth rates without causing water logging of the soil or wasting water;
- The effective operation of the irrigation system shall be the responsibility of the developer in consultation with the City to ensure the works do not impact negatively on the wider irrigation requirements of the system;
- All repairs shall be made within 24 hours of discovery. After repairs or alterations are made to the system, testing shall be performed and any further necessary repairs shall be made to put the system in good working order;
- Repair any washouts or erosion associated with faults in irrigation system at the same time as making repairs to the system.
- In the event the irrigation system is not functioning due to failure or maintenance, the Developer is responsible to truck water to keep the plants and trees in optimum growing conditions;
- Developer to undertake water meter readings and report to DWER as required
- Irrigation cabinet to be locked to the contractors requirements during the consolidation and maintenance period. At handover the cabinet lock shall be altered to the City of Armadale R Key/Lock. Should there be a 'shared use' arrangement, including shared use of a cabinet, the cabinet shall be locked to City's R key.
- Developer to undertake water meter readings and report to DWER yearly
- Shared bores shall be working to agreed station run times.

12 month Inspection Checklist

Inspection Details	
Location	
Development / Stage	
Attendance	
Date	
12 month inspection	

Submissions	Yes/No	Comments
Are there any submissions over due?		
<i>Maintenance Reports - Every 6 months</i>		
<i>Bore water meter readings and report to DWER as required with cc to City</i>		

Soft Landscaping	Yes/No	Comments
Turf		
<i>Is the turf healthy, establishing and free of weeds and pests?</i>		
<i>Other comments</i>		
New trees		
<i>Are the trees healthy, establishing and free of weeds and pests?</i>		
<i>Are the trees staked and supported</i>		
<i>Do the trees require uplifting or formative pruning</i>		
<i>Other comments</i>		

Existing Trees		
<i>Are existing trees showing signs of stress?</i>		
<i>Other comments</i>		
Shrub planting and garden beds		
<i>Are the beds well presented and weed free?</i>		
<i>Is the mulch neat, correct depth and suitable type?</i>		

<i>Is the planting density and survival rates as per endorsed plans?</i>		
<i>Other comments</i>		
Basins and Swales		
<i>Is the flow path clear?</i>		
<i>Is the vegetation establishing and clear of weeds?</i>		
<i>Is the water draining as per the UWMP?</i>		<i>Refer to subdivision team</i>
<i>Other comments</i>		

Revegetation / Natural Areas – Refer to Environment team	Yes/No	Comments
<i>Is weedcover meeting criteria set out in management plan?</i>		<i>Refer to Environment team</i>
<i>Are planting densities and survival rates meeting criteria set out in management plan?</i>		<i>Refer to Environment team</i>
<i>Is there a reporting milestone due to demonstrate management plan outcomes?</i>		<i>Refer to Environment team</i>
<i>Other comments</i>		

Hard Landscaping	Yes/No	Comments
Hard Landscaped Areas & Furniture		
<i>Is the hard landscaping free of graffiti, dirt, litter, weeds and any other undesirable material ?</i>		
<i>Is high pressure cleaning required?</i>		
<i>Does furniture require oiling or maintenance?</i>		
<i>Other comments</i>		
Rubbish bin		
<i>Is the bin regularly emptied?</i>		
<i>Is high pressure cleaning required?</i>		
<i>Other comments</i>		
Drink Fountain		
<i>Has it been regularly cleaned?</i>		
<i>Is it working?</i>		
<i>Other comments</i>		
BBQ		
<i>IS the BBQ clean? Clear of food particles around the BBQ including burnt carbon, recently been degreased and cleaned hotplate. Is it working</i>		
<i>Is high pressure cleaning or sanitising required?</i>		
<i>BBQ electrical safety inspections are to be carried out every 6 months. Confirm</i>		
<i>Other comments</i>		
Playground Equipment		
<i>Is the playground clean, maintained and softfall reasonable?</i>		

<p><i>Is any work necessary to provide a safe play space in accordance with Australian Standards ?</i></p>		
<p><i>The staff performing the works within playgrounds are required to be all qualified and or trained in playground maintenance. A minimum qualification will be Playground Inspectors Course 1 or equivalent.</i></p> <p><i>The Developer will ensure all staff performing maintenance works on the Principal's Playgrounds / Equipment will have Western Australian and/or Federal Police Clearance Certificates including a working with children check.</i></p> <p><i>Is this documentation up to date ?</i></p>		
<p><i>Other comments</i></p>		

<i>Irrigation</i>	<i>Yes/No</i>	<i>Comments</i>
<p><i>IS the system maintained and operated as to maintain the landscape in peak condition</i></p>		
<p><i>Have any replacements been undertaken and are the works to the City's specification</i></p>		
<p><i>Other comments</i></p>		

Internal Use

Inspected by:		Signed:	
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12 month Inspection Checklist

Inspection Details	
Location	
Development / Stage	
Attendance	
Date	
12 month inspection	

Submissions	Yes/No	Comments
Are there any submissions over due?		
<i>Maintenance Reports - Every 6 months</i>		
<i>Bore water meter readings and report to DWER as required with cc to City</i>		

Soft Landscaping	Yes/No	Comments
Turf		
<i>Is the turf healthy, establishing and free of weeds and pests?</i>		
<i>Other comments</i>		
New trees		
<i>Are the trees healthy, establishing and free of weeds and pests?</i>		
<i>Are the trees staked and supported</i>		
<i>Do the trees require uplifting or formative pruning</i>		
<i>Other comments</i>		

Existing Trees		
<i>Are existing trees showing signs of stress?</i>		
<i>Other comments</i>		
Shrub planting and garden beds		
<i>Are the beds well presented and weed free?</i>		
<i>Is the mulch neat, correct depth and suitable type?</i>		

<i>Is the planting density and survival rates as per endorsed plans?</i>		
<i>Other comments</i>		
Basins and Swales		
<i>Is the flow path clear?</i>		
<i>Is the vegetation establishing and clear of weeds?</i>		
<i>Is the water draining as per the UWMP?</i>		<i>Refer to subdivision team</i>
<i>Other comments</i>		

