

**City of Greater Bendigo** 

Landscape Design Guidelines for Subdivisions

**JUNE 2024** 



**Acknowledgement of Country:** The City of Greater Bendigo is located on the traditional lands of the Dja Dja Wurrung and the Taungurung Peoples of the Kulin Nation. They are the traditional custodians of this land. We recognise their continuing connection to land, waters and culture, and pay our respects to their elders past and present.

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#### **Definitions**

The following clarifies definition for the purposes of the *City of Greater Bendigo Landscape Design Guidelines for Subdivisions*:

City of Greater Bendigo Landscape Design Guidelines for Subdivisions = LDG.

**City** is synonymous with the **City of Greater Bendigo** (organisation), or the **Responsible Authority**.

**Greater Bendigo** is synonymous with the municipality of the **City of Greater Bendigo**.

**The City's Representative** is the Landscape Development Officer (LDO) responsible for the approval of landscape plans and inspection and approval of the works.

**Developer** is synonymous with the **planning permit holder** or proponent and is responsible for the obligations for compliance with the planning permit.

**Native vegetation** includes trees, shrubs, groundcovers and grasses indigenous to the City.

**Preliminary acceptance** is issued when landscape works shown on the approved landscape plans are completed to the satisfaction of the City.

**Final acceptance** is issued at the completion of the *Maintenance Period* when the landscape is handed over to the City.

**Maintenance Period** commences at *preliminary acceptance* when the landscape works are accepted by the City. The maintenance period is 24 months unless otherwise specified in the planning permit. The Maintenance Period is synonymous with the Defects Liability Period where it relates to the approved landscape works.

Statement of Compliance = SOC.

**Water Sensitive Urban Design = WSUD**. Drainage infrastructure to improve stormwater quality within the subdivision including detention basins, sedimentation ponds, wetlands, raingardens and swales.

The Local Government Infrastructure Design Manual = IDM.

**Tree Protection Zone** = **TPZ**. A defined area around a tree for protection during construction and is calculated using Australian Standard 4970 Protection of trees on development sites.



### Introduction

The purpose of the City of Greater Bendigo Landscape Design Guidelines for Subdivisions (LDG) is to set standards for the planning, design, construction and maintenance of quality, equitable, safe and sustainable public landscapes in new subdivisions in the City.

The guidelines are to be used by developers, design consultants and contractors to provide certainty regarding the expectations of the City in relation to all aspects of landscape development in new subdivisions. It will also assist the City's staff when assessing and approving plans and during the construction phase of the subdivision process.

### The LDG sets out the following:

- Part A Landscape and policy context
- · Part B Landscape approval process
- · Part C Landscape design standards
- Part D Landscape construction standards
- Appendices

### The LDG is designed to:

- Create environmentally sustainable, safe and engaging public spaces supporting improved health and wellbeing for the community while protecting and enhancing the natural environment
- Ensure consistency and equity in subdivision design and development, the provision of open space and landscape features across the City
- Be a reference for the preparation and assessment of landscape plans
- Define the quality of landscape works in new subdivisions by providing detailed information on the City's horticultural, landscape construction, environmental management and maintenance standards

The LDG will take precedence over the Infrastructure Design Manual (IDM) on landscape matters in the City. However, the IDM guides and sets standards for civil and other infrastructure works in Bendigo.





## Landscape and policy context

Successful development of new subdivisions is based on sound strategic planning, good urban and landscape design and an understanding of the following:

- Greater Bendigo's Landscape Context
- Policy Context
- Landscape Design Principles

### A1. Greater Bendigo landscape context

Underpinning the landscape character of the City of Greater Bendigo is the Traditional Owners connection to and aspirations for the healing of Country outlined in their Country Plans. Dhelkunya Dja, the Dja Dja Wurrung Country Plan (2014-2034), p6 states 'Our Vision is for our lands and waters to be in good condition and actively managed to protect our values and to promote laws, culture and rights of all Dja Dja Wurrung People.' The Taungurung Country Plan, Taungurung Buk Dadbagi (2016), p13 expresses their desire to be 'Engaging in all aspects of Country including beneath the ground to the tops of our mountains and trees and the length of the waterways, and all within them.'

Bendigo covers more than 3,000 square kilometres and is almost completely encircled by 40,000 hectares of bushland (*Greening Greater Bendigo 2000 - 2070*, p7). Bendigo is often referred to as 'the City in the Forest' and is part of a large and diverse public space network across central and northern Victoria including National Parks, Regional Parks, State Forests, waterways,

waterbodies and trails. While more than a quarter of Bendigo is covered by public space (*Greater Bendigo Public Space Plan*, p9), it is unevenly distributed, especially in the outer areas where most subdivisions occur.

Bendigo's climate is temperate to semi-arid and is characterised by hot, dry summers and relatively cooler, wet winters with a long-term average annual rainfall of 510mm, nearly 25% less than Melbourne. Climate projections for the region predict increasing temperatures, more frequent and extreme heatwaves, less rainfall and more intense storm events (*Greening Greater Bendigo 2020*, p27) with Bendigo's climate becoming more like that experienced in arid inland areas of western New South Wales and Western Australia.

### **A2. Policy context**

There are numerous state-wide and regional strategies relevant to the planning and provision of subdivisions. The City continues to develop a strategic framework of planning and policy to address issues impacting on communities, place and environment both locally and regionally, including the *Greater Bendigo Public Space Plan 2019* and *Greening Greater Bendigo 2020-2070* outlined below and local precinct or development plans.

All relevant policies, strategies and documents should be considered and referenced when planning and designing landscapes in the City. In particular Council Plan Mir Wimbul 2021-2025, Reconciliation Plan Barpangu 2021-2025 and Climate Change and Environment Strategy 2021-2026. These documents are regularly updated and refined and are available for viewing on the City of Greater Bendigo website www.bendigo.vic.gov.au

#### **Greater Bendigo Planning Scheme**

The *Greater Bendigo Planning Scheme* controls land use and development within our municipality. It contains the Planning Policy and Local Planning Policy Frameworks, zones, overlays and other provisions that affect how land can be used and developed including subdivisions.

The planning controls specify the type of information required to accompany an application and what must be considered when assessing the application. Clause 56 provides particular provisions relating to subdivisions with objectives and standards to meet these on lot design, urban landscape, access and mobility, integrated water management, site management and utilities

### **Greening Greater Bendigo (GGB) 2020**

GGB provides a 50-year vision and 10-year action plan for a greener Bendigo. It targets 25% tree cover across urban Bendigo by 2030, 35% by 2050 and 45% by 2070 with aims of increasing biodiversity and providing urban cooling.

GGB includes the following actions relating to the LDG:

- Ensure all new trees handed over from new developments are incorporated into the City's asset database
- Promote greater species diversity while maintaining a balance of indigenous, native and exotic trees
- Actively increase natural shade and opportunities for nature-based play
- Increase biodiversity in urban areas by creating more natural plantings with the inclusion of understorey species

#### **Greater Bendigo Public Space Plan (PSP) 2019**

The PSP is a comprehensive, long term strategy that:

- Defines a conceptual vision for public space in the City
- Establishes guidance and priorities for planning and provision,
- Sets a framework of standards for access, quality, uses, maintenance and design of public space.

The PSP applies criteria-based standards for new public open spaces and provides detailed information for public space planning in all parts of the City by using Precinct Plans and a Matrix of acceptable infrastructure.

#### **Other City documents**

- Council Plan Mir Wimbul 2021-2025
- Reconciliation Plan Barpangu 2021-2025
- Climate Change and Environment Strategy 2021-2026
- Waterway Development Guidelines 2022 in conjunction with North Central Catchment Management Authority
- Biodiversity Strategy and Action Plan 2023-2033
- Nature Strip Guidelines 2022

### A3. Landscape design principles

Bendigo's Landscape Context and Policy documents inform the planning and design of new subdivisions and public spaces.

A set of seven Landscape Design Principles has been developed to reflect this context and inform decisions relating to the development of new subdivisions.





This section outlines the planning process from pre-application to final acceptance of the landscape works and includes explanatory and background information to assist planners, designers and developers to prepare and present landscape plans, construct and achieve preliminary acceptance and maintain to achieve final acceptance of public spaces. The flowchart (right) outlines the general approval process for subdivisions in the City.

### **B1. Pre-application discussions**

The City encourages developers and their consultants to discuss planning, engineering and landscape design issues and concepts with the City, including provision of open space, before making an official application or producing detailed landscape plans. This will reduce the likelihood and time associated with preparing plans not acceptable to the City.

The City encourages innovation in subdivision design including a diversity of lot sizes with medium density lots located close to main transport routes, open space or commercial centres.

Developers and consultants must refer to the Greater Bendigo Planning Scheme, precinct or development plans and other strategic documents. During pre-application discussions planning may require developers to prepare a concept landscape master plan to form part of the application.

### **B2.** Planning permit conditions

Developers must check the planning permit conditions to understand the requirements for landscape plans. Planning permits may contain standard, site or development specific conditions. Depending on the proposal, permits may contain conditions relating specifically to landscape works such as the following:

- Protection of existing vegetation to remain or offsets for cleared vegetation
- Preparation of a landscape masterplan or street tree master plan
- Preparation of a landscape plan
- Instructions on the bonding of landscape works, acceptance of works, and maintenance of landscape works
- Fencing requirements for example on boundaries with main roads or reserves



<sup>\*</sup> More complex open space, including playspaces, may require several concept designs.

### **B3. Landscape masterplans**

A landscape masterplan may be required for large developments, high-profile or strategic sites and staged subdivisions either as part of the planning permit application or after the issuing of the permit. Landscape masterplans must be prepared by a suitably qualified Landscape Architect or other professional designer with relevant professional experience.

