

WARRIEWOOD VALLEY RELEASE AREA

Landscape Masterplan and Design Guidelines (Public Domain)

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DISCLAIMER

NOTE:
The facilities and features on this plan are diagramatic only and the actual location will be subject to regular reviews of the Section 94 Plan by Council, and will also be dependant on survey, site considerations and compliance with all relevant standards and requirements.

All internal Sector Road Layouts/ Landscaping/ Open Space (Apart from Sectors 1, 2, 8, 10, 11 and 12) are indicative only and reflect submissions by the Developers at the time of preparation of this Plan.

Council does not endorse or otherwise the proposals by the Developer in each Sector

November 2016

Contents

1.1 Generally

The Warriewood Release Area Landscape Masterplan and Design Guidelines (Public Domain) have been prepared to provide Pittwater Council and the development community with a coordinated basis upon which planning and design of streetscape, open space and creekline corridor improvements can be undertaken through out staged development of the release area.

The design guidelines are aimed to provide minimum standards upon which site specific design development of sustainable landscape strategies can be undertaken. Landscape elements include:

- Setbacks of street tree planting to road corridors
- Standards for street tree planting materials and size
- Standards for open space and creekline landscape enhancement and key design principles

The Warriewood Valley Release Area project is a significant initiative which aims to establish a coordinated framework for integrated development to occur in the valley focusing upon the “green” corridors provided by creekline corridors and related open space and roadway links.

The Landscape Masterplan and Design Guidelines (Public Domain) build upon the existing planning controls in place for the Warriewood Valley Release Area including:

- Development Control Plan No.9 (1997)
- Development Control Plan No.29 (2001)

The recommendations and principles established by the masterplan/design guidelines supplement the landscape controls provided in these documents and should be read in conjunction with them.

The development of site specific design solutions by development consortiums must take into account detailed site conditions including levels, existing vegetation, etc. The solutions must integrate and respond to the requirements outlined in this document and the preceding planning controls identified above. Design solutions must also encompass the opportunities for innovative and stimulating landscape design which can enhance the lifestyles of permanent and workforce residents, and develop a sustainable and attractive environment for Warriewood Valley.

1.2 Structure of the Report

This report is presented in three principal sections:

Section 2 Landscape Masterplan

Describes the overall landscape strategies for the release area incorporating creekline corridors, open space areas (Central Local Park, Neighbourhood Parks, and Sport Fields), and road corridors (Avenues, Industrial Avenues, and Sector Roads).

Section 3 Streetscape Planting Guidelines

Landscape plan and sectional guidelines for design development of street corridor plantings.

Section 4 Creekline Planting Guidelines

Landscape plan and sectional guidelines for design development of creekline corridors landscape treatments. Guidelines provide design principles which must be subject to site specific Hydraulic and Civil Engineering design.

Section 5 Central Local Park and Active Sportsfield

Schematic plans of generic active sportsfield and schematic design of the Central Local Park.



2.1 Generally

The Landscape Masterplan on the following page summarises the landscape related components of the Warriewood Valley Release Area Planning Controls (DCP's, Section 94 Plan, and Roads Masterplan). These include:

Street Corridors	Street tree planting themes to avenues, industrial avenues, and sector streets. Street trees species for sector shareways and accessways are also identified.
Creekline Corridors, Open Space and Buffer Zones	Indicate the 50 m wide multi-use open space reservation to the Narrabeen and Fern Creek Corridors to incorporate pedestrian/cycleway access, creekline rehabilitation and bank stabilisation, weed removal and native revegetation, and passive use recreation.
Open Space and Buffer Zones	The Masterplan incorporates an indicative open space scheme for district and neighbourhood parks incorporating development conservation proposals. Buffer zones as indicated represent proposed location of dual purpose (buffer and access link) zones adjoining sensitive areas or required setbacks and screening.
Service and Recreation	Identify the indicative location of off road pedestrian and cycleway linkages, playground facilities and public transport nodes.

The aim of the masterplan is to provide a consolidated reference document encompassing all landscape related objectives and requirements of the planning controls for the release area.

Key Public Domain Principles outlined in the DCP which underpin the masterplan and design guidelines following include:

Safety	Provision of safe pedestrian and cycle access through road corridors, creek corridors, and open space areas.
Connectivity	Vehicular and pedestrian access is efficiently managed through a hierarchy network of attractive and clearly defined links.
Bush in the Valley	A minimum of 40% of creekline corridor area is to comprise native vegetation (existing and new) to establish interconnected flora and fauna corridors. The corridors are to support multi-use objectives including pedestrian/cycle access, and passive recreation.
Recreation in the Valley	Distribution of open space / parkland areas to cater for a variety of functions and user types including playground facilities and park furniture.

Streetscape guidelines have been prepared to guide those responsible for planning and development of the public domain in the Warriewood Valley in the implementation of Council's objectives for a coordinated, functional and attractive landscape image.

A key consideration in the development of guideline has been the objective of establishing common themes for the layout of streetscape elements such as tree planting, shared pedestrian/cycle paths and street lighting.