Revegetation / Natural Areas – Refer to Environment team	Yes/No	Comments
<i>Is weedcover meeting criteria set out in management plan?</i>		<i>Refer to Environment team</i>
<i>Are planting densities and survival rates meeting criteria set out in management plan?</i>		<i>Refer to Environment team</i>
<i>Is there a reporting milestone due to demonstrate management plan outcomes?</i>		<i>Refer to Environment team</i>
<i>Other comments</i>		

Hard Landscaping	Yes/No	Comments
Hard Landscaped Areas & Furniture		
<i>Is the hard landscaping free of graffiti, dirt, litter, weeds and any other undesirable material ?</i>		
<i>Is high pressure cleaning required?</i>		
<i>Does furniture require oiling or maintenance?</i>		
<i>Other comments</i>		
Rubbish bin		
<i>Is the bin regularly emptied?</i>		
<i>Is high pressure cleaning required?</i>		
<i>Other comments</i>		
Drink Fountain		
<i>Has it been regularly cleaned?</i>		
<i>Is it working?</i>		
<i>Other comments</i>		
BBQ		
<i>IS the BBQ clean? Clear of food particles around the BBQ including burnt carbon, recently been degreased and cleaned hotplate. Is it working</i>		
<i>Is high pressure cleaning or sanitising required?</i>		
<i>BBQ electrical safety inspections are to be carried out every 6 months. Confirm</i>		
<i>Other comments</i>		
Playground Equipment		
<i>Is the playground clean, maintained and softfall reasonable?</i>		

<p><i>Is any work necessary to provide a safe play space in accordance with Australian Standards ?</i></p>		
<p><i>The staff performing the works within playgrounds are required to be all qualified and or trained in playground maintenance. A minimum qualification will be Playground Inspectors Course 1 or equivalent. The Developer will ensure all staff performing maintenance works on the Principal's Playgrounds / Equipment will have Western Australian and/or Federal Police Clearance Certificates including a working with children check. Is this documentation up to date ?</i></p>		
<p><i>Other comments</i></p>		

<i>Irrigation</i>	<i>Yes/No</i>	<i>Comments</i>
<p><i>IS the system maintained and operated as to maintain the landscape in peak condition</i></p>		
<p><i>Have any replacements been undertaken and are the works to the City's specification</i></p>		
<p><i>Other comments</i></p>		

Internal Use

<p>Inspected by:</p>		<p>Signed:</p>	
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Landscape Handover – Specification, Application Form & Checklist

This document is intended to assist applicants understand the City’s minimum expectations relating to the handover of POS and streetscapes to the City.

This form must be completed and submitted to the City following the Pre-Handover Inspection of Public Open Spaces and Streetscapes

This document has been produced to guide developers on the standard requirements of landscape handover.

This specification should be read in conjunction with the City’s Public Open Space Landscape Guideline and the Landscape Maintenance Specification Factsheet.

Pre-Handover Expectations

During the maintenance period, the standard maintenance works undertaken should ensure minimum works are required at time of handover. The following list is provided as a guide :

#	Soft Landscaping	Typical Requirements at Handover
1	Turf	<p>Ensure:</p> <ul style="list-style-type: none"> The turf is healthy, green, full coverage well established and free of weeds and pests,. A turf soil, tissue and water analysis testing has been undertaken in the last 3 months prior to handover and improvements implemented, including top dress, weed and fertilise grass as required <p>Provide:</p> <ul style="list-style-type: none"> A copy of the turf soil, tissue and water analysis testing
2	New trees	<p>Ensure:</p> <ul style="list-style-type: none"> The new trees are healthy, establishing and free of weeds and pests Dead / broken branches have been removed Trees are staked and supported. The trees have been subject to uplifting or formative pruning over the 2 year maintenance period Tree replacements have been undertaken in a timely manner, minimum of 6 months prior to handover and suitable species have been selected in accordance with the approved plans.
3	Existing Trees	<p>Ensure:</p> <ul style="list-style-type: none"> The existing mature trees are healthy and free of pests. Dead / broken branches have been removed An arborist report has been undertaken in the last 3 months prior to handover and improvement works required. <p>Provide:</p> <ul style="list-style-type: none"> A copy of the arborist report

4	Shrub planting and garden beds	<p>Ensure:</p> <ul style="list-style-type: none"> • The beds are well presented, weed free and freshly mulched • The planting has established and density numbers are as per endorsed plans. Bare patches are to be filled a minimum of 6 months prior to handover • Irrigation has been operational or areas of establishment only irrigation have been hardened off and the system is switched off for those areas • Prune any planting overhanging paths or other pathways
5	Basins and swales	<p>Ensure:</p> <ul style="list-style-type: none"> • The WSUD areas are well presented, weed free and freshly mulched where required • The planting has established and density numbers are as per endorsed plans. Bare patches are to be filled 6 months prior to handover • The flow path is clear and the WSUD area is functioning as per the UWMP
6	Revegetation	<ul style="list-style-type: none"> • Refer to Environment team Requirements as set out in the approved management plan
7	Mulch	<p>Ensure:</p> <ul style="list-style-type: none"> • Mulch shall be applied to a depth of 75mm in all planting mix areas. • Mulch shall be applied to a depth of 100 mm in non-planting areas. . • Mulch shall be chipped Pine Bark Mulch for high visibility areas. Mulch is to be free of weeds, propagules, pathogens, allopathic organisms. Pasteurized and Certified to AS 4454 Composts, Soil Conditioners and Mulches. • Site mulch is not approved. Lower grade mulch will be acceptable for low visibility dry gardens subject to approval. Mulch is to be free of weeds, propagules, pathogens, allopathic organisms. Pasteurized and Certified to AS 4454 Composts, Soil Conditioners and Mulches.