The landscape masterplan identifies the landscape character of the subdivision and <u>must</u> include the following details:

- An accurate survey of the entire development showing all existing vegetation, topography, title boundaries, public reserves, extent of planning scheme overlays such as the Bushfire Management Overlay, surrounding roads, paths and other site features
- Supporting documentation such as photos, sketches, or tree/vegetation assessment reports
- A context plan showing the subdivision within the surrounding neighbourhood and any connections such as pedestrian/cycle paths
- Recommendations on native vegetation, cultural heritage or any other specialist and adjoining reports such as vegetation retention and protection within the subdivision site
- A site analysis of opportunities and constraints and the development of a neighbourhood character
- The proposed layout and staging of the development including adherence to a waterway setback of 30m from top of bank
- Proposed major features and concepts for open spaces including play spaces, passive and natural reserves, drainage and WSUD infrastructure, native or existing vegetation to remain, path networks and linkages with adjoining areas
- Show width of road reserves and proposed features such as shared paths, shadeways or traffic calming
- Proposed planting character or styles and locations in public reserves and streets

Where a landscape masterplan is required, it must be approved prior to the development of detailed landscape plans and works on site.

### **B4.** Landscape plans

Landscape plans provide a greater level of detail and will be required for all subdivisions. The plan must be developed in conjunction with civil engineering design, especially WSUD treatments, and submitted to <code>landscapedev@bendigo.vic.gov.au</code> for approval by the City before any landscape and civil works commence.

Landscape plans must provide details of the following:

- Existing structures and landscape features to be retained and how they will be protected during civil and landscape construction with reference to any relevant tree, vegetation (shrubs, groundcovers and native grasses) or cultural heritage management plans, including AS 4970-2009 Protection of trees on developments sites
- Relevant earthworks, drainage and other engineering infrastructure including WSUD and drainage infrastructure; underground pipes; retaining walls; and stormwater outlets and relevant levels and contours
- Details of fencing style and heights around City reserves, including drainage reserves and walkways, and note to be completed during landscape works for protection from abutting building works

- If the TPZ's of remnant trees on City road or bushland reserves extend into the subdivision, the developer must prepare an Arborist report outlining the affect of construction on the trees and any remediation work required. This will be monitored for the duration of the two year maintenance period
- All proposed landscape works within open spaces and other public reserves such as: tree planting, garden beds and lawn areas; playgrounds; paths; fencing; and park furniture
- Street tree plantings and landscaping in road reserves including within nature strips, roundabouts and centre medians and details on clearances from services
- Canopy coverage of streets and open spaces with the aim of maximising shade and cooling over public space
- Planting schedules detailing botanical names, common names, mature height and width, supply sizes, and plant numbers or number per square metre
- Construction details and specifications as required particularly for non-proprietary furniture or structures.
- Design details for playgrounds including but not limited to equipment, soft-fall, edging, drainage, and plantings
- Relevant landscape maintenance notes
- The City's standard Weed Management Plan must be referred to on the landscape plan see Appendix 1
- For large subdivisions, or those located in environmentally sensitive areas, such as adjoining waterways or Regional Parks, a detailed and specific weed management plan must be prepared for the site
- Any specific requirements as part of other permit conditions, approved plans or additional information requested by the City, the referral, service or other authorities

For more detailed design guidance see Part C - Landscape design standards (page 9).

Landscape plans must be prepared by a suitably qualified landscape architect or other professional designer with relevant professional experience. Presentation of landscape plans <u>must</u> include the following standards:

- Provide neighbourhood context if a master plan was not required
- Show the context of each stage within the whole subdivision, if in a staged development
- Include a north arrow, surrounding road names, lot numbers, address and suburb, title block, scale of drawing at A3 size, scale bar, date, the name and contact details of the Landscape Architect/ designer who has prepared the plan
- Include the planning permit number
- Be submitted to the City in PDF format; and be clearly legible when viewed or printed at A3 size
- The area in square metres of all open space reserves including natural, passive or play space, and drainage reserves whether natural or passive
- Integrate new developments with the surrounding Regional Park, adjoining land uses, transport systems and pedestrian/cycle networks
- Calculate on the plan the tree canopy cover in streets and public open spaces, to maximise canopy cover as per the targets outlined in GGB

### **B5.** Landscape bond agreement

The City requires all developers to complete a Landscape Bond Agreement to provide security for the implementation and maintenance of all landscape works. The City's standard Landscape Bond Agreement must be signed and paid to the City prior to the Statement of Compliance for each stage of the subdivision.

The Landscape Bond Agreement outlines the developer and City's responsibilities with regards to inspections, notices, timeframes, preliminary acceptance of the works, landscape maintenance, final acceptance of the works and return of the bond. The standard landscape bond agreement is available on the City's website www.bendigo.vic.gov.au

There are two possible scenarios for the payment of landscape bonds:

- Landscape works are not completed prior to SOC this
  requires a payment of a security deposit, based on a
  professionally prepared estimate of costs or contractors
  quote for the works, plus a 50% loading. Also a payment of
  a maintenance bond for 50% of the estimated works. After
  attaining preliminary acceptance, the security bond will be
  returned to the developer. After issuing final acceptance, the
  remaining maintenance bond is returned to the developer.
- 2. Landscape works are completed prior to SOC the developer is required to pay to the City a maintenance bond of 50% of the total cost of the works, calculated as above, and this will be returned to the developer upon issuing of final acceptance and after outstanding works are completed.

### **B6.** Landscape construction work

Civil and landscape construction works must not commence until the landscape plans have been approved. The developer must ensure all works are constructed in accordance with the approved landscape plans and any specific planning permit conditions to ensure high quality landscapes are established.

Any changes to landscape works, plant species, specifications or materials are required to be approved by the City's Representative. Major changes to the approved plan must be recorded on a revised landscape plan and sent to the City's representative.

The process for completion, inspection, maintenance and handover of landscape works to the City is specified in the Landscape Bond Agreement and is outlined briefly below:

- Once the landscape works shown on the approved landscape plans are completed, the developer must request the City Representative to inspect the works and ensure all items on the Form A - Preliminary acceptance checklist have been completed
- The City's Representative will organise an on-site preliminary acceptance inspection with the developer and relevant City staff to inspect the works
- At the inspection, the City will record any outstanding items to be completed in 2 weeks' time by the developer. Once all the landscape works are completed to the satisfaction of the City the preliminary acceptance form will be issued and the security deposit will be returned to the developer
- To ensure the proper establishment of landscapes and to allow plants and trees to be established through two growing seasons, the City will not issue preliminary acceptance of landscape works during summer (December to February)
- The City will retain the maintenance bond to ensure the works are maintained to the standards as outlined in the approved landscape plan
- At the written request of the developer, the City may defer the implementation date, as outlined in the bond agreement, of the landscaping works
- Depending on the complexity of the landscape the City will inspect works during the maintenance period and communicate any defects to the developer in writing. These must be rectified as per the instruction from the City's representative and when completed reported back to the City's representative
- At the completion of the maintenance period, the developer must ensure all items on Form B - Final acceptance checklist are completed and then contact the City's representative to inspect the works for final acceptance
- At the inspection, a final acceptance form will be issued if
  the works have been maintained to the satisfaction of the
  City and the maintenance bond will be returned and the
  City will take over maintenance. If further maintenance
  work is required, this will be described in the form and
  outstanding works must be completed prior to the return of
  the maintenance bond to the developer







## Landscape design standards

This section contains design standards and specifications for common types of public landscapes in new subdivisions. Less common works or customised design works require discussion with the City's Representative early in the design process and the provision of detailed drawings and specifications for approval as part of the landscape plans.

### C1. Design/layout

The City encourages developers to include landscape architects in the design stage of subdivisions as the layout of roads, lot sizes and orientation form the backbone for the landscape character of a new area, setting the rhythm for vehicular, pedestrian and cycle movement. The City encourages innovation in this area to achieve safe, attractive, sustainable and climate responsive environments. The City also strongly encourages early discussions about WSUD location and design given the potential to add high amenity and biodiversity values to the landscape.

Developers should consider the following considerations in subdivision design.

#### **Street Trees**

Trees are an important landscape component of new subdivisions creating urban character, alleviating climate change by providing shade, shelter and cooling and enhancing biodiversity and environmental connections.