The presence of underground services and utilities places a significant constraint on the ability to provide meaningful street tree canopy. Street trees of adequate scale (height and spread) are the fundamental strategy by which Council's objectives of "Bushland in the Valley" and quality of living and working environment can be realised.

The cross sections shown on the streetscape guidelines indicate the options available for incorporation of street tree planting in the typical footpath reserve situation identified by Council's Masterplan.

These options indicate that for Sub Arterials a consistent setback 0.55 metres from the property boundary is preferred. To Avenues incorporating existing kerb and footpath formations and services/ utilities (eg. section of Macpherson Street) this may require adjustment based on exact location of Ausgrid Utilities.

For Collector Roads, a centred carriageway, enabling a tree alignment of 2.0 metres from property boundary is preferred.

Liaison will be required with Ausgrid (Avenues) and Telstra (Collector Roads) to ensure that tree alignments can be achieved for these corridor types.





WARRIEWOOD VALLEY RELEASE AREA

WARRIEWOOD VALLEY OPEN SPACE & STREETScape MASTERPLAN

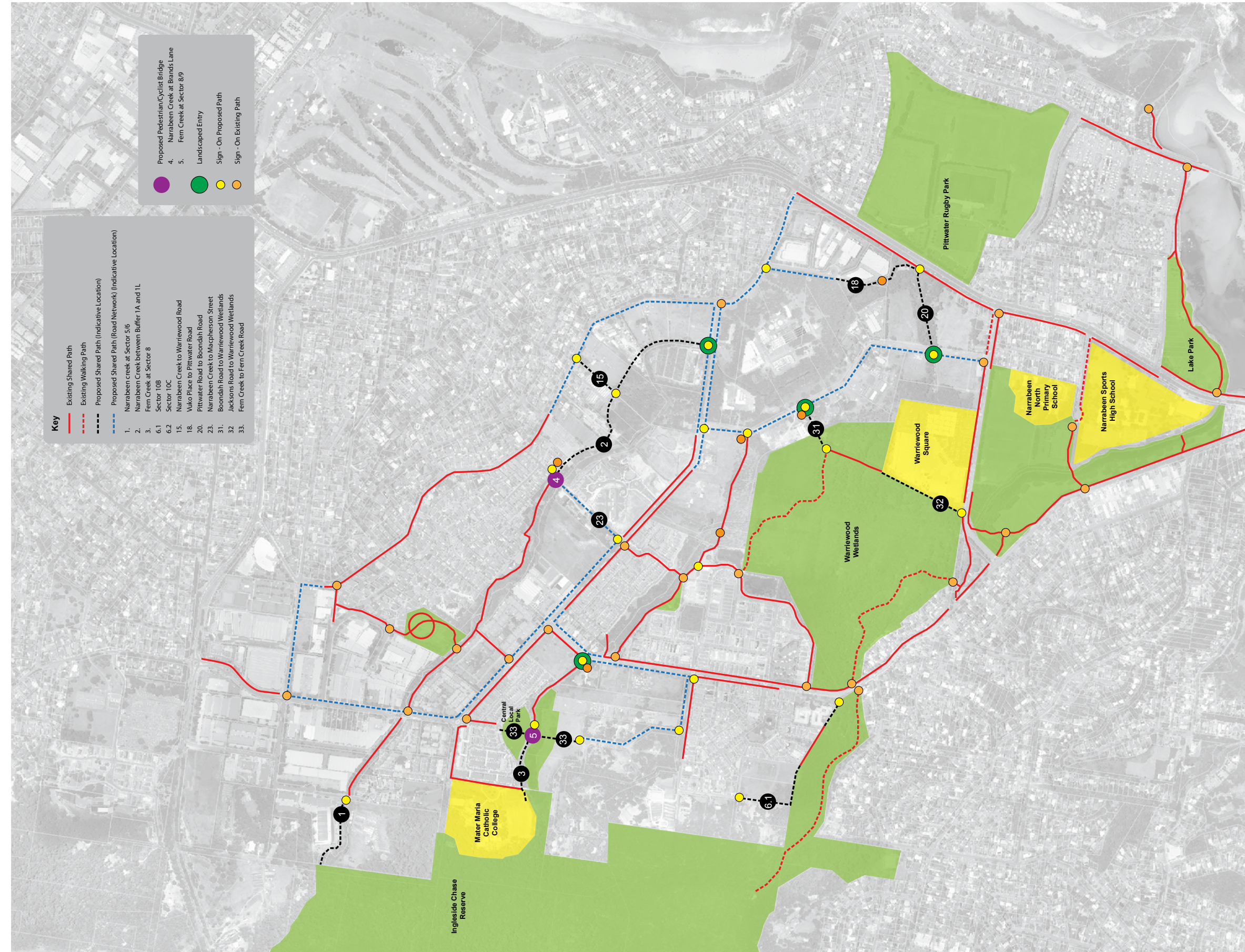
Update Aug 2016

NORTHERN BEACHES
COUNCIL

Landscape Masterplan