#	Hard Landscaping	Typical Requirements at Handover
1	Paving	<p>Ensure:</p> <ul style="list-style-type: none"> • The paved area is free of graffiti, dirt, litter, weeds and any other undesirable material • The paving is not cracked and showing signs of excessive wear • Prune any planting overhanging paths or other pathways
2	Furniture	<p>Ensure:</p> <ul style="list-style-type: none"> • The furniture is free of graffiti, dirt and in good condition • Battens are firmly fixed • Timber shall be oiled • Bins are clean and regularly emptied. If keyed rekey to parks P&G key • Drink Fountains are in working order and clean . • Utilities are to be transferred at time of handover • Shelters are clean, free of graffiti, rust and recently pressure washed
3	BBQ	<p>Ensure:</p>

		<ul style="list-style-type: none"> The BBQ is clean and clear of food particles and recently been degreased, fat tray is empty and internal cabinet clean BBQ is in working order Electrical safety inspections carried out within last 3 months Utilities are to be transferred at time of handover <p>Provide:</p> <ul style="list-style-type: none"> Copies of Electrical safety inspections
4	Lighting	<p>Ensure:</p> <ul style="list-style-type: none"> Lighting is in working order Electrical safety inspections carried out within last 3 months Utilities are to be transferred at time of handover <p>Provide:</p> <ul style="list-style-type: none"> Copies of Electrical safety inspections including RCD testing
5	Playground Equipment	<p>Ensure:</p> <ul style="list-style-type: none"> The playground clean, maintained and softfall has been topped up to required levels Stain / oil all timber equipment using products as stipulated by the manufacturer Undertake a playground safety audit including structural assessment as per IPWEA Condition Ratings and a Softfall attenuation impact test is to be completed. The Safety report shall be undertaken by accredited playground auditor for safety compliance. Implement changes as required <p>Provide:</p> <ul style="list-style-type: none"> Copies of safety and condition assessment report
6	Bollards / fencing	<p>Ensure:</p> <ul style="list-style-type: none"> In good condition Ensure bollards are easily removeable from sleeve Locks - Rekeyed to City's P&G key (Armadale Lock & Key)
7	Bespoke Structures	<p>Ensure:</p> <ul style="list-style-type: none"> All bespoke structures, shelters, boardwalks, decks are to be reviewed by a structural engineer and condition assessed. All recommendations are to be implemented. <p>Provide:</p> <ul style="list-style-type: none"> Copies of structural and condition assessment report

#	Irrigation	Typical Requirements at Handover
1	System	<p>Ensure:</p> <ul style="list-style-type: none"> The irrigation system has been maintained and is operational in peak condition Any replacements undertaken and are to the City's standard specification and approved drawing set Areas of establishment only irrigation have been hardened off and the system is switched off for those areas <p>Provide:</p> <ul style="list-style-type: none"> Irrigation audit

		<ul style="list-style-type: none"> • Irrigation system including filtration system service records to be provided for City's records • Current irrigation schedule
2	Bore and cabinet	<p>Ensure:</p> <ul style="list-style-type: none"> • A Shared use MOU has been set up where required • The cabinet lock shall be altered to the City of Armadale R Key/Lock. • Water meter readings have been actioned during the maintenance period • Where the irrigation cabinet and associated infrastructure are to be 'Shared Use', and under the control of the City following handover; the City may install their own data sim/modem to provide remote maintenance access capabilities. In this instance the Developer's contractor (looking after the Developer's portion of the development) will be set up as a restricted user for the particular site. • Groundwater Licence has been transfer to the City's management including payment, with full volume transferred <p>Provide:</p> <ul style="list-style-type: none"> • Developer to undertake final water meter reading prior to handover and advise City Irrigation Supervisor

Handover Completion Application Form & Checklist

Location Details			
Location			
Development / Stage			
Date of Pre-Handover Inspection			
Organisation Name		Contact Name :	
Contact Phone		Email :	

#	Item Title	Comment	Requirement:	Tick if Complete
1	Defect Completion	<p>Defects are identified at the 3 month pre-handover inspection. Defects are to be completed 2 weeks prior to the agreed handover date, ready for reinspection</p> <p>Defect inspection is valid for up to 6 months. After that another inspection is required.</p>	<ul style="list-style-type: none"> • Re-inspection 2 weeks prior to the agreed handover date 	
2	Typical Requirements at Handover	Refer to attached specification and ensure all relevant actions have been undertaken	<ul style="list-style-type: none"> • Ensure the landscape and irrigation meets the required standards • Provide all required audits, documentation and reports • Transfer utilities and licenses 	

3	Irrigation System	The irrigation system will be subject to its own inspection, 2 weeks prior to handover. Two weeks prior to the handover date, contact the City's Supervisor Irrigation on telephone number 9394 5322 to inspect and test the irrigation system.	<ul style="list-style-type: none"> Any identified defects are to be rectified prior to final handover date 	
4	Bond Release Request	Should an outstanding works bond be ready for release as per the Deed of Agreement, the developer is to submit a request to release.	<ul style="list-style-type: none"> Written request (submit via email) 	

Internal Use			
Submission notes			
CM9 ref:		Date Received:	
Inspected by:		Sign off:	

Street Tree Design and Installation Standards

This document is intended to assist applicants understand the City's minimum expectations relating to the design and installation of Street Trees installed under the subdivision process

Design Phase

This factsheet is to be read in conjunction with the City's Public Open Space Landscape Guidelines. The Landscape Guidelines provides detail on the required submissions for each stage, including the street tree masterplan stage. Refer to the Landscape Guidelines for further detail.

Species selection shall be approved by the City. The City strongly encourages species that will grow to provide a diverse and sustainable Urban Forest and species selection shall be in accordance with the current Urban Forest Strategy.

Tree Planning Guide

Street Tree Placement

The location of the street tree within the road hierarchy is governed by three overarching documents - Liveable Neighbourhoods (LN), Austroads and the Utility Providers Code of Practice for Western Australia (UPC). In addition to the overarching guidelines in Liveable Neighbourhoods, Austroads and the Utility Code of Provider's, the placement of street trees will also need to consider:

- Planted within the 2.7 metre street tree and lighting alignment according to UPC/LN;
- A minimum of 0.8 metres from a vehicle crossover or drainage pit, with 1.5 metres preferred;
- A minimum of 15 metres from a kerb corner alignment on any side of an intersection;
- A minimum of 10 metres from the approach side of a pedestrian crossing / pram ramp and 5 metres from the departure side;
- 7 metres from any lane way or vehicle right of way;
- Set back from the road edge at least 0.75 metres;
- A minimum of 5 metres from a light pole or bus shelter;
- Planted at least 500mm away from footpaths

Tree Stock

- Trees within streetscapes are preferred to be installed as 30-45lt sizes
- Trees installed shall meet the Australian Standard AS2303 'Tree Stock for Landscape Use' 2015
- Trees stock shall feature a defined central leader and the apical bud intact
- Trees stock shall be free from harmful pests and diseases

Tree Installation Guide

Approvals

- Traffic management and works within the road reserve require an application to be submitted for approval – refer to <https://www.armadale.wa.gov.au/traffic-management-plansworks-road-reserve>
- To mitigate noise complaints, works are to be undertaken between Monday to Friday from 7.00am to 5.00pm
- The verge is the section of land where essential services such as power, water, gas and telecommunications are located. These services are generally located below ground. It is important to ensure no proposed works interfere with the services. It is recommended Contractors undertake a dial before you dig within 30 days of proposed works.