### The following landscape design standards relating to street trees must be met:

- In larger subdivisions with multiple streets the selection of tree species must be a mixture of evergreen and deciduous either indigenous, native or exotic species and from diverse genera to provide resilience to current or future pests and diseases and be adaptable to changes in climate
- Selection of street tree species to be based on the Preferred Urban Tree List found on the City's website
- The outcome of the streetscape design is to establish an avenue effect maximising shade
- A minimum of one tree per lot frontage and additional trees on side boundaries. Early consideration and coordination of street tree and landscape design during the urban, civil and service design will assist in reaching canopy targets and healthy establishment of street trees
- Canopy coverage of streets and open spaces with the aim
  of maximising shade and cooling over public space. The
  canopy coverage assessment must show the total road
  reserve or open space area divided by the tree canopy, as
  shown in the City's Preferred Tree List, or another method
  approved by the City's Representative. Lower canopy
  coverage percentages may be considered by the City to
  achieve species diversity targets using tree species with
  smaller mature canopies
- Nature strips adjoining natural reserves must have native trees and if space allows indigenous species

- All tree stock must be supplied in accordance with AS 2303:2015 Tree stock for landscape use including stock supplied in 45 litre containers
- In small developments only, the developer may negotiate to pay the City to supply, plant and maintain the street trees in accordance with the approved Landscape Plan
- Street trees must comply with these standard offsets unless otherwise specified by service authorities:
  - 1.5m from footpath crossings and 2.5m from paths in
  - 1m from domestic service tapping points and 2m from stormwater outlets
  - 2m from service assets including pits, underground service conduit crossings, tapping points and above-ground infrastructure
  - 2.5m from underground electrical cable joints and tees
  - 1.5m 3m from driveways, depending on mature size of tree
  - 3m from fire hydrants
  - 4m from light and power poles
  - 10m at intersections from the intersecting road lane kerb line (at residential intersections of 50kmh) or as per Austroads Guide to Road Design (2010)
- No trees planted within the TPZ of existing trees to be retained



Table 1: Landscape Design Guidelines				
Hierarchy*	Parks and Open Space Service Level	Maintenance Regime	Infrastructure#	Examples
Municipal	1	Weekly	All facilities inc. toilets, bbqs, bins, carpark, drinking water, playspace over 6 items, bike racks	Lake Weeroona
Suburban/ Township	2	Fortnightly	As above playspace 5-6 items and seats, picnic setting, water, bike racks, shade minus toilets and bbq's optional	Viewpoint Reserve Huntly, Wolstencroft Reserve Flora Hill
Neighbourhood	3	3-4 weeks	Basic inc. playspace 3-4 items, seats, shade and bike racks with minimal garden beds, trees and grass	Top Paddock Ascot, Olympic Parade Kangaroo Flat
Neighbourhood	4	6-8 weeks	No playspace, seats and path with grass and trees	Provenance Estate Waratah Road Huntly

\*PSP, 2019, page 54-55 # PSP, page 176-177

#### **Roads**

- Provide a clear hierarchy of road widths and types to create a variety of streetscape characters
- Locate roads on the boundary of at least three sides of all open spaces and linear reserves so houses front these spaces to provide surveillance and allow space for planting of large trees
- Increase road reserves to create wide nature strips allowing large trees to be planted
- Explore the creation of road reserves with one wider nature strip to create "shadeways" forming a continuous shaded route through the subdivision providing active transport for pedestrians and cyclists
- Include driveways/crossovers and barrier kerbs in the subdivision design to protect existing and new street trees and to prevent vehicles parking on nature strips

### C2. Open space reserves

The design of open space reserves in new subdivisions must accord with the broad principles in PSP page 18 or precinct, development or township plans. The PSP guides planning and provision of open space by applying criteria-based standards for access, quality, uses and design of public space. Part 4 of the PSP provides detailed information on the location of open space in all areas of the City in the precinct plans for each suburb or township. A matrix of acceptable infrastructure or amenities is also provided.

Reserves are classified as Regional, Municipal, Suburb/ Township or Neighbourhood to guide site planning, design and management. In new subdivisions, only Suburb/Township or Neighbourhood classifications are likely to be relevant. The above classifications also align with Parks maintenance service levels and designs must take this into consideration.

Maintenance is also an important factor when designing open spaces in subdivisions. The City has a hierarchy of maintenance standards with the highest level allocated to municipal level reserves which have a high profile, high visitation and are highly developed such as Rosalind Park. However most open space

within subdivisions will be neighbourhood level reserves for local community use only and will have a moderate level of maintenance.

### The following landscape design standards for reserves <u>must</u> be met:

- Comply with the hierarchy and principles in the PSP and Parks maintenance levels
- Retain and protect existing vegetation, trees and other landscape features, and use indigenous species wherever appropriate
- Maximise the canopy cover target outlined in GGB
- Connect paths to the surrounding pedestrian/cycle path system
- Have streets fronting reserves so houses overlook them to provide good surveillance
- Cluster play spaces and picnic area to leave space for flexible use of unimpeded open areas for passive play and activity
- Provide a clear physical definition between natural/ indigenous and passive spaces where they exist in the same reserve
- Consider the level of maintenance the City will undertake once handed over
- The design of linear reserves for pedestrian/cycle access or overland flow purposes must connect to the surrounding footpath network and have appropriate vehicle access control. If required by a planning permit condition they must be fenced by the developer
- The location and mature size of trees selected for linear and drainage reserves must consider impacts on the drainage functionality, neighbouring private properties and services infrastructure
- Planting beds with shrub planting are to be kept to a minimum and only where they serve a purpose such as screening, on steep slopes, to increase biodiversity or as a barrier for public access to water
- Ensure no vehicle access is possible through reserves to private properties by providing vehicles barriers such as tree planting, rocks, site logs or bollards



#### Reserve trees

- Trees must be planted to provide shade for public open space features such as seating and play spaces
- Park trees in grassed areas must be planted at least 3m from fixed edges, structures and mulched garden beds to allow for mower access
- In mulched planting beds, tree stock must not be specified any smaller than 30cm pot size and tubestock trees will not be accepted
- Tree stock in grassed areas must be supplied in accordance with AS 2303:2018 Tree stock for landscape use
- Trees planted close to private properties must be at a
  distance equal to the radius of mature tree width, as shown
  in the Preferred Tree List, from property boundaries to
  prevent an overhanging risk and to allow solar access to
  private lots
- Allow for large growing trees and a diversity of species given the space available in reserves compared to streetscapes
- Tree selection in natural reserves, or in areas adjoining the Regional Park or native vegetation areas, must be locally indigenous species. Note indigenous stock in smaller container sizing may be acceptable if larger stock is not available
- No trees are to be specified within the canopy of existing trees due to competition for nutrients and water

## C3. Drainage and water sensitive urban design

Drainage reserves and WSUD infrastructure in subdivisions aim to manage stormwater to minimise flood damage, improve water quality on site and at receiving waters, and to retain stormwater on site for urban cooling, and habitat and open space improvement. The City supports best-practice WSUD which balances stormwater functionality with amenity, biodiversity enhancement and maintenance requirements. The City strongly encourages the involvement of landscape architects in early discussions about the designs of WSUD to maximise the potential for adding high amenity and biodiversity values to the landscape and to avoid delays in the approval of landscape plans.

### The following landscape design and works standards for drainage infrastructure <u>must</u> be met:

- Balance the engineering functionality and water quality with environmental and habitat improvement
- Explore opportunities for integration with open space reserves to maximise aesthetics and shading whilst considering construction and maintenance costs over the life of the asset
- WSUD features must be designed and constructed to comply with IDM standards, catchment authority requirements and Royal Life Saving Society of Australia guidelines for water safety in urban developments including placement of fences and safety benches where necessary

- Following approval of the engineering design any proposed landscape works must not require changes to approved engineered shape or levels
- Planting must be in jute-mat between normal water level and top water level (TWL) with no loose timber or plantbased mulch below TWL acceptable
- Plant species must be locally indigenous species, suitable for the level of inundation and from the City's Preferred wetland plant species list available on the City's website
- Plant selection must include a mixture of indigenous species from diverse genera to provide resilience and diversity of habitat
- Planting around areas of open water, sedimentation ponds or wetlands, must be designed to act as a barrier to public access
- Show safe maintenance vehicle access in accordance with the approved engineering drawings and include the installation of a standard lockable bollard at the entrance and indicate an area for desilting material
- Water bodies not serving as drainage, water quality or aquatic habitat function are not accepted
- The design of drainage outlet/inlet must prevent any erosion and be easily maintained as per the City's standard
- Rocks for energy dissipation at pipe outlets must be placed in a concrete base to prevent safety issues associated with rocks and mowing, to limit herbicide use in on-going maintenance and to assist in maintenance of silt build-up
- Rocks used in landscape treatments must be locally sourced sandstone or mudstone
- Areas with exotic grass species must include a spatial barrier between the grassed area and the WSUD planting to prevent spread of exotic grass into the planting. A minimum 1m barrier is required of treatments such as paths, jute mat, mulched areas or access track
- Batter slopes for grassed retarding basins and wetlands must not be steeper than 1 in 5 to allow for safe mowing.
   Steeper batters must be fully planted with indigenous species
- Drainage features requiring grass cover to protect their function must be grassed to achieve 90% coverage at final acceptance
- Erosion control must be implemented for overland flows, batters and overflows as required on civil plans and jute mat installed as per manufacturer's instructions including trenching and tying in at the top of embankments
- Rocks placed in or near water flow areas must be underlined with a non-woven, biodegradable geotextile or matting designed for this application to prevent erosion
- Markers of the NWL and recommended maximum silting level must be provided to facilitate future maintenance of the infrastructure
- Sedimentation ponds must be cleaned out before any landscape works commence
- Bio-retention filters in raingardens and sedimentation ponds must not be constructed until 85% of houses are built or as directed by the City's development engineer
- Nature strips adjoining drainage reserves must be seeded with exotic or native seed, turfed or gravel paved



### The following landscape design and works standards for drainage infrastructure <u>should</u> be met:

- The inclusion of walking paths around drainage reserves, creation of natural creek flows with pools and riffles and placement of large logs for habitat are encouraged
- Tree planting should be included within and around retarding basins to improve canopy coverage and biodiversity. Locations and species selection must consider distance from adjoining properties to prevent overhang or excessive shade and access for maintenance vehicles
- Planting around basins should be either all grass species or all shrubs to simplify herbicide treatment



### C4. Planting beds

Well-designed and planted garden beds provide visual interest, character, spatial definition, habitat and biodiversity. Landscape designs must ensure a balance between these benefits and the maintenance resources needed to maintain garden beds. Plant species must be suitable for the Greater Bendigo climate and the site conditions and indigenous where appropriate.