2.0

November 2016



NORTHERN BEACHES
COUNCIL

WARRIEWOOD VALLEY RELEASE AREA
WARRIEWOOD VALLEY ACTIVE TRAVEL MASTERPLAN
Update Nov 2016

Landscape Masterplan

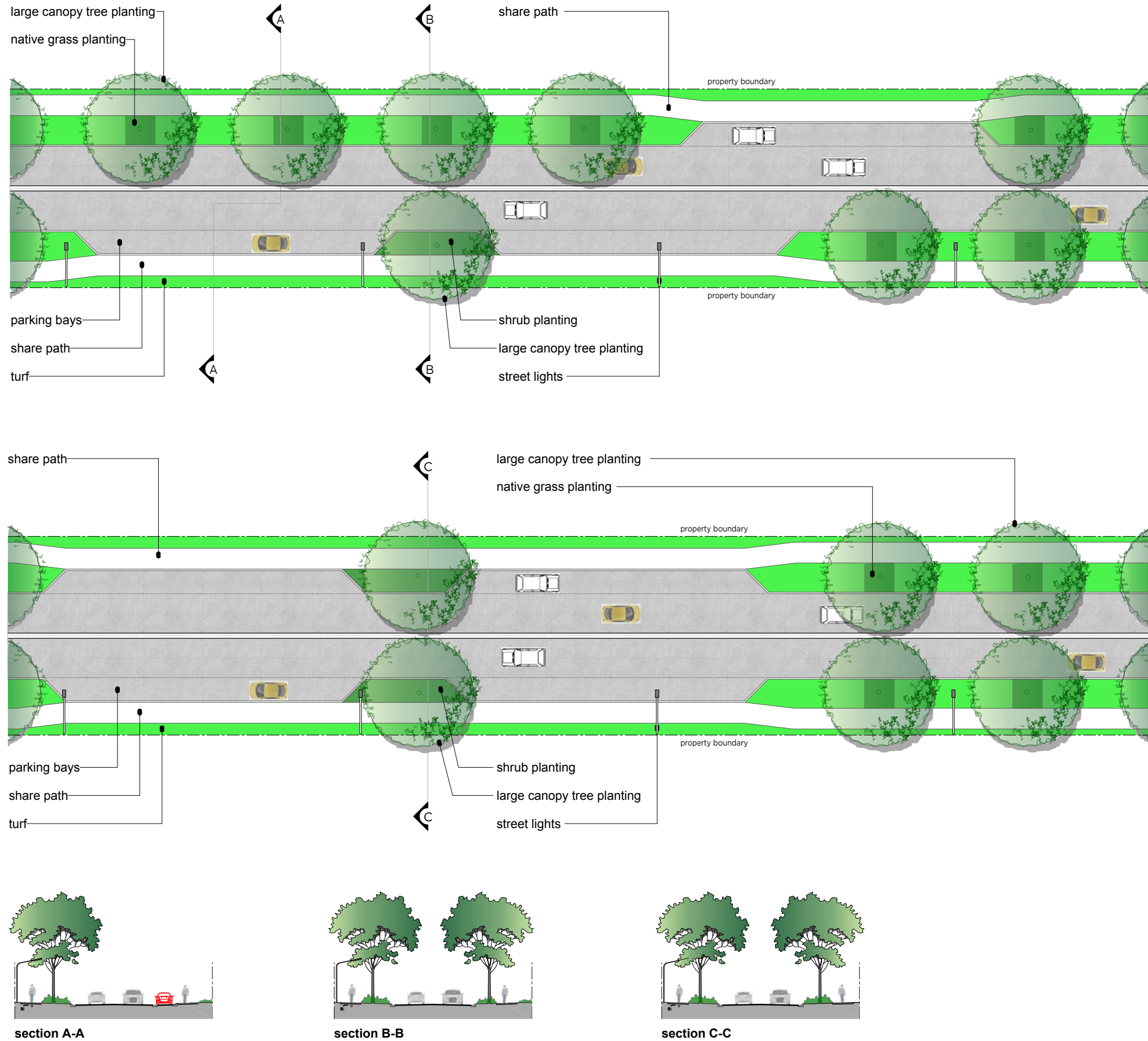
2.0
November 2016

Plant species for landscape development

STREET CORRIDORS		CREEKLINE CORRIDORS (CENTRAL 50M PUBLIC CORRIDOR)	
LARGE CANOPY TREES	ANGOPHORA COSTATA	AQUATIC PLANTS (0.0 TO 0.3M WATER DEPTH)	ALISMA PLANTAGO-AQUATICA
	ANGOPHORA FLORIBUNDA		BAUMEA ARTICULATA
	EUCALYPTUS PUNCTATA		BAUMEA JUNCEA
	LOPHOSTEMON CONFERTUS		BAUMEA RIBIGNOSA
	SYNCARPIA GLOMULIFERA		BOLBOSCHOENUS FLUVIATILIS
	SYZYGIUM PANICULUTUM		BOLBOSCHOENUS CADWELLII
	WATERHOUSIA FLORIBUNDA		ELEOCHARIS SPHACELATA
MEDIUM CANOPY TREES	BANKSIA INTEGRIFOLIA	LITTORIAL PLANTS FREQUENTLY INUNDATED	PHILYDRUM LANGUINOSUM
	CALLISTEMON 'HANNAH RAY'		PHRAGMITIES AUSTRALIA
	CORYMBIA FICIFOLIA		SCHENOPECTUS VALIDUS
	EUCALYPTUS HAEMASTOMA		TRIGLOCHIN PROCERA
	SYZYGIUM LEUHMANNII		
	MELALEUCA STYPHELOIDES		
	TRISTANIOPSIS LAURINA		CAREX APPRESSA
	XANTHOSTEMON CHRYSANTHUS		JUNCUS KRAUSSII
SMALL CANOPY TREES	ACMENA SMITHII 'CULTIVARS'	GRASSES INFREQUENTLY INUNDATED	JUNCUS USITATUS
	BACKHOUSIA MYRTIFOLIA		CYPERUS BREVIFOLIUS
	BUCKINGHAMIANA CELSISSIMA		ISCAHNE GLOBOSA
	CALLISTEMON 'ENDEAVOUR'		PHILYDRUM LANGUINOSUM
	CALLITRIS RHOMBOIDEA		