Contractors

It is the Developers responsibility to ensure Contractors engaged to undertake works are professional and meet the following requirements

- Contractors shall be experienced, reputable landscape contractors with relevant qualifications to the scope of works.
- Contractors shall have a comprehensive WHS Management System
- Appropriate levels of insurance are to be in place. The Developer is required to hold, current and valid, Public Liability Insurance for no less than \$20 million in any one occurrence. The Public Liability Insurance shall indemnify the City of Armadale against any potential claims.
- The contractor undertaking the construction works on behalf of the Developer and shall also hold the relevant insurance policies. It is the responsibility of the Developer and their consultant team to ensure that the relevant insurances are in place and valid.
- The Developer is required to install the street tree infrastructure to ensure that there is no potential harm to the users. Issues associated with safety are to be addressed immediately and recorded by the relevant contractor engaged by the Developer.
- The Developer shall be responsible for the protection of existing infrastructure including, but not limited to, kerbing, roads, footpaths, lot hydromulching. Private lots, roads, carbays and verges are not be utilised for the laydown of materials.

Site Preliminaries

Before proceeding to build a developer must ensure all site safety and protective measures are in place.

- The developer shall ensure measures are in place to protect existing infrastructure in and around the site
- The developer shall ensure all existing vegetation to be retained is protected as agreed and arborists recommendations have been actioned
- The developer shall ensure a site specific safety management plan is in place prior to works being undertaken
- A plan is in place to protect the site from sand drift and builders rubbish and the Contractor has facilities to remove all waste and by-products generated by the works daily.

Tree Installation

- At time of planting install 30-45lt stock with hardwood stakes, painted black 50x50x2000mm. Two stakes per tree, stakes shall be installed with 500mm in ground and 1500mm above ground. Apply ½ bag aged bagged manure, Polycote Native Blend Controlled Release fertiliser and “WettaSoil” wetting agent or equivalent as per manufactures specifications.
- Mulch to a depth of 75mm. Mulch shall be kept just clear of the trees stem.

Tree Data Collection

- At time of planting, it is expected that tree data is collected and submitted for the City’s records. This is required for every street tree planted.
- The Tree data shall be provided in GIS format in accordance with the City of Armadale Digital Tree Data Specification

City Inspections

The City shall attend inspections during the construction phase with the developer to monitor the installation works being undertaken. It is assumed the street tree planting will be undertaken as a part of the front lot package installation and the installation will be staggered as new property’s are ready for landscaping. It is requested the City are invited to inspect the first tree installed in each relevant stage to ensure the trees are being planted to standard.

Inspection	Timing	Inspected for
Construction Start up	Start up of each stage of planting	Standard inspection

Street Tree PC Application Form & Checklist

This form must be completed and submitted to the City following the Practical Completion Inspection, in order to formalise PC.

Location Details			
Location			
Development / Stage			
Date of PC Inspection			
Organisation Name		Contact Name :	
Contact Phone		Email :	

Landscape Details			
Installation Contractor		Email :	
		Phone :	
Maintenance Contractor		Email :	
		Phone :	

#	Title	Comment	Requirement:	Tick if Complete or N/A
1	Defect Completion	Defects are be addressed within 2 weeks of Practical Completion meeting.	<ul style="list-style-type: none"> • Re-inspection with Developer and City Officers is required 	
2	Tree Data	<p>At time of planting, it is expected that tree data is collected and submitted for the City's records.</p> <p>Refer to the City of Armadale Digital Tree Data</p>	<ul style="list-style-type: none"> • Submit Data 	

		Specification available on the website for further detail.	
3	Maintenance Schedule	Provide maintenance Schedule as per City's Street Tree Installation and Maintenance Factsheet	<ul style="list-style-type: none"> Proposed maintenance schedule (submit via email)
4	Joint Inspection Schedule	The City shall attend inspections with the developer to monitor the maintenance being undertaken. Provide Inspection Schedule as per City's Street Tree Installation and Maintenance Factsheet	<ul style="list-style-type: none"> Proposed Inspection schedule
5	Bond release	Should an outstanding works bond be ready for release as per the Deed of Agreement, the developer is to submit a request to release.	<ul style="list-style-type: none"> Written request

Internal Use			
Submission notes			
CM9 ref:		Date Received:	
Finalised by:		Sign off:	

Street Tree Maintenance Standards

This fact sheet is intended to assist applicants understand the City's minimum expectations relating to the maintenance of Street Trees installed under the subdivision process

This fact sheet should be read in conjunction with the City's Public Open Space Landscape Guideline.

Maintenance Period Submissions

During the maintenance period, the developer shall submit a number of documents for review or approval. The submissions include:

Submission	Timing	Submitted for
Proposed Maintenance Schedule	At PC	Approval
Maintenance Report	Every 6 months	Review

Maintenance Schedule

At Practical Completion the Developer shall submit to the City for approval a proposed maintenance schedule for the extent of 3-year consolidation period. The monthly maintenance report which shall be submitted quarterly for the City's records.

The Schedule shall –

- Be divided into weekly, monthly and yearly intervals with details of all maintenance tasks clearly indicated and programmed into the Schedule allowing for seasonal changes as required, for the extent of works area.
- In particular the schedule shall note as relevant including timeframes:
 - Tree Inspection timeframes
 - Planned Maintenance works including formative pruning works, fertilizer application and mulching
 - Reactive works such as restaking
 - Replacement planting program

Maintenance Reporting

Every 6 months the developer shall provide a collated maintenance report outlining the works undertaken in the last six months. Additional joint inspections will be requested should the reporting not indicate acceptable maintenance standards are being applied.

The report shall demonstrate the following

- Records of Attendance and maintenance work undertaken on a weekly, fortnightly or monthly program including details of actions, works undertaken, dates and photos

Maintenance Period Inspections

After accept of PC, the developer shall arrange a Joint Inspection Schedule. The City shall attend inspections with the developer to monitor the maintenance being undertaken.