#### **Planting**

### The following landscape design standards for planting beds <u>must</u> be met:

- Plant selection must consider the site conditions and micro-climate and be resilient to more frequent and extreme temperatures and lower rainfall conditions
- Species selected in an area covered by a Bushfire Management Overlay must be fire retardant, for example, as suggested by the Australian Plants Society Victoria at apsvic.org.au
- Planting styles and layouts must consider the ability for them to be maintained with minimal intervention and watering, once established
- No tree planting within the canopy of existing trees to be retained
- Planting bed species must be selected and located with consideration to sightlines and public safety to maximise passive surveillance from the surrounding properties and footpaths
- Plantings along waterways or within natural reserves must be indigenous and of local provenance including grass and herbaceous species
- Grouped or massed planting beds are preferred to multiple small garden beds to assist with maintenance
- Planting densities and layout should be enough to achieve full cover of garden beds within three years

#### **Edging**

Planting bed edging is only supported in formal areas where a clear definition is required between garden beds and other surfaces or where retention of mulch or other materials is required. Paths are the preferred method of separating garden beds from lawn wherever possible to avoid the need for separate edging.

### Where edging is required, the following landscape design standards for edging <u>must</u> be met:

- Comply with standard construction details for edging as per the City's standard details
- · Edging must finish flush with adjoining surfaces
- Edging must be designed to remain securely in the ground
- A minimum 150mm wide flush concrete edge (mower strip) must be provided where grass areas abut walls, bollards or other features to allow mowing with a ride-on machine
- A 1m wide strip of unplanted jute mat or mulch must be included at the interface between exotic lawn grass and indigenous plantings, wetlands, waterways or remnant vegetation to limit weedy grass invasion into these areas

#### **Topsoil**

The following landscape design standards for topsoil must be met:

- Imported or site topsoil must be spread over garden beds or grassed areas to a depth of 75mm and cultivated 150mm into the subsoil
- Topsoil must be of fine to medium texture, as per AS 4419-2003 Soils for Landscaping and Garden Use, and be free of stones > 25mm diameter, clay lumps, weeds, tree roots, rubbish and toxic materials
- Any changes to soil levels within the TPZ of trees to be retained must be approved by the City's arborists

#### Mulch

### The following landscape design standards for mulch <u>must</u> be met:

- Organic such as wood-based products or inorganic locally sourced gravel products with a particle size of less than 20mm
- Installed at a depth of 75mm and be free of weed material, seeds, debris and foreign matter
- Not be dyed or have any other colourings or additives
- Weedmat must not be used under mulch

#### C5. Grass

Grassed open spaces in new subdivisions contribute to residents well-being by providing areas for passive play, informal games, picnics, community gatherings or extensions to playspaces. In natural reserves native grasses can be used. Grass species must be suitable for the Greater Bendigo climate and the site conditions.

Table 2 (right) provides an indication of the types of grass species and mixes for use in different types of open spaces in Bendigo.

### The following landscape design and works standards for grass or grassed areas <u>must</u> be met:

- Grassed slopes must not be steeper than 1 in 5 for safe mowing
- Designs must provide for grassed areas to be accessible by a ride-on mower with a 1.8m wide cutting deck and must allow for a 3m turning circle around furniture and other structures
- Avoid narrow areas of grass or junctions with acute angles
- Provide separation of at least one metre between exotic lawn grass and indigenous plantings, wetlands, waterways or similar natural (remnant vegetation) to limit grass invasion into these areas
- The City does not expect developers to sow grass seed in nature strips but they must be left in a neat and tidy state with topsoil flush with footpaths and kerbs

The City encourages the use of native grasslands in natural reserves or Category 3 or 4 reserves where maintenance regimes require less frequent mowing. Our preference is for a lower growing native grass such as Kneed Wallaby Grass Rytidosperma geniculatum.

Table 2: City of Greater Bendigo grass types		
Open space function	Recommended grass mix	
Parks, nature strips and lawn areas without irrigation	Tow Kikuyu + 15% Rye + 15% Tall Fescue seed mix OR Kikuyu Turf OR Low growing native grassland mixes Alternate blends or seeding techniques will be considered and must be documented on the landscape plans and approved by the City	
Retarding basins, swales or other WSUD drainage	Fescue / Rye Turf mix OR     Native grassland mixes	
Wetland Waterways and other conservation or natural bushland reserves	<ul> <li>Native grass species only (or sterile pasture grasses), along with an approved weed management plan</li> <li>Couch and kikuyu are discouraged in areas adjoining waterways, wetlands or areas of native vegetation</li> </ul>	





### C6. Roundabout, median and nature strip landscaping

Sightlines for pedestrians and drivers, sustainable on-going maintenance and safety of maintenance staff are critical in the design of any landscapes within road reserves.

Table 3 (below) provides a summary of the City's preferred treatments for different types of street landscapes.

### The following landscape design standards for planting in streets <u>must</u> be met:

- Only in exceptional situations will the City allow low planting within the road reserve or roundabouts
- A 1m wide non-planted set-back strip must be provided along all planted areas where they are adjacent to or within a road to allow safe maintenance
- Lawn grass in roundabouts and centre medians will only be approved in specific circumstances

- Stone or aggregate mulches within nature strips, medians, and roundabouts must have particle sizes less than 20mm to limit damage to people, vehicles or property if dislodged or thrown
- Concrete edging in medians and roundabouts must be flush with the finished ground level - timber, steel or plastic edges are not acceptable
- Walls or other structures are not acceptable in roundabouts
- Developers must include grass establishment in nature strips in front of open space or drainage reserves and along fence lines of adjoining subdivisions where the properties do not face the street

Table 3: Preferred street landscape treatments				
Street landscape	Preferred treatment	Minimum width	Maximum height	Setback
Centre medians	Gravel/stone mulches and trees where compliant with clear-zone, setback and sightline requirements	N/A	N/A	1m
Centre medians	Where WSUD treatment is included massed low growing groundcover plantings	3m	0.6m	1m unplanted from back of kerb
Roundabouts	No shrub planting, only a tree with an upright branching habit which crown out up high Gravel/stone mulches	N/A	0.6m	1m unplanted from back of kerb
Nature strips (nibs and kerb outstands) and intersections	Lawn grass or gravel     Planting only in exceptional circumstances	N/A	N/A	N/A
Traffic islands	Asphalt, plain or stencilled concrete	N/A	N/A	N/A
Hailic Islanus	Gravel mulches	1m	N/A	N/A

### C7. Paths and paving

Accessibility and connectivity are important in subdivisions and paths must be provided to link key features such as play spaces, shelters, park furniture and connect to the street footpath network to provide passive recreation opportunities. Table 4 (below) provides a guide to the recommended path types, widths and their typical area of application in public open spaces in Bendigo.

#### **Concrete paths**

### The following landscape design standards for concrete paths must be met:

- Concrete paths must be constructed in accordance with the IDM standard for footpaths
- Alternate paving such as exposed aggregate, coloured concrete, stencilled or other types of paving must be approved by the City and are generally not acceptable in neighbourhood parks
- There must be no obstructions (such as rocks, trees, posts, fences, walls or holes) within 1m of either side of a shared path to allow cyclists to pass safely except for bollards to control vehicle access
- If paths by Civil contractors have subsided and water is ponding, the developer must rectify this before Preliminary Acceptance

### The following landscape design and works standards for concrete paths <u>should</u> be met:

- Wherever possible concrete paths should be used as a separation between conservation/natural areas and passive areas or between lawn and garden beds or playgrounds
- The longitudinal slope on paths should be no steeper than 1 in 20 to provide universal access

#### **Gravel paths**

### The following landscape design standards for gravel paths <u>must</u> be met:

- Gravels must be locally sourced and suitable for path construction
- Timber edging along gravel paths is not accepted as it can create trip hazards
- Gravel paths must not be specified in low-lying areas or where water flows or ponds
- Gravel paths must not be steeper than 1 in 20 (longitudinal slope) for maintainability and universal access
- Paths must have a central crown or one-way cross fall of a minimum 1:100 (1%) to prevent ponding of water

Table 4: Paths in reserves			
Path surface	Path function and application	Typical width	Construction
	Shared pedestrian/ bicycle path within major linear reserves. Surface type to consider existing surface types, likely intensity of use and the existing or proposed character of the reserve	2.5m - 3m	IDM Footpath
Concrete	Boundary, high-use or paths prone to erosion such as on overland flows paths or on steep slopes	Minimum 1.5m	IDM Footpath
	Paths within a reserve. Paths must connect to the adjacent footpath network and include kerb ramps for accessibility	1.5m or to match street footpaths	IDM Footpath
Gravel	Secondary or informal paths. These are only permitted on level ground, not susceptible to water inundation, and when in keeping with character and use, e.g. within natural reserves	1.5m - 2.5m	Standard Detail





### C8. Play spaces

Play spaces are essential elements of community infrastructure, providing opportunities for personal development at all stages of childhood, as well as places for people of all ages and backgrounds to meet and socialise. Play spaces are inherently connected with public space and must be located within key public spaces or public space corridors to maximise community access to play opportunities and to create a more integrated public space network.

Play spaces must be planned and designed in accordance with the PSP and relevant Australian Standards for playground equipment and surfacing. Developers must consult with the City during pre-application discussions before considering whether to include a play space in a new subdivision.