	CERATOPETALUM GUMMIFERUM		CAREX APPRESSA
	ELAEOCARPUS RETICULATUS		DIANELLA CAERULEA
	HYMENOSPORUM FLAVUM		GAHNIA SIEBERANA
	LEPTOSPERMUM PETERSONII		ISOLEPIS NODOSA
	MELALEUCA LINARIIFOLIA		LOMANDRA LONGIFOLIA
	METROSIDEROS EXCELSA		JUNCUS USITATUS
	SYZYGIUM PANICULATUM 'SMALL CULTIVARS'		PLUS LOCALLY NATIVE GRASSES
	TRISTANIA LAURINA	SHRUBS	ACACIA ELONGATA
	* ACER PALMATUM		ACACIA LONGIFOLIA
* LAGERSTROEMIA 'CULTIVARS'	ACACIA SUAVEOLENS		
* MURRAYA PANICULATA (not hedged)	ACACIA IMPLEXA		
* PHOTINIA 'CULTIVARS'	ACACIA DECURRENS		
* VIBURNUM TINUS (not hedged)	CALLISTEMON CITRINUS		
	* Selected exotic small trees to be used for		CALLISTEMON LINEARIS
less than 6m wide and front setback	small lots of 3m only		GOODENIA PANICULATA
PALM TREES	LIVISTONA AUSTRALIS		LEPTOSPERMUM JUNIPERINUM
			KUNZEA AMBIGUA
SHRUBS	CALLISTEMON 'SMALL CULTIVARS' to 1m		MELALEUCA ERICIFOLIA
	CORREA ALBA		PULTANAEA VILLOSA
	WESTRINGIA 'SMALL CULTIVARS' to 1m		PITTOSPORUM REVOLUTUM
		TREES	
GROUNDCOVERS	DIANELLA SP.		ACMENA SMITHII
	LOMANDRA 'SMALL CULTIVARS':		ANGOPHORA COSTATA (ON SAND RIDGES)
			ANGOPHORA FLORIBUNDA
			BACKHOUSIA MYRTIFOLIA
			CALLITRIS RHOMBOIDEA
			CASUARINA GLAUCA
			CERATOPETALUM APETALUM
			CERATOPETALUM GUMMIFERUM
			EUCALYPTUS ROBUSTA
			EUCALYPTUS BOTRYOIDES
			GIOCHIDION FERDINAND
			SYNCARPIA GLOMULIFERA
			LIVISTONA AUSTRALIS