Inspection	Timing	Inspected for
Maintenance inspection	12 months after Practical Completion	Standard maintenance inspection
Maintenance inspection	24 months after Practical Completion	Standard maintenance inspection
Pre-handover inspection	33 months after Practical Completion	Preparing for handover

Standard Maintenance Guidelines

It is expected a developer shall maintain the street trees in peak condition at all times. For clarity it is expected during the consolidation period the Developer shall be responsible for the following:

- Inspect all installed trees to ensure that trees are not exhibiting signs of stress. Remedy any problems evident by appropriate action as required. This is expected a minimum 1 visit per month;
- Inspect stakes and ties and adjust and replace as necessary to prevent trees being damaged by wind or chaffing. Any replacement stakes and ties shall match those installed at planting. Ensure trees are suitably staked to encourage upright growth but remove stakes as required when the tree can maintain structure and upright growth without support
- Uplift trees carefully during maintenance period to encourage a central leader trunk, as required;
- Prune to remove dead, diseased, damaged and dying limbs. Collect all debris arising from pruning operations and remove from site.
- Remove and replace any dead, diseased, or dying trees immediately. Any widespread failures of one species are to be reported to the City so that an appropriate substitute can be identified prior to replacement;
- Ensure all irrigation or truck watering is undertaken to ensure steady and healthy growth;
- Progressively re-mulch around tree wells
- Mulch shall be chipped Pine Bark Mulch as approved by the City. Mulch shall be free of weeds, propagules, pathogens, allopathic organisms, pasteurized and certified to AS 4454 Composts, Soil Conditioners and Mulches.
- The City may request at pre-handover a full Arboricultural assessment of all planted trees if there appears to be poor growth, premature tree deaths, malformation or other symptom. Any trees noted for removal within the assessment will be required to be replaced at the Developer's cost.

- The Developer is required to maintain street trees to ensure that there is no potential harm to the users.

Pre-Handover Expectations

During the maintenance period, the standard maintenance works undertaken should ensure minimum works are required at time of handover. The following list is provided as a guide as to the standard maintenance items the City requires to be addressed at time of the pre-handover site inspection:

#	Street Trees	Typical Requirements at Handover
1	New trees	<ul style="list-style-type: none"> • <i>The new trees are healthy, establishing and free of weeds and pests</i> • <i>Dead / broken branches have been removed</i> • <i>Trees are staked and supported.</i> • <i>The trees have been subject to uplifting or formative pruning over the 3 year maintenance period</i> • <i>Tree replacements have been undertaken in a timely manner, 6 months prior to handover and suitable species have been selected in accordance with the approved plans.</i>

Street Tree Maintenance Checklist

Inspection Details	
Location	
Development / Stage	
Attendance	
Date	
12, 24 or 33 month?	

New Street trees	Yes/No	Comments
<i>Are there any replacement trees required or Scheduled?</i>		
<i>Are the trees healthy, establishing and free of weeds and pests?</i>		
<i>Are the trees staked and supported</i>		
<i>Do the trees require uplifting or formative pruning</i>		
<i>Other comments</i>		

Internal Use			
Inspected by:		Signed:	

Street Tree Handover Application Form & Checklist

This form must be completed and submitted to the City following the Pre-Handover Inspection of the Street Trees

This fact sheet should be read in conjunction with the City's Public Open Space Landscape Guideline and the Street Tree Maintenance Factsheet.

Location Details			
Location			
Development / Stage			
Date of Pre-Handover Inspection			
Organisation Name		Contact Name :	
Contact Phone		Email :	

#	Item Title	Comment	Requirement:	Tick if Complete
1	Defect Completion	<p>Defects are identified at the 3 month pre-handover inspection. Defects are to be completed 2 weeks prior to the agreed handover date, ready for reinspection</p> <p>Defect inspection is valid for up to 6 months. After that another inspection is required.</p> <p>The City may request at pre-handover a full Arboricultural assessment of all planted trees if there appears to be poor growth, premature tree deaths, malformation or other symptom. Any trees noted for removal within the assessment will be required to be replaced at the Developer's cost.</p>	<ul style="list-style-type: none"> • Re-inspection 2 weeks prior to the agreed handover date 	
2	Bond Release Request	<p>Should a maintenance bond be ready for release as per the Deed of Agreement, the developer is to submit a request to release.</p>	<ul style="list-style-type: none"> • Written request (submit via email) 	

Internal Use			
Submission notes			
CM9 ref:		Date Received:	
Inspected by:		Sign off:	

Landscape Bonding for Clearance Applications

This Information Sheet is intended to assist proponents to achieve clearance of subdivisional conditions (ahead of works completion) relating to Parkland and street tree delivery in the City of Armadale.

Subdivision applications are subject to conditions which are required to be complete prior to lodging a plan for final approval and applying for new titles from the Western Australian Commission (WAPC).

The WAPC is the statutory authority for approval of clearance of subdivisional conditions however the City will advise whether conditions are complete for sign off. The City may choose to accept a bond to cover the outstanding works such as landscaping or insist works are complete prior to clearance.

Should the City choose to accept a bond as insurance for the outstanding works, a outstanding works and maintenance bond and associated deed of agreement must be in place prior to the City processing the clearance application.

Outstanding Works & Maintenance Bond for Landscape Works in POS and Streetscapes

- In order to support the request to bond works in POS and streetscapes, the developer is to provide pre-tender construction estimate of the landscape and irrigation works to the City, along with the relevant drawing sets to which the costing aligns to.
- Once value is agreed, the bond for outstanding works will be 125% of the outstanding works and the maintenance bond shall be 20% of the total outstanding works bond (including the 125%). The two bonds shall be provided separately.
- An administration fee shall be charged accordance with the City's Fees and Charges Schedule.
- A deed of agreement will be required. The City has a DoA template which is available on request. A track change version of the DoA must be completed by the applicant and provided to the city for comment prior to the applicant's partial execution. The partially executed document is to be provided in wet copy to the city for full execution.