In assessing an application, the City will consider the following:

- Whether the proposed location and design meets the public space hierarchy and other requirements outlined in the PSP page 54 –55, *Play Space Hierarchy*, and Precinct Plans in the PSP Part 4
- Application of good play space planning and design principles as outlined in the PSP, page 81
- Whether the proposed location and design is connected and accessible to, and visible from, the surrounding neighbourhood
- Consider if the proposal compliments and contributes to a variety of play provided by other play spaces in the vicinity
- Proximity of the play space to roads, open water or other risks and its impacts on surrounding neighbours

#### Play space design and documentation

The developer must produce play space concepts for discussion and agreement with the City which may take several iterations. The City encourages developers to resolve design issues at the concept stage to avoid time consuming changes on the detailed landscape plans. In some locations the design of a new play space may have to go through a public consultation process which the City will organise using concept plans from the developer.

Full and detailed documentation, permits, certification and costings must be provided as part of the landscape plans for approval by the City. The developer must arrange for a suitably qualified Playground Auditor to inspect the play space prior to handing over to the City at the time of Preliminary Acceptance and provide certification document.

### The following standards for the design and documentation of play spaces <u>must</u> be shown on plans:

- Scale, levels and any other features (such as nearby roads or open water) affecting the location of the play space in a public reserve
- Fall zones for each piece of equipment as required by the relevant Australian Standards
- Details of the type, depth and installation of the soft fall including confirmation of compliance with Australian Standards
- Details of the type, depth and details for containment of the soft fall edging
- Details of drainage or services to the play space
- Details of any proposed fencing and gates. Fencing of an entire play space is not supported but sections of fencing or other barriers maybe be appropriate near roads and open water bodies
- Details of the brand, model number, colours as well as illustrations, photos or a list of individual components of the playground equipment and manufacturer/installer details
- Shade/shelter, seating, and the use of natural elements
- Custom designed play spaces are not accepted in neighbourhood reserves unless approved by the City.
   They must include a desktop audit by an independent and certified playground auditor paid for by the developer
- Design must not replicate equipment in nearby play spaces and offer different types of play experience
- Ensure accessibility to structural components for future maintenance
- Wherever possible make equipment accessible to all abilities

#### Play equipment selection

### The following standards for the selection of playground equipment <u>must</u> be met:

- All materials and fixings must be weather resistant and attached with anti-theft fasteners
- Timber elements are discouraged due to higher maintenance requirements and there must be no timber in the ground; only in metal stirrups
- All equipment must comply with Australian Standards

### The following standards for the selection of playground equipment should be met:

- Avoid fully enclosed spaces and structures
- Consideration should be given to parent's ability to see through equipment to supervise children
- Recreation elements such as hard-courts, skate elements and fitness equipment may be considered if not provided in nearby reserves
- The inclusion of nature play elements is encouraged.
   Timber elements must be Australian hardwood certified and seasoned, and preferably kiln dried. Rocks must be locally sourced sandstone or mudstone

#### Play space layout

### The following standards for the layout of play spaces <u>must</u> be met:

 Provide a high level of natural shade to play equipment and seating. In Suburban level reserves the use of structural shade elements is acceptable

- Accessible seats with backs and armrests must be suitably located for supervising carers
- Some accessible play elements
- Paths connecting the play space to the surrounding path network
- Playground edging must finish flush with the surrounding ground levels to provide the appropriate level of universal access and depth of soft fall. The preference is for concrete paths or flush edging of a minimum width of 150mm with a 25mm radius/chamfer to all playground edges

### The following standards for the layout of play spaces <u>should</u> be met:

- The design and layout of the equipment should minimise the number of separate soft-fall areas and overall size whilst maintaining fall zones
- Slides should be orientated away from the north and west to minimise overheating of the surface in hot weather
- Paths of travel within the play space should avoid potential clashes with swing paths, slide runoffs and other paths of movement
- The shape of the playground should ensure it is easy to mow and maintain around the edges with no tight curves and corners in grassed areas
- Additional "perching" elements like larger rocks, shaded by nearby trees, are encouraged to provide a comfortable space for carers and as extra play items
- Any planting should be located away from direct lines of travel and be protected from trampling by rocks or trees or other features



### C9. Furniture, fencing and structures

#### **Public furniture**

The PSP sets recommendations for the provision of furniture in public spaces that is appropriate to the setting and improves quality, attractiveness and use of the space. The City has developed standard details for all public furniture to simplify future replacement and maintenance.

### The following landscape design standards for public furniture <u>must</u> be met:

- Planning, design and provision of street and park furniture and other infrastructure must be in accordance with the Amenities, Facilities and Infrastructure Framework matrix contained in Appendix 2 of the PSP and be selected from the City's standard furniture found on the website
- Shelters and other structures are not normally provided in Neighbourhood reserves, except with the City's discretion, and be proprietary items. Developer to provide full and detailed documentation, permits, certifications and costings
- In accordance with the *Amenities, Facilities and Infrastructure Framework*, barbecues and public toilets must
  only be provided in municipal, regional and state or national
  public spaces
- Rubbish bins are only included in suburban or higher level spaces

### The following landscape design standards for park furniture <u>should</u> be met.

- Public furniture should be universally accessible
- Seating should be provided at 800m intervals along paths and around high-activity areas such as play spaces and should be located with consideration of shade, views and safety

### Fencing and bollards

### The following landscape design standards for fencing and bollards <u>must</u> be met:

- Private vehicles must be excluded from open space reserves through the combination of plantings, kerbing, bollards, large rocks or other fencing as a barrier
- Maintenance access must be provided by the installation of removeable bollards
- Bollards or fences must be located within a garden bed or 325mm wide concrete edge, for ease of grass mowing
- If the planning permit requires the developer to fence public open space, the adjoining private property boundary fence must be designed to the following standards:
  - styles, materials, heights and colours must be shown on the landscape plans for approval by the City
  - must be constructed (at the full cost of the developer) at the same time as landscape works are completed to prevent builders impacting the reserve
  - Consider maximising passive surveillance into the open space by having low fence heights, 1.2m or less, and be semi-transparent
  - Where low or transparent fences are not practicable, fences should be a suitable, visually recessive colour to ensure fencing is not dominant and blends in with the landscape

### C10. Irrigation

Where supported by the Amenities, Facilities and Infrastructure Framework matrix contained in the Greater Bendigo Public Space Plan 2019, the following landscape design standards for irrigation must be met:

- Permanent irrigation systems must be clearly shown on the landscape plans for approval by the City, and are only approved by the City in exceptional situations
- Design and construction standards for permanent irrigation systems, where approved, are available from the City
- · Systems must be complete and independent
- Include an approved controller to communicate with the centralised control system to enable remote access
- · Connected to recycled water where available
- Sacrificial irrigation systems are acceptable but must be paid for by the developer and turned off, infrastructure removed and ground made good three to six months prior to final acceptance depending on the time of year

### C11. Other landscape features

#### **Service infrastructure**

### The following landscape design for services infrastructure within public open spaces <u>must</u> be met:

- Service infrastructure such as electrical kiosk substations, water pump stations and other above-ground service infrastructure proposed to be located within public open space must be shown on both the engineering and landscape plans. Details to be shown include the surface treatment surrounding, size and colour of the infrastructure proposed and access requirements
- Above-ground services infrastructure must be located to account for their visual and physical impact on the open space
- Any reserve required to be created must not be in the ownership of the City. The reserve and infrastructure should not be fenced, landscaped or screened separately unless required by the service authority

### **Signage**

### The following standards for signage, place and estate naming must be met:

- The City does not support permanent estate names or entrance features including estate naming signage and associated landscaping on public land including road reserves
- Temporary estate entrance features or signage may be permitted on private land or with special permission within road reserves where the design is approved by the City
- Temporary signs must be shown on the landscape plan and comply with road safety requirements. A formal, written agreement between the developer and the City must be in place for the signs to be removed and the site reinstated prior to preliminary acceptance of the last stage of a subdivision or as otherwise agreed
- Entry statements (or signs) advertising the estate are subject to separate planning approval
- High walls or gates creating the impression of "gated entries" are not acceptable
- The City will not be responsible for the maintenance of estate entrance features including signage or plantings
- The formal naming of public open spaces is undertaken by the City including installation of signs



#### **Public art**

In new subdivisions, public art provides opportunities to create a sense of place by enriching and interpreting local identity. The City has a *Permanent Public Art Policy and Procedure* which developers must refer to when commissioning public art.

### When developers propose public art, the following standards must be met:

- Provide a short, written rationale for the design of the artwork outlining how it contributes to the cultural and physical setting with design drawings for approval by the City
- Consider on-going maintenance issues including materials and access
- Provide structural requirements, standards and permits
- Artwork on posts must be steel or timber poles on steel stirrups

#### The following standards **should** be met:

- Developers should use local artists for public artwork if possible
- Style, materials and design should relate to the location and site character

### C12. Maintenance

### The following landscape design standards for maintenance must be met:

- Design of public spaces must minimise the need to use herbicides or other chemical sprays by establishing dense plantings or by increasing areas of mown grass
- Where requested by the City, on complex projects, the developer must lodge a maintenance plan with the landscape plans for approval by the City. The maintenance plan must include the scope and standards of maintenance including but not limited to grass areas, trees, pruning, mulch, planting and replanting, watering, weed control, rubbish, furniture, structures and play spaces, hard pavements and gravel surfaces
- The standard weed management plan in Appendix 1, must be referred to on the landscape plan to guide the developer throughout the whole subdivision process from civil to landscape construction
- A more detailed weed management plan must be produced, alongside landscape plans, for subdivisions where numerous weeds exist, including declared environmental weeds, or where the subdivision is adjacent to a natural environment such as a regional park
- The Weed Management Plan must include:
  - the location, extent and type of weeds present
  - initial weed control methods prior to civil and landscape works
  - weed management throughout the maintenance period including on-going treatment methods and timing





## Landscape construction standards

This section contains construction standards and specifications for common types of public landscapes in new subdivisions to assist with ongoing maintenance. Less common works or customised design works require discussion with the City's Representative early in the design process and the provision of detailed drawings and specifications for approval as part of the landscape plans.