CREEKLINE CORRIDORS (25M PRIVATE CREEKLINE BUFFER STRIP)			NARRABEEN CREEK	FERN CREEK	MULLET CREEK
CANOPY TREES	SWAMP MAHOGANY	EUCALYPTUS ROBUSTA	X		X
	PORT JACKSON FIG	FICUS RUBIGINOSA		X	X
	SANDERPAPER FIG	FICUS CORONATA		X	
	WATER GUM	TRISTANIOPSIS LAURINA		X	X
	SMOOTH BARKED APPLE	ANGOPHORA COSTATA		X	X
	ROUGH BARKED APPLE	ANGOPHORA FLORIBUNDA		X	
	SWAMP SHE-OAK	CASUARINA GLAUCA	X		X
	SNOW-IN-SUMMER	MELALEUCA LINEARIFOLIA			X
	SWAMP PAPERBARK	MELALEUCA ERICIFOLIA	X		X
	CABBAGE TREE PALM	LIVISTONIA AUSTRALIS	X	X	X
	COAST BANKSIA	BANKSIA INTEGRIFLORA	X		X
	TURPENTINE	SYNCARPIA GLOMULIFERA			
	GREY GUM	EUCALYPTUS PUNCTATA	X		X
	BANGALAY	EUCALYPTUS BOTRYOIDES		X	X
	LILLY PILLY	ACMENA SMITHII		X	
	CHEESE TREE	GLOCHIDION FERDINANDI		X	X
	PAPAREBARK	MELALEUCA QUINQUENERVIA	X		
	COACHWOOD	CERATOPETALUM APETALUM		X	X
	ROUGH TREE FERN	CYATHEA AUSTRALIS	X	X	X
UNDERSTOREY/SHRUBS	ROUGH TREE FERN	CYATHEA AUSTRALIS	X	X	X
	SWEET WATTLE	ACACIA SUAVEOLENS	X	X	X
	HONEYSUCKLE BANKSIA	BANKSIA SPINULOSA	X		X
	COAST BANKSIA	BANKSIA INTEGRIFOLIA	X		X
	NSW CHRISTMAS BUSH	CERATOPETALUM GUMMIFERUM	X	X	X
	PINK SPIDER FLOWER	GREVILLEA SERICEA	X		X
	CYCAD	MACROZAMIA COMMUNIS	X		X
	RED FLOWERING PAPERBARK	MELALEUCA HYPERICIFOLIA	X		X
	BLACK WATTLE	CALLICOMA SERRATIFOLIA		X	
	GOLDEN GUINEA FLOWER	HIBBERTIA SCANDENS	X	X	X
NATIVE GRASS & AQUATICS	GRASS TREE	XANTHORRHOEA SPP	X		X
	DOG ROSE	BAUERA RUBIODES		X	X
	KANGAROO GRASS	THEMEDA AUSTRALIS		X	X
	WATER VINE	CISSUS HYPOGLAUCA	X	X	X
	RUSH	JUNCUS SPP	X	X	X
	WATER SEDGE	GAHNIA SIEBERANA	X		
	MAT RUSH	LOMANDRA LONGIFOLIA	X	X	X
	WEeping GRASS	MICROLAENA STIPOIDES	X	X	X
RECREATION OPEN SPACES					
FERN CREEK DISTRICT PARK	REFER CREEKLINE CORRIDOR PLANTING - FERN				
APOLLO RESERVE WETLAND	REFER CREEKLINE CORRIDOR PLANTING - NARRABEEN				
SECTOR 1 N'BOOD PARK	REFER CREEKLINE CORRIDOR PLANTING - NARRABEEN				
SECTOR 8 N'BOURH'D PARK	REFER CREEKLINE CORRIDOR PLANTING - FERN				
SECTOR 10 N'BOURH'D PARK	REFER CREEKLINE CORRIDOR PLANTING - MULLET				
BOONDAH RD SPORTSFIELDS	REFER CREEKLINE CORRIDOR PLANTING - NARRABEEN				
BUFFER PLANTINGS					
SECTOR ONE	REFER CREEKLINE CORRIDOR PLANTING - NARRABEEN				
SECTOR THREE	REFER CREEKLINE CORRIDOR PLANTING - FERN				
WARRIEWOOD WETLAND	REFER CREEKLINE CORRIDOR PLANTING - MULLET				

Streetscape
Guidelines



Landscape Materials Schedule

S-1

SHARE PATH

2.1m wide min. concrete construction with broom surface finish to Australian Standards

TURF AREAS

existing subgrade shall be excavated to loosen the ground conditions to 200mm depth

retain all quality existing topsoil in place, subject to approval from Council

poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council

GARDEN AREAS

existing subgrade shall be excavated to loosen the ground conditions to 400mm depth

retain all quality existing topsoil in place, subject to approval from Council

poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council

garden bed areas shall be mulched with 100mm hardwood chip

all trees installed shall be certified as compliant to Natspec's Specifying Trees

PLANTING

□ tree pits
35 to 200 litre stock

tree pits shall be a minimum of 700mm depth x 2.0m wide

□ tree pits
400 litre stock

tree pits shall be a minimum of 700mm depth x 2.5m wide

□ soilmix and mulch

backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval

all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix

mulch shall consist of 75mm coarse hardwood chip mulch

□ pot sizes
35 - 75 litre stock

shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council

□ tree pits
200 litre stock

shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council

□ tree pits
400 litre stock

shall be planted for all Medium and Large Canopy Trees listed in 2.0 Plant Species, or as advised by Council

REFER TO CURRENT WARRIWOOD VALLEY ROADS MASTER PLAN FOR ROAD RESERVE AND CARRIAGEWAY WIDTHS

Guidelines

Location

Ponderosa Parade, MacPherson Street, Warriewood Road (east of MacPherson Street), Garden Street

Principles

Street tree planting to be installed as per masterplan generally at 6-12m intervals dependant of the species characteristics, mature size and location.

All street trees to be minimum 35-400 litre stock, dependant of species selection and location, and this is subject to final approval by Council. All street trees shall be subject to pre-order of plant material. All trees to be grown by recognised nursery under natspec growing guidelines.

Existing trees over 3 metres in height are to be retained where possible, with consideration to health and condition, within the road reserve. Such trees are to be protected through perimeter 1.8 metre high temporary fencing during the construction of works.

All kerb widenings to incorporate mass planted areas of suitable low height shrubs and groundcovers. Planting should be selected relative to sight lines required for specific locations.

Street tree plantings to footpath should generally include underplantings of native grasses.

Garden area planting to be at a high density (ie. 4 per m2 for shrubs and 9 per m2 for groundcovers) and generally include drought tolerant native species up to 1m in ultimate height. All shrub planting should be a minimum 5 litre pot size and groundcovers shall be 200mm pot size.