Outstanding Works & Maintenance Bond for Street Trees

- In order to support the request to bond street tree installation, the Developer shall provide the number of trees to be installed in the relevant stage and a pre-tender construction estimate. This shall be supported by a relevant approved street tree plan and based on 30-45lt pot sizes.
- Once value is agreed, the bond for outstanding works will be 125% of the outstanding works and the maintenance bond shall be 20% of the total outstanding works bond (including the 125%). The two bonds shall be provided separately.
- An administration fee shall be charged accordance with the City's Fees and Charges Schedule.
- A deed of agreement will be required. The City has a DoA template which is available on request. A track change version of the DoA must be completed by the applicant and provided to the city for comment prior to the applicant's partial execution. The partially executed document is to be provided in wet copy to the city for full execution.

Payment

Following an executed Deed of Agreement, the City will raise a payment advise and provide to the applicant to support the payment of the bond. The bond shall be in the form of a Bank Guarantee.

Bank Guarantees are required to be:

- from a recognised financial institution,
- free of spelling errors,
- Titled to reference the subdivision's number, stage, and condition,
- Titled to reflect the name, and version of approved plan,
- reference the category of bond (outstanding landscape, street tree or maintenance), and:
- without expiry date

A fully executed DoA and bond is required prior to the City recommending (to WAPC) that the condition(s) be cleared.

Release

The release of the bond will be as per the executed Deed of Agreement. City will release and return the Bond to the Applicant within 20 Business Days of the City, acting reasonably, being satisfied that the Applicant has satisfied its obligations under Deed of Agreement.

Verge Landscape Guidelines

This guideline is intended to assist developers and residents understand the City's expectations relating verge landscaping

This document has been produced to guide residents and developers on the landscaping and maintenance requirements for residential verges.

The Street Verge

A street verge is the area of land which lies between the boundary of the property line and the edge of the road.

Verges are a necessary space to run services (electricity, water, gas, etc) to each household and provide a space for footpaths, street lighting and trees to improve the streetscape amenity. This portion of land is owned by the Crown but is vested to Council to ensure the verge is not mistreated or damaged.

The City will manage and install street trees, footpaths, manage sight line hazards and excessive fuel loads. However, the City will not landscape, maintain or improve residential verges. Residents are responsible for maintaining the verge in front of their homes including corner side verges as an extension of their garden.

Verge Landscape Guidelines

The following treatments are permissible verge landscaping treatments in line with the City's Local Law that applies to the verge area - Activities and Trading in Thoroughfares and Public Places.

Street Trees

- Street trees are considered a City asset. Trees will be planted and maintained by the City as a part of the Urban Forest Strategy. You can request a Street Tree via the City's website - [Free Street Tree](#)
- If there is no street tree on the verge area, allow a 2m square space for the City to plant one in the future. The location of the street tree within the road hierarchy is governed by three overarching documents - Liveable Neighbourhoods (LN), Austroads and the Utility Providers Code of Practice for Western Australia (UPC). In addition to the overarching guidelines in Liveable Neighbourhoods, Austroads and the Utility Code of Provider's, the placement of street trees will also need to consider:
 - Planted within the 2.7 metre street tree and lighting alignment according to UPC/LN;
 - A minimum of 0.8 metres from a vehicle crossover or drainage pit, with 1.5 metres preferred;
 - A minimum of 15 metres from a kerb corner alignment on any side of an intersection;
 - A minimum of 10 metres from the approach side of a pedestrian crossing / pram ramp and 5 metres from the departure side;
 - 7 metres from any lane way or vehicle right of way;
 - Set back from the road edge at least 0.75 metres;
 - A minimum of 5 metres from a light pole or bus shelter;
 - Planted at least 500mm away from footpaths

Shrubs and Ground Covers

- Plants selected shall be a maximum height of 750mm at mature height.
- Where there is no footpath, plants must be planted a minimum of 2m from the back of the kerb, to allow for foot traffic
- Select plants suitable to the climate. Species that need less water, are low maintenance and will look great in your garden. Local nurseries and the Water Corporation's Waterwise Plant Directory can help with plant selection - [Waterwise Plants](#)

Lawn

- Lawn is a permissible verge treatment however a waterwise approach, such as mulch and native ground covers is strongly encouraged. Lawn must be maintained to a maximum height of 150mm.

Hard Surfaces

- Paving can be installed however is limited to 1/3 of the total verge (Excluding the crossover). The 1/3 rule allows for drainage infiltration during storm events.
- Inorganic mulch such as decorative stone aggregates and split pea gravel may be used in some circumstances. The following should be considered when selecting a stone mulch to use:
 - The maximum stone size is 25mm.
 - The area must be boxed out to 100mm depth, back filled with decorative stone gravel and lightly compacted.
 - The selected stone shall consider and compliment the surrounding undeveloped nature of the surrounding terrain
 - As per the local law, stones are to be installed no closer than 1 metre from a path and 2 metres from the road

Irrigation

- Ensure any irrigation and sprinklers installed are unobtrusive. Any sprinkler heads must sit below the finished surface so they do not become trip hazards.

Non-permissible verge landscaping activities and treatments

The following treatments are not approved in accordance with the local law:

- Any works dig or fill so as to vary the prevailing ground levels on a verge
- Thorny plants such as Roses, Bougainvillea or Cactus
- Poisonous plants or a declared weed
- Shrubs that grow over 750mm high
- Built structures such as raised garden beds, fencing, retaining walls, garden edging exceeding 50mm in height
- Ponds, fountains or water features
- Loosely placed materials with a particle size exceeding 25mm such as bricks and stones.
- Materials that protrude from the surface such as star pickets, sprinklers, large rocks

The City may request that a verge landscape treatment is replaced if it does not comply with the City's local law.

- A period of 20 working days shall be granted for the treatment to be adjusted or removed from the date of notice.
- If a verge landscape treatment is deemed a safety hazard by the City, it must be altered or removed within 7 working days of the notice.
- The City may, at its discretion, remove the treatment and dispose of the materials. Costs may be charged to the property owner.

Works by Council or Service Providers

The verge is the section of land where essential services such as power, water, gas, telecommunications and public infrastructure (such as trees and footpaths) are located. These services are generally located below ground. When landscaping the verge, consider that council and service providers may disturb landscaping to gain access to above and below ground utilities. The Council and service providers:

- Are not liable to compensate any person for any disturbance;
- May backfill with sand, if necessary, any garden or lawn to reinstate safe levels; and
- Are not liable to replace or restore any verge treatment and, in particular, any plant or any paving, sprinklers, pipes or other reticulation equipment.