#### D1. Site establishment

The following works standards for site establishment <u>must</u> be met prior to any landscape works commencing:

- Complete Dial-Before-You-Dig research and service location on-site. Any damage to utility infrastructure is the responsibility of the developer
- Protect all existing site features such as trees, native vegetation, waterways, significant cultural heritage sites or utility services in accordance with the planning permit conditions and approved plans. Protection may include temporary or permanent fencing, signage or other works
- The developer must continue to maintain sediment and litter control to prevent sediment and litter leaving the site in accordance with any planning permit conditions or approved management plans
- Works identified in any approved weed management plan must be started when civil construction begins on-site

### D2. Earthworks

### The following landscape construction standards for earthworks must be met:

- All earthworks near trees must follow the requirements of the current AS 4970 Protection of trees on development sites, any approved Arborist's Impact Assessment or other conditions in the planning permit
- All construction vehicles and machinery must be washed down and free of weed seed and soil prior to entering the site to prevent spread of weeds and pathogens
- Initial weed control must have been completed prior to stripping in accordance with the Weed Management Plan, in particular, any weeds classified in Catchment and Land Protection Act 1994
- Rocks excavated from site may be considered for reuse onsite for landscape purposes
- In areas where no builders are present, the nature strips must be left in a neat and tidy state with topsoil matching the level of footpaths and kerbs

- Under no circumstances may vegetation, debris, building waste or rock be buried in any public space
- The City encourages the reuse of the existing topsoil on site. Reused site topsoil must be free from weeds (including roots, bulbs or rhizomes), rubble, debris, rock (greater than 5mm diameter) or other contamination. This usually requires careful stripping of the site topsoil and vegetation (including avoiding mixing with subsoil) and windrow stockpiling on site for reuse
- Imported topsoil must comply with relevant Australian Standards (such as AS 4419 Soils for Landscaping and Garden Use) and must be certified free of debris, waste, rock or other contamination. Soil must have light to medium friable texture, pH between 6.0-7.0 and be free from silt material and non-hydrophobic. The developer must provide certification that imported soil is free of contamination, meets the above standard and is fit and suitable for its intended purpose. The City retains the right to reject topsoil and other excavated materials not meeting these standards

### D3. Drainage and WSUD

The following landscape construction standards for drainage and WSUD must be met:

- Final planting of wetlands and bio-retention basins should be delayed until 80% of dwellings in the subdivision are constructed or otherwise at the direction of the City's development engineer
- Areas of erosion control are in place including jute matting securely installed as per manufacturers' instructions with trench fixing at the top of embankments and installed under retaining rocks if they are retaining steep slopes
- WSUD layout and construction materials are in accordance with the approved civil and landscape plans
- A 1m wide plant and grass free zone is in place on the edge of WSUD planting
- Prior to landscaping commencing, all sediment and weeds to be removed from basin area and any lose rock beaching secured in the ground

### **D4. Vegetation management**

#### **Existing vegetation**

The following landscape construction standards for the protection and management of existing vegetation <u>must</u> be met:

- Protection of trees must be in accordance with current AS
   4970 Protection of trees on development sites, any approved
   Arborist's Report or other requirements of the planning
   permit shown on engineering and landscape plans
- The developer is responsible for the impact of construction works on or resulting in the death of existing vegetation, shown on the approved plans to be protected, during works and the maintenance period or native vegetation offset. The developer must pay the Tree Valuation (Amenity Value) as set out in the City's *Urban Tree Management Policy* for any tree impacted by construction works
- The developer must complete remedial works to allow damaged trees to safely remain in place or remove dead or damaged trees as required and directed by the City

### **Planting beds**

#### The following landscape construction standards <u>must</u> be met:

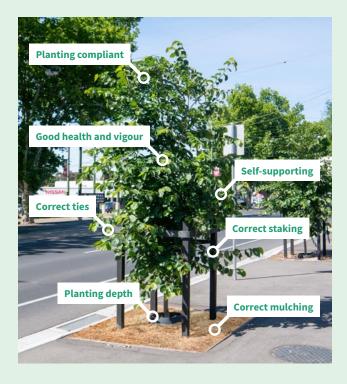
- Garden bed layout and construction materials are in accordance with the approved landscape plans
- Garden bed edges are flush with abutting surfaces and well defined, neat and tidy
- Plant species and numbers are in accordance with the approved landscape plans and substitutes are approved by the City's representative
- All plants display healthy growth
- Mulch is spread evenly to a depth of 75mm
- Garden beds are tidy and free of litter, rocks, debris, weeds and builders rubbish
- A 1m wide non-planted strip is provided to all planting areas along or within roads including roundabouts

### **Weed management**

## The following landscape construction standards for weed management <u>must</u> be met:

- The standard or approved weed management plan must be followed and implemented throughout the landscape construction and maintenance period and must be sprayed prior to seed setting to reduce future weed management issues
- All declared weeds must be removed or treated appropriately
- Only herbicides registered for use in Victoria may be used
- All herbicides are to be used in accordance with the Manufacturer's directions and at the recommended rates
- Herbicides can only be applied by a qualified and certified operator
- Grass area and garden bed planting must not commence until initial weed control programs have been completed in accordance with the Weed Management Plan
- Weed management must be conducted in manner that protects existing vegetation to be retained

Refer to **Appendix 1** (Page 24) for a standard weed management plan.



#### **Tree planting**

### The following landscape construction standards for tree planting <u>must</u> be met:

- Trees must be planted in accordance with the landscape plans and may need to be ordered well in advance of planting. Any tree species substitutions or other changes must be approved by the City's representative prior to the commencement of works. Substituted stock without approval will not be accepted at preliminary acceptance
- Indigenous trees are hard to source and must be preordered as early as possible to ensure supply and size requirements are achievable
- The City reserves the right to reject any trees not meeting supply standards and landscape plans and recommends an independent arborist assess and tag nursery stock prior to delivery to ensure compliance with AS 2303 Tree stock for landscape use
- Top of root ball must not be lower than final or natural ground level
- Trees must be free of pest and disease
- Trees must display good form, appropriate for its species
- Where tree stock has a defined central leader, an apical bud must be intact and any stem deviation from vertical shall not exceed 15°
- Where tree stock has branch dominance, terminal buds must be intact. At least one half of the foliage distribution must be on branches in the lower two-thirds of the trunk
- Trees display structural integrity with the root ball not moving and display vigorous healthy growth
- Advanced trees are correctly planted with weed free mulched rings, guard protection, stakes and ties as per the City's standard street tree detail
- · Augers must not be used for tree planting
- All weeds and suckering material have been removed
- Ensure tree ties are appropriately tightened to allow for some stem movement to create sturdy trees at final acceptance

#### **Grass**

### The following landscape construction standards must be

- · New grass areas are evenly graded and free of rock, rubbish and other debris within 100mm of the surface, with an even coverage of good quality imported or improved site-won topsoil and be weed free
- Grass areas must be germinated and showing even coverage heading to 90% with no significant bare patches and must be at second cut stage prior to preliminary acceptance or at the discretion of the City's representative
- Sacrificial irrigation to improve grass coverage is acceptable, but at no cost to the City, and all infrastructure must be turned off three to six months prior to final acceptance and ground made good
- Grassed batter slopes are 1 in 5 or flatter
- · Exotic grass areas display an even coverage with minimal bare patches and no weed growth
- · Native grass areas are best sown in autumn and must be scarified following contours, spread with a thin layer of mulch and temporary fencing in place with native grass signage (as germination can be slow) available from the City's Representative

### **D5. Play space construction**

#### The following standards for the construction of play spaces must be met:

- All works associated with play equipment installation must comply with the current Australian Standards and manufacturer's recommendations and be completed by a certified play equipment installer. Certification of the equipment and an onsite play space audit must be completed by a qualified Auditor to Australian Standards and include a City representative prior to or at preliminary
- During installation, the playground site must be fully fenced off to exclude the public. The fence must remain in place until the playground has been signed off (in writing) by a Playground Auditor and the City's Representative
- · Playground edging must finish flush with the surrounding ground levels to provide the appropriate level of universal access and depth of soft fall
- Underground drainage must be installed to ensure the playground drains freely to the underground stormwater drainage system, a soak for passive irrigation purposes or other point of discharge in accordance with the City's standard construction details. Plans of constructed drainage submitted to the City at Preliminary acceptance
- Safety tile or wet-pour rubber must be provided under swings and at the base of slides
- Safety tile or wet-pour rubber is acceptable to improve accessibility to playground equipment but is discouraged over large areas
- Only compliant wood-based soft-fall mulches should be provided in accordance with Australian Standards for Playground Surfacing. Certification of soft-fall mulch compliance must be provided to the City prior to preliminary acceptance
- Suppliers' information for each piece of equipment including part numbers and installation details must be provided to the City prior to preliminary acceptance of the works