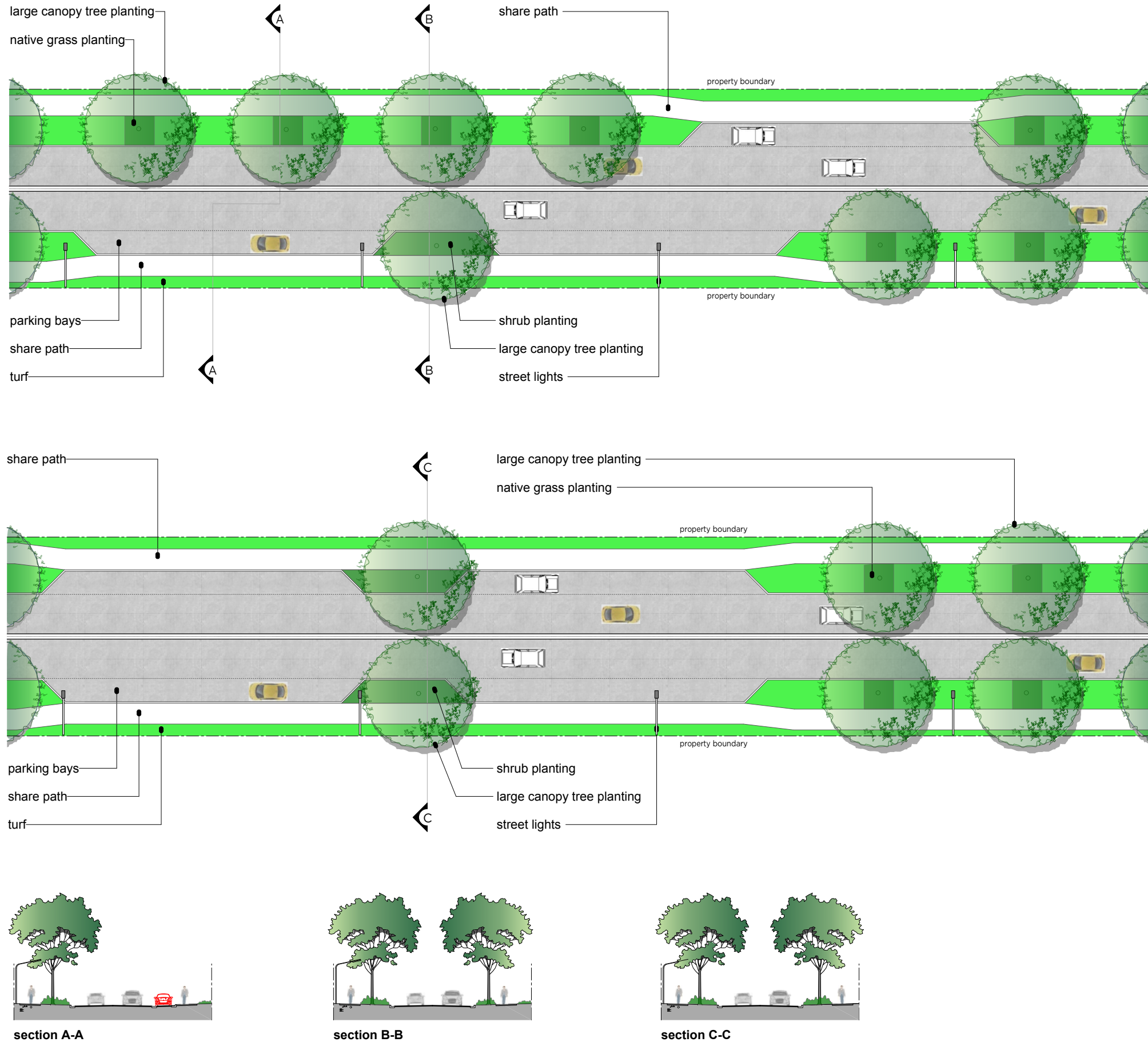
Water points to be provided to verge planting areas at 50-100m centres dependent on ultimate street layout.

All pram or disabled access ramps to be in accordance with Austroad, DDA and Australian Standards.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

Generally all plant material is to be endemic to the area. Plant material not endemic to the area may be used to accent planting for nominated entries or features but kept to a design minimum.

Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



Landscape Materials Schedule

S-2

SHARE PATH

2.1m wide min. concrete construction with broom surface finish to Australian Standards

TURF AREAS

existing subgrade shall be excavated to loosen the ground conditions to 200mm depth

retain all quality existing topsoil in place, subject to approval from Council

poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council

GARDEN AREAS

existing subgrade shall be excavated to loosen the ground conditions to 400mm depth

retain all quality existing topsoil in place, subject to approval from Council

poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council

garden bed areas shall be mulched with 100mm hardwood chip

PLANTING

all trees installed shall be certified as compliant to Natspec's Specifying Trees

tree pits 35 to 200 litre stock

tree pits shall be a minimum of 700mm depth x 2.0m wide

tree pits 400 litre stock

tree pits shall be a minimum of 700mm depth x 2.5m wide

soilmix and mulch

backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval

all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix

mulch shall consist of 75mm coarse hardwood chip mulch

pot sizes 35 - 75 litre stock

shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council

tree pits 200 litre stock

shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council

tree pits 400 litre stock

shall be planted for all Medium and Large Canopy Trees listed in 2.0 Plant Species, or as advised by Council

REFER TO CURRENT WARRIWOOD VALLEY ROADS MASTER PLAN FOR ROAD RESERVE AND CARRIAGEWAY WIDTHS

Guidelines

Location

Foley Street, Jubilee Avenue, Vineyard Street, Orchard Street, Daydream Street, Boondah Road

Principles

Street tree planting to be installed as per masterplan generally at 6-12m intervals dependant of the species characteristics, mature size and location.