Approval Process - Residents

All residents of the City of Armadale wishing to alter their verge area are required to submit a landscape plan that requires approval.

The plan must be approved prior to commencement of any works being carried out on the verge.

Your landscape plan is usually assessed and a response returned within 10 working days from the date it is received. The form can be found at the end of this guideline.

Getting started

Remember the verge is the section of land where essential services such as power, water, gas and telecommunications are located. These services are generally located below ground. It is important to ensure no proposed works interfere with the services and works are limited to the top 200mm from existing levels. It is recommended applicants undertake a Before You Dig Investigation via <https://www.byda.com.au/before-you-dig/for-homeowners/>

Soil Improvement

Once you have approval for landscaping your verge the first step is to ensure the soil is suitable for planting. If your verge hasn't been planted for a long time, it may be very compacted which makes it hard for plants to develop a root system. Remove weeds by hand, break up the first 20cm layer of soil to allow water, nutrients and plant roots to penetrate.

Local soils are prone to becoming hydrophobic, where they actually repel water. This prevents water and nutrient from penetrating the soil surface and reaching the plants root zone. It is highly

recommended to apply a wetting agent at time of planting and at the beginning of each season Spring, Summer, Autumn and Winter. This will minimise waste and ensure the water is available to the plants.

Depending on the existing soil conditions and proposed species, consider the installation of compost, soil conditioner or slow release fertiliser to help support the plant growth.

Planting Tips

Select plants suitable to the climate. Species that need less water, are low maintenance and will look great in your garden. Local nurseries and the Water Corporation's Waterwise Plant Directory can help with plant selection - [Waterwise Plants](#)

For successful planting, dig the hole twice the width and depth of the pot. If required mix into the hole the soil improver, fertiliser and wetting agent as per the manufacturers recommendations.

Place your plant in the hole ensuring that the soil level of the pot is in line with the existing soil level and backfill. Place 5 - 10cm layer of mulch on top, ensuring it is not touching the stem to avoid fungal diseases

Reapply wetting agent and water in thoroughly. Organic mulch (wood chips) may need to be reapplied once a year in late spring, as it will eventually break down into the soil.

Approval Process – Developer Front Lot Packages

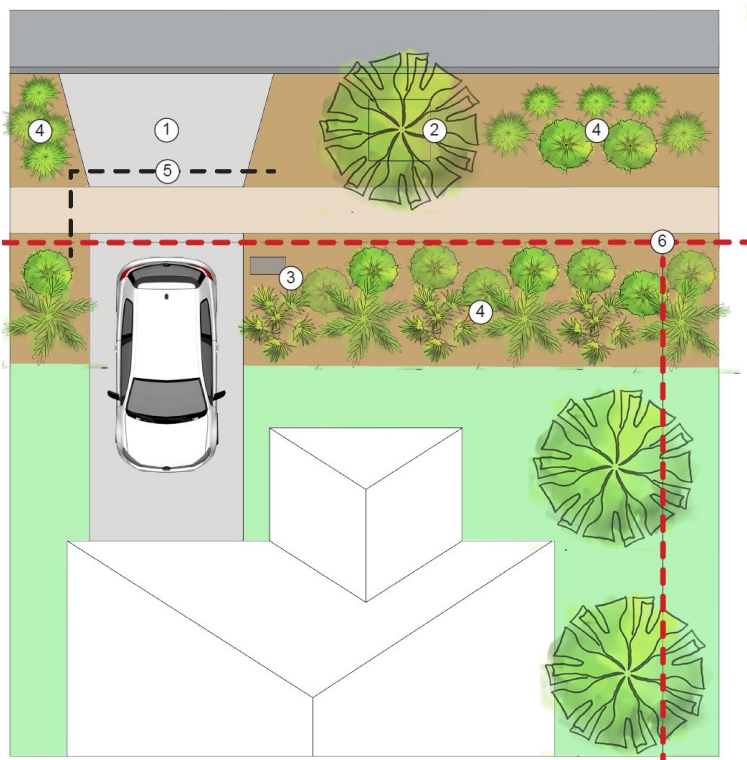
In some instances, the Developer of the estate may choose to provide a Front Lot Package. This package may include the landscaping of the verge.

The Developer is to ensure the Front Lot Packages meets the requirements set out by the City within this guideline. The Developer is to submit the selection of 3-4 typical front landscape concepts for the City to endorse. The form for this submission can be found at the end of this guideline.

Residents within new developments should first check with the developer if a front lot package is included in their sale agreement. If a front lot package is not included then the resident will be responsible for landscaping the front and side verges.

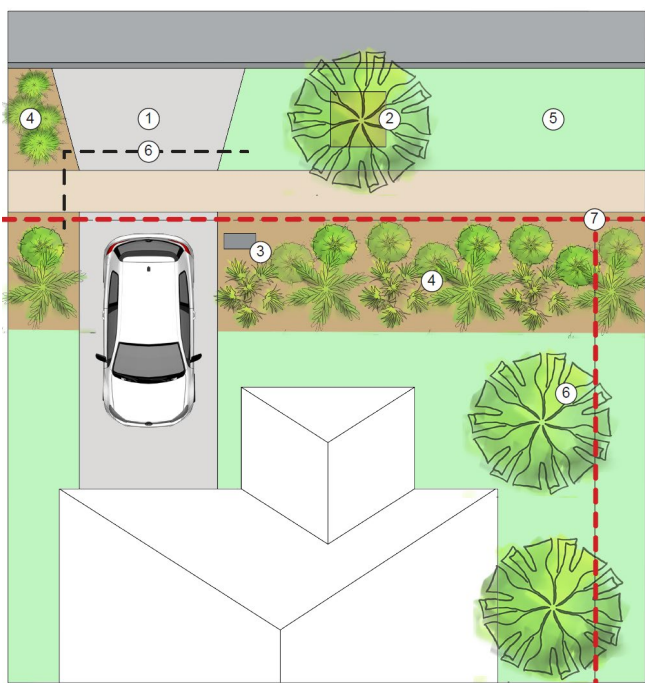
Example Plans

The following plans are illustrative only, to help guide residents and developers develop their own plans.