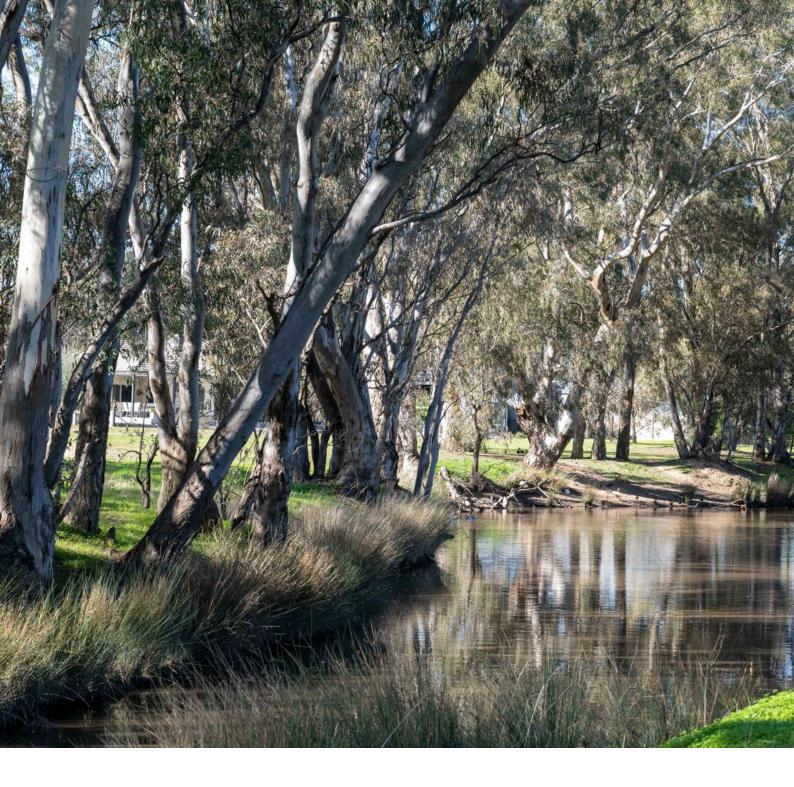
Following preliminary acceptance, the maintenance of the playground equipment including graffiti removal, the replacement of stolen or vandalised components and topping up of soft-fall mulch becomes the responsibility of the City. The developer will remain responsible for any defects in the equipment or installation during the maintenance period.

#### D6. Maintenance

The City expects the developer to maintain the landscapes according to the approved landscape plans and weed management plan and as per the standards set out in Form A -

#### Preliminary acceptance checklist.

- All new landscape works must be maintained for 24 months minimum to include 2 summers with no inspections in summer from December to February
- The developer is responsible for notifying the City if any trees die or are removed or damaged. The City is only able to follow up on damage whilst the builder is on site. Some trees may be removed when the owner attains a Works Within Road Reserve permit for a new driveway
- Tree maintenance includes stakes, ties, mulch topped up and free of weeds, watering, formative pruning and keeping building or garden rubble from tree surrounds
- Before final acceptance the developer must use Form B checklist to ensure the site is ready for the inspection with the City



## **Appendices**

### City of Greater Bendigo fact sheets

• Appendix 1 - Standard weed management plan

### Landscape works handover forms

- LDG Form A Preliminary Acceptance Checklist
- LDG Form B Acceptance Documentation
- LDG Form C Final Acceptance Checklist



APPENDIX

1

# Standard weed management plan

The purpose of weed management is to not only remove the current weeds from the site, but to reduce the seed burden in the soil. The required seasonal follow ups are to treat new germination events and to not allow additional seed burdens, to accumulate in soil. Refer to the City's current Environmental Weed List, on the website, for weeds requiring immediate treatment and control.

Stage 1: Prior to any landscaping works commencing			
Item	Description	Frequency	
1.1 Broad area control of emergent and broadleaf weeds. Ensure you identify any native vegetation, especially understory plants – do not spray or remove these unless approved.	During the initial period between the major earthworks and landscape works commencing, all affected broad areas are to be herbicide sprayed as per manufacturer's instructions twice annually to catch various weed species that will potentially be present. Winter applications to target winter emergent weeds such as Dock and Marshmallow, and summer application for weeds such as emerging Blackberry, Kikuyu and Couch grasses. Herbicides to be applied by a suitably competent person following all product directions.	Minimum of two applications annually. Winter and Summer germination events are your main targets.	
1.2 Woody weed control. Ensure you identify any native vegetation, especially understory plants – do not spray or remove these unless approved.	Established woody weeds within the site boundary are to be removed using the 'cut and paint' method, with stems and canes cut close to the ground and immediately painted with herbicide, using manufacturer's instructions. Herbicide applications should be during warmer months (Summer / Autumn) as much of the woody weed present are actively growing (Blackberry, Ash). Note any herbicide applications should be away from publicly accessible areas.	As required during the active growing season. Spring and Summer.	

Item	Description	Frequency
2.1 Broad weed spray prior to any landscaping works.	As per any weed control note on your approved landscape plan. All areas for landscaping are to be sprayed with herbicide, at a minimum of one week prior to landscape works commencing. Apply all herbicides as per manufacturer's instructions, with two applications spaced 1-2 weeks apart. In dry weather, areas are to be watered one week prior to initial application to encourage weed seed germination prior to works.	Prior to commencing any landscaping works.
2.2 Control of new weeds with landscape works.	As per the plan, site stockpiled topsoil is to be used for garden beds. If this is unavailable or insufficient, any imported topsoil is to be up to the current AS 4419 Soils for Landscaping and Garden Use, any imported materials must also be managed for weeds as per this plan. All imported mulch must be clean and weed-free.	Earthworks, landscaping, rainfall or irrigation may stimulate a weed germination event. Evidence of follow up weed control must be visible on final inspections prior to hand over.
Stage 3: Post completio	n of landscaping works - to hand over to the City	
Item	Description	Frequency
3.1 Control of emergent weed grasses and broadleaf.	Any weeds away from planted areas are to be treated with herbicides as per the manufacturer's instructions, with a minimum inspection and treatment of twice annually (Summer and Winter) to catch various weed species, as per	As required after any germination event. Minimum of twice yearly in Winter and Summer.
	item <b>1.1</b> . All herbicide applications must be supervised and applied by a suitably qualified and competent person during still and fine weather, utilising correct PPE and following product directions. Extra precautions must be taken to avoid overspray or spray drift onto planting or neighbouring areas.	





## Preliminary acceptance checklist

Form A is to be completed by the developer prior to requesting an inspection for preliminary acceptance of the landscape works to ensure all items are compliant with the standards outlined in the LDG.

Site establishment and preparation				
DEVELOPER	REQUIREMENT	COMMENTS		
	Environmental protection works remain in place.			
	Works have been carried out in accordance with any specific plans required by the planning permit or approved civil or landscape plans.			
	Weed management has been started as per the standard or approved weed management plan.			
	Any imported topsoil is weed and debris free and in accordance with the relevant Australian Standard.			
Existing v	egetation management			
DEVELOPER	REQUIREMENT	COMMENTS		
	Tree protection measures are in place as per approved landscape plan or arborist report.			
Drainage	and WUSD			
DEVELOPER	REQUIREMENT	COMMENTS		
	Drainage and WSUD features are constructed in accordance with the approved civil and landscape plans and shapes and levels have not been altered.			
	There is no loose mulch below the Natural Top Water Level.			
	Maintenance access is in accordance with the approved plans.			
	Vehicle access, other than for maintenance, is restricted in accordance with the approved plans.			
	The landscape around civil infrastructures such as pits, outlets, inlets can easily be maintained particularly for mowing.			
	Drainage and WSUD planting is in accordance with the approved landscape plans, jute matting installed as per manufacturer's instructions. and where it abuts grass there is a 1m wide strip with no planting.			
	Grassed batter slopes are 1 in 5 or flatter.			
	Grassed areas associated with drainage or WSUD features have been sown or turfed.			
	Drainage and WSUD features have sediment control in place in accordance with the approvals.			
	Drainage and WSUD features and surrounds are free of litter and weeds.			
	Safety fencing installed as part of the civil works to prevent access to open water or falls from heights has been maintained or removed if no longer required.			

Trees and	tree management including street trees	
DEVELOPER	REQUIREMENT	COMMENTS
	Correct tree species, size, number and locations in accordance with approved landscape plans.	
	Trees are planted a minimum of 3m from fences or other structures or fixed edges to allow mowing.	
	Trees are correctly planted (in accordance with current City standard street tree planting details) including stakes, ties and wells. Ties allow room for the tree to move and grow.	
	Trees must be supplied in accordance with AS 2303-2018 Tree stock for landscape use	
	Nursery stakes and ties have been removed unless required by the City.	
Planting,	edging and mulch	
DEVELOPER	REQUIREMENT	COMMENTS
	Garden bed layout and construction materials are in accordance with the approved landscape plans.	
	Garden bed edges are flush with abutting surfaces and well defined, neat and tidy.	
	Plant species and numbers are generally in accordance with the approved landscape plans.	
	All plants display healthy growth.	
	Mulch is spread evenly to a depth of 75mm.	
	Garden beds are tidy and free of litter and weeds.	
	A 1m wide non-planted strip is provided to all planting areas along or within roads including roundabouts.	
	Tubestock are mulched with stakes and tree guards securely fixed and displaying healthy and vigourous growth.	
Grassing		
DEVELOPER	REQUIREMENT	COMMENTS
	New grass areas are evenly graded and free of rock, rubbish and other debris with an even coverage of good quality imported or improved site-won topsoil.	
	Grassed batter slopes are 1 in 5 or flatter.	
	Exotic grass areas display an even coverage with minimal bare patches and no weed growth.	
	For native grassed areas, weed management activities have commenced and site access is controlled in accordance with the approved landscape plans.	
	For native grassed areas, approved public information signage is in place.	
	Temporary fencing is installed to protect grass areas has been installed.	

Paths and paving				
DEVELOPER	REQUIREMENT	COMMENTS		
	Path locations, materials, widths and construction comply with the approved civil or landscape plans.			
	There are no defects or trip edges along paths and pavements.			
	Abutting surfaces are level with path and pavement surfaces with no trip edges or lips.			
	Any areas subject to surface ponding on paths and pavements have been rectified.			
Furniture	fencing and structures			
DEVELOPER	REQUIREMENT	COMMENTS		
	Park furniture type, locations and installations are in accordance with the approved civil or landscape plans.			
	Fence types, locations and installations are in accordance with the approved landscape plans without defects.			
	Vehicle access controls are in place and are in accordance with the approved landscape plans including provision of lockable maintenance access and maintenance considerations.			
Play space	es			
DEVELOPER	REQUIREMENT	COMMENTS		
	All acceptance documentation including but not limited to independent playground audits, as-built drawings if required, equipment details and warranties, certification of installation and certification of soft-fall mulch has been provided to the City's representative as per Form C.			
	Note safety fencing shall not be removed until the City's Representative approves in writing all of the above documentation.			
	Playground equipment, installation, drainage, edging and soft fall complies with the approved landscape plans and is safe, clean and tidy.			
Irrigation				
DEVELOPER	REQUIREMENT	COMMENTS		
	Where the developer has installed a sacrificial irrigation system all components are flush with the surrounds and do not create a tripping hazard. Note this system must be turned off at least 3 months before final acceptance or as directed by the City's Representative.			
	Where a permanent irrigation system is approved, irrigation systems including all components have been installed in accordance with the approved landscape plans.			
Maintena	nce			
DEVELOPER	REQUIREMENT	COMMENTS		
	Maintenance of all landscape works shown on the approved landscape plans is being undertaken including weed management as per standard weed management plan or a more detailed approved plan.			



## Final acceptance checklist

Form B is to be completed by the developer at least 2 weeks prior to requesting an inspection for final acceptance of the landscape works to ensure all items are compliant with the standards outlined in the LDG.

Acceptance documentation (FORM B)				
DEVELOPER	REQUIREMENT	COMMENTS		
	Information has been provided to the City prior to final acceptance in accordance with Form B including evidence that any utilities have been transferred to the City's name or have been disconnected.			
	Any works instructed to be completed or defects instructed to be rectified as part of an inspection by the City during the maintenance period have been completed.			
Site estab	lishment and preparation			
DEVELOPER	REQUIREMENT	COMMENTS		
	Environment protection works are established or removed as per civil or landscape plans.			
	Works have been carried out in accordance with Site Management Plan and any other specific plans required by the planning permit or approved plans.			
	A standard or detailed Weed Management Plan has been undertaken in accordance with the requirements of the WMP. Proof of weed control works may be requested by the City.			
Existing v	egetation management			
DEVELOPER	REQUIREMENT	COMMENTS		
	Existing trees to be retained, whether on subdivision land or adjoining property, must be not be showing signs of distress due to subdivision construction and any remediation works are complete. The City may ask for an independent arborist audit on the health and structure of existing trees.			
Drainage a	and WSUD			
DEVELOPER	REQUIREMENT	COMMENTS		
	All drainage and WSUD features and surrounds are free of litter.			
	All drainage and WSUD features have no more than 10% undesirable weed cover and 0% noxious weed cover.			
	All planting, including aquatic and terrestrial plants, are established and display good health.			
	All permanent sediment control measures are in place, have been recently cleaned out and are operational.			
	All temporary sediment traps are removed as directed by the City.			
	Grassed areas have achieved 90% coverage, have been maintained and any temporary irrigation systems have been removed 3 months prior to final acceptance.			
	Safety fencing installed as part of the civil works has been removed.			
	Areas of erosion have been controlled and are no longer active.			
	Rockwork is secure and in correct location with no evidence of erosion.			

Trees and tree management including street trees					
DEVELOPER	REQUIREMENT	COMMENTS			
	Correct tree species, size, number and locations in accordance with approved landscape plans.				
	Trees display sound structure, good health and form in accordance with the City's standards including having a single, straight leader where appropriate.				
	Formative pruning has been undertaken to ensure trunk and graft (if applicable) is free from offshoots and crown displays good form and no branches are obstructing the footpath.				
	Trees display structural integrity (the root ball does not move) and display vigorous healthy growth. Any tree where movement occurs shall be replaced.				
	Top of root ball must not be lower than final or natural ground level.				
	The calliper at any given point on the stem must be less than the calliper at any lower point on the stem.				
	At least one half of the foliage distribution must be on branches in the lower two-thirds of the trunk.				
	Where tree stock has a defined central leader, an apical bud must be intact and any stem deviation from vertical shall not exceed 15°.				
	Trees are free of pests and diseases.				
	All weeds, builder's rubble and suckering material have been removed.				
	Tree stakes and ties, protection frame, plastic watering collar and tree guards have been removed where houses are fully constructed or as directed by the City.				
Planting,	edging and mulch				
DEVELOPER	REQUIREMENT	COMMENTS			
	Garden bed edges are flush with abutting surfaces, securely fixed and well defined, neat and tidy, trimmed to paths and edges, guards are removed and weed free.				
	Any dead, diseased or missing plants have been replaced a minimum of 3 months prior to final acceptance. Proof (such as photos/site meeting) of planting date may be requested.				
	All plants display healthy and vigorous growth and if growing over paths have been trimmed back.				
	Mulch is spread evenly to a depth of 75mm and there are no trip edges with footpaths.				
	A 1m wide non-planted strip has been maintained to all planting areas along or within roads including roundabouts and is weed free.				
Grassing					
DEVELOPER	REQUIREMENT	COMMENTS			
	Grass areas are level and topped up against edges and do not have low points.				
	Exotic grass is displaying even, healthy, vigorous growth and has maintained coverage of 90% with no consistent dead patches evident with no active weed growth.				
	Exotic, lawn grass is no longer than 100mm and no shorter than 50mm.				

	Native grass areas are to be free of weeds (10% coverage tolerable in certain conditions), 75% coverage and free of stones over 25mm diameter				
	For native grassed areas, approved public information signage is in place if still required by the City.				
	Any temporary fencing has been removed unless requested to remain by the City's Representative.				
Paths and	l paving				
DEVELOPER	REQUIREMENT	COMMENTS			
	There are no defects or trip edges along paths and pavements.				
	Abutting surfaces are level with path and pavement surfaces with no trip edges or lips and no evidence of water ponding over paths.				
	Gravel paved areas have no evidence of washout areas.				
Furniture	, fencing and structures				
DEVELOPER	REQUIREMENT	COMMENTS			
	All park furniture is cleaned, timber components have been oiled (where appropriate) and is in good working order.				
	Contractor to notify City's Representative of how many padlocks are required prior to the inspection and remove all contractor padlocks.				
Play space	es				
DEVELOPER	REQUIREMENT	COMMENTS			
	All play equipment is free from defects.				
	Soft-fall mulch is a minimum depth as required by the relevant Australian Standard.				
	Planting within and around the play space is healthy and growing vigourously and has not been adversely damaged by play spaces users.				
Irrigation					
DEVELOPER	REQUIREMENT	COMMENTS			
	Temporary irrigation system has been turned off and removed a minimum of 3 months prior to final acceptance unless otherwise agreed by the City. The City may request photographic proof of the date that the system was removed. Where a permanent irrigation system is approved, all acceptance documentation including but not limited to supply of operation manuals, as-built drawings and maintenance schedule have been provided to the City's Representative in accordance with Form C.				
Other landscape features					
DEVELOPER	REQUIREMENT	COMMENTS			
	Approved temporary entry features, estate or other signage have been decommissioned and removed in accordance with any agreements with the City.				
Maintenance					
DEVELOPER	REQUIREMENT	COMMENTS			
	Maintenance, including weed management, of all landscape works shown on the approved landscape plans has been completed.				



## Final acceptance documentation

If relevant the developer must complete the following documentation and send to the City's representative.

ITEM	DOCUMENT	PRIOR TO	DATE PROVIDED
Structures	Building Permit	Preliminary acceptance	
	Structural as-built drawings and Certificate of Compliance - Engineering	Preliminary acceptance	
	Certificate of Compliance - Plumbing	Preliminary acceptance	
	Certificate of Compliance - Electrical	Preliminary acceptance	
	Material details and maintenance schedule or proprietary item details including colours (if not included on landscape plans)	Preliminary acceptance	
	Final Certificate (or Statement of Occupancy)	Preliminary acceptance	
Barbecues	Certificate of Compliance - Electrical	Preliminary acceptance	
Darbecues	Utility connection in City's name	Final acceptance	
	Structural as-built drawings and Certificate of Compliance - Engineering	Preliminary acceptance	
Boardwalks, decks etc.	Building permit (if necessary)	Preliminary acceptance	
	Material details and maintenance schedule (if not included on landscape plans)	Preliminary acceptance	
	Certificate of Compliance - Plumbing	Preliminary acceptance	
Drinking fountain	Utility connection in City's name	Final acceptance	
lountain	Proprietary item details (if not included on landscape plans)	Preliminary acceptance	
	Independent Playground Audit - Design	Preliminary acceptance	
	Independent Playground Audit - Construction	Preliminary acceptance	
	As-built drawings including drainage (if required)	Preliminary acceptance	
Play equipment	Proprietary equipment details and manufacturers warranties	Preliminary acceptance	
	Certification of installation of play equipment	Preliminary acceptance	
	Certification of soft-fall mulch as compliant with AS4422	Preliminary acceptance	
Irrigation	Operations Manual including schedules of items and parts, as-built plans, instructions and maintenance	Preliminary acceptance	
systems	Utility connection in City's name	Final acceptance	
Public art	Material details and maintenance schedule	Preliminary acceptance	
	Certificate of Compliance - Engineering	Preliminary acceptance	



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