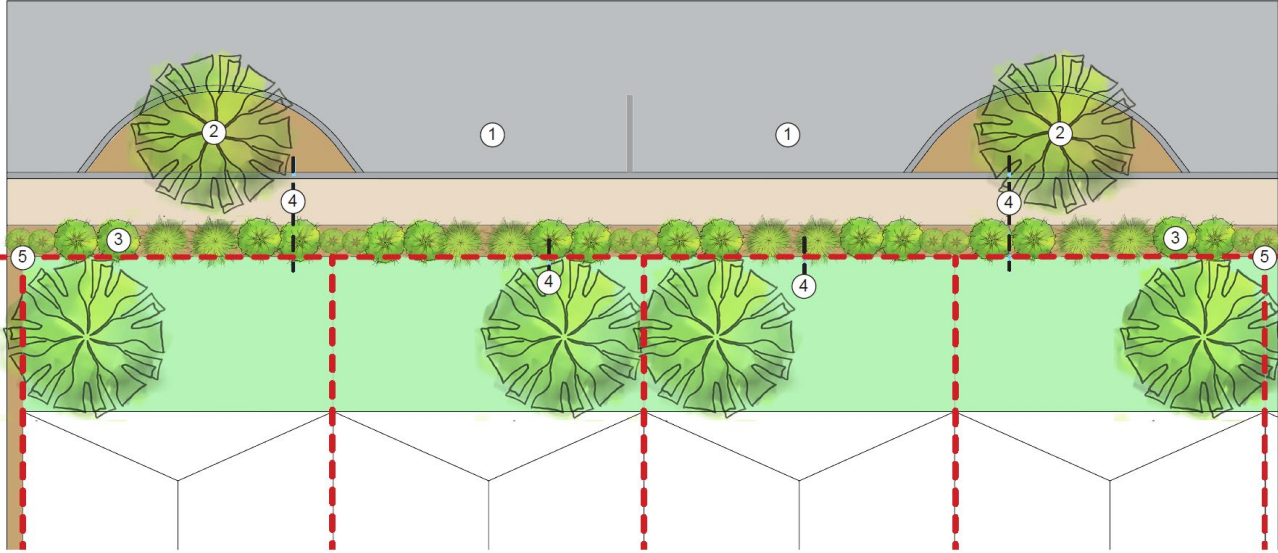
EXAMPLE ONE

- ① Crossover
- ② Street tree
- ③ Letterbox
- ④ Low planting & mulch
- ⑤ Irrigation conduits
- ⑥ Lot boundary



EXAMPLE TWO

- ① Crossover
- ② Street tree
- ③ Letterbox
- ④ Low planting & mulch
- ⑤ Turf
- ⑥ Irrigation conduits
- ⑦ Lot boundary



COTTAGE BLOCK EXAMPLE

- ① Carparks
- ② Street tree
- ③ Low planting & mulch
- ④ Irrigation conduits
- ⑤ Lot boundary



CORNER BLOCK EXAMPLE

- ① Crossover
- ② Street tree
- ③ Letterbox
- ④ Low planting & mulch
- ⑤ Turf
- ⑥ Lot boundary

Verge Landscaping Application Form

The City encourages residents to improve and maintain the verges adjoining their property. Property owners are required submit a proposed landscape plan for approval along with this signed Verge Landscaping Application Form. The Submission shall comply with the following conditions:

- Applicants have read and complied with the verge guidelines.
- Applicants accept responsibility for the material placed on the road verge.
- Applicants accept responsibility for any damage done to property or injury to persons resulting from or arising out of work undertaken within the road verge. The proposed works will be constructed in a safe manner in accordance with the requirements and to the detail shown on the sketch plan accompanying this application.
- Applicants accept that the area must be maintained by the owner(s) and kept in a neat, tidy and safe condition.
- Applicants Acknowledge that Council or public utility body have no responsibility to reinstate any treated area disturbed by the works carried out in the verge.
- Applicants understand that approval of this proposal does not restrict the rights of any other person to the free use of the verge.
- If a verge landscape treatment is deemed a safety hazard by the City, it must be altered or removed within 7 working days of the notice. A non-complaint verge treatment will be adjusted or removed within 20 working days from the date of notice.
- Applicants understand that this is an application only and no works will be undertaken until written approval is issued.

Declaration: I/We understand and accept the above conditions and the attached application complies with the conditions above and the verge guidelines and the associated Activities and Trading in Thoroughfares and Public Places Local Law.

Name:		Address:	
Signature:		Suburb:	
Contact No:	(M)	Email:	

Please email completed form and proposed landscape plan to info@armadale.wa.gov.au. An Officer will assess the request and notify the applicant of the outcome.

Front Lot Design Approval Form

The Developer is to ensure the Front Lot Packages meets the requirements set out by the City within this guideline. The Developer is to submit the selection of 3-4 typical verge landscape concepts for City to endorse. The Submission shall comply with the following conditions:

I/We understand and accept the following conditions:

- The typical verge designs shall comply with the verge guidelines. The designs shall allow for and install a street tree on the front verge and 2 trees on the side verge refer to the City's Street Tree Installation and Maintenance fact sheet for further information.
- The typical concepts have been planned and designed by a qualified landscape architect or similar horticultural professional.
- The installation of the front lot package will be undertaken by qualified landscape contractor or similar horticultural professional.
- The Developer accepts responsibility for any damage done to property or injury to persons resulting from or arising out of work undertaken within the road verge. The proposed works will be constructed in a safe manner.
- The resident has been made aware that the verge will be maintained by the resident and kept in a neat, tidy and safe condition.
- The resident has been made aware that that Council or public utility body have no responsibility to reinstate any treated area disturbed by the works carried out in the verge.
- If a verge landscape treatment is deemed a safety hazard by the City, it must be altered or removed within 7 working days of the notice. A non-complaint verge treatment will be adjusted or removed within 20 working days from the date of notice.

Declaration: I/We understand and accept the above conditions and the attached application package complies with the conditions above and the verge guidelines and the associated Activities and Trading in Thoroughfares and Public Places Local Law.

Name:		Company:	
Signature:		Estate / WAPC:	
Contact No:	(M)	Email:	

Please email this completed form and proposed concepts to parkdesign@armadale.wa.gov.au. An Officer will assess the request and notify the applicant of the outcome.