All street trees to be minimum 35-400 litre stock, dependant of species selection and location, and this is subject to final approval by Council. All street trees shall be subject to pre-order of plant material. All trees to be grown by recognised nursery under natspec growing guidelines.

Existing trees over 3 metres in height are to be retained where possible, with consideration to health and condition, within the road reserve. Such trees are to be protected through perimeter 1.8 metre high temporary fencing during the construction of works.

All kerb widenings to incorporate mass planted areas of suitable low height shrubs and groundcovers. Planting should be selected relative to sight lines required for specific locations.

Street tree plantings to footpath should generally include underplantings of native grasses.

Garden areas planting to be at a high density (ie. 4 per m2 for shrubs and 9 per m2 for groundcovers) and generally include drought tolerant native species up to 1m in ultimate height. All shrub planting should be a minimum 5 litre pot size and groundcovers shall be 200mm pot size.

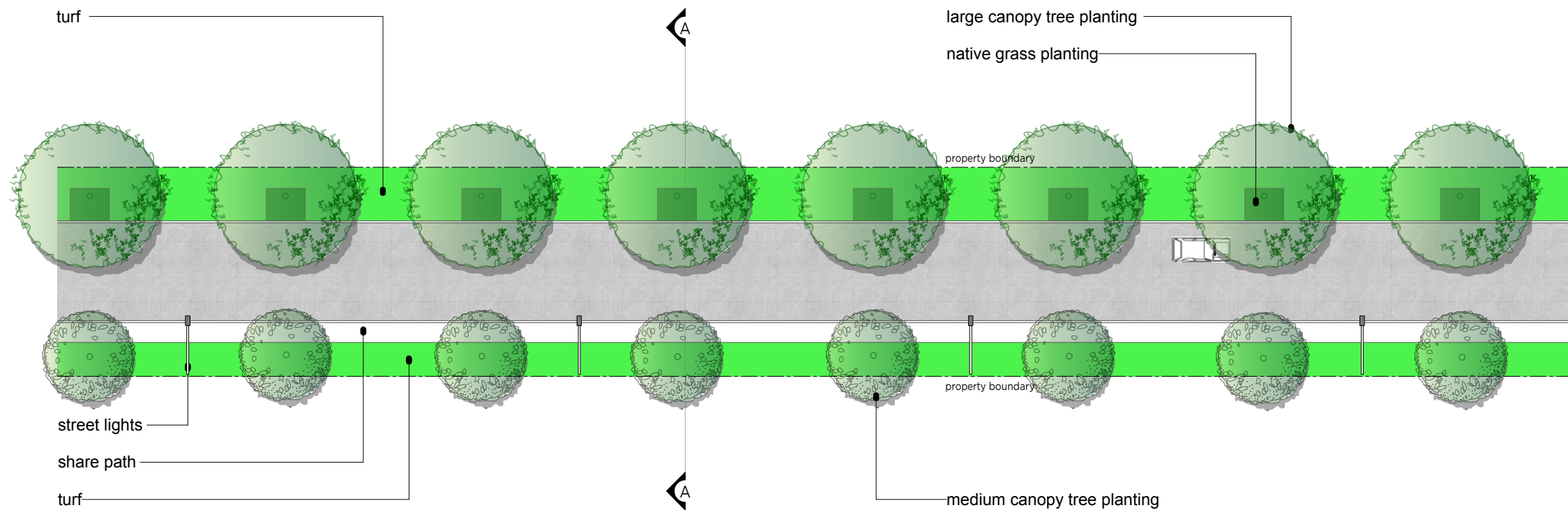
Water points to be provided to verge planting areas at 50-100m centres dependent on ultimate street layout.

All pram or disabled access ramps to be in accordance with Austroad, DDA and Australian Standards.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

Generally all plant material is to be endemic to the area. Plant material not endemic to the area may be used to accent planting for nominated entries or features but kept to a design minimum.

Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



section A-A

Landscape Materials Schedule

S-3

SHARE PATH	1.5m wide min. concrete construction with broom surface finish to Australian Standards	GARDEN AREAS	existing subgrade shall be excavated to loosen the ground conditions to 400mm depth retain all quality existing topsoil in place, subject to approval from Council poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council garden bed areas shall be mulched with 100mm hardwood chip	PLANTING	all trees installed shall be certified as compliant to Natspec's Specifying Trees tree pits shall be a minimum of 700mm depth x 2.0m wide tree pits shall be a minimum of 700mm depth x 2.5m wide backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix mulch shall consist of 75mm coarse hardwood chip mulch	□ pot sizes 35 - 75 litre stock □ tree pits 200 litre stock □ tree pits 400 litre stock	shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council shall be planted for all Medium and Large Canopy Trees listed in 2.0 Plant Species, or as advised by Council
+ Note	The exception to this provision for a 1.5m sharepath applies to Fern Creek Road, which in accordance with the Active Travel Masterplan requires a 2.1m wide sharepath along Fern Creek Road	TURF AREAS	existing subgrade shall be excavated to loosen the ground conditions to 200mm depth retain all quality existing topsoil in place, subject to approval from Council poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council				

REFER TO CURRENT WARRIEWOOD VALLEY ROADS MASTER PLAN FOR ROAD RESERVE AND CARRIAGEWAY WIDTHS

Guidelines

Principles

Street tree planting to be installed as per masterplan generally at 6-12m intervals dependant of the species characteristics, mature size and location.

All street trees to be minimum 35-400 litre stock, dependant of species selection and location, and this is subject to final approval by Council. All street trees shall be subject to pre-order of plant material. All trees to be grown by recognised nursery under natspec growing guidelines.

Existing trees over 3 metres in height are to be retained where possible, with consideration to health and condition, within the road reserve. Such trees are to be protected through perimeter 1.8 metre high temporary fencing during the construction of works.

All kerb widenings to incorporate mass planted areas of suitable low height shrubs and groundcovers. Planting should be selected relative to sight lines required for specific locations.

Street tree plantings to footpath should generally include underplantings of native grasses.

Garden area planting to be at a high density (ie. 4 per m2 for shrubs and 9 per m2 for groundcovers) and generally include drought tolerant native species up to 1m in ultimate height. All shrub planting should be a minimum 5 litre pot size and groundcovers shall be 200mm pot size.

Water points to be provided to verge planting areas at 50-100m centres dependent on ultimate street layout.

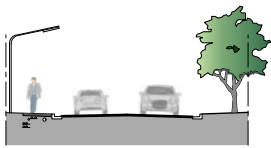
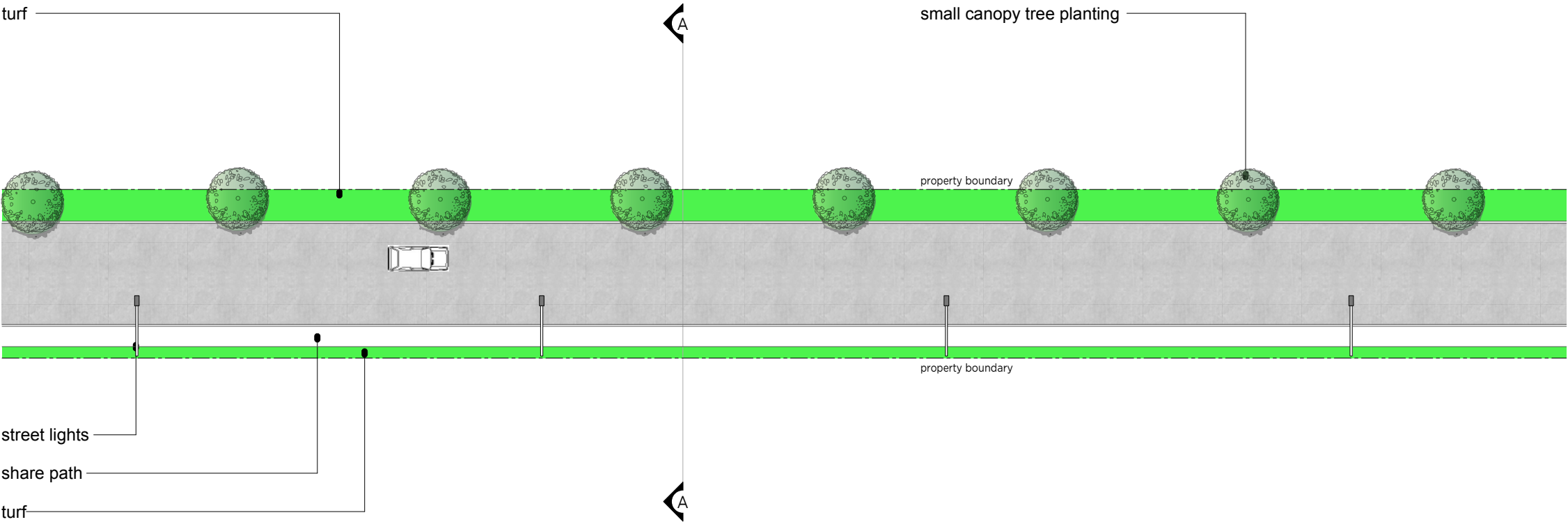
All pram or disabled access ramps to be in accordance with Austroad, DDA and Australian Standards.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

All trees planted in turf shall include timber edges with min. 2m x 2m hardwood edging and mulched pit

Generally all plant material is to be endemic to the area. Plant material not endemic to the area may be used to accent planting for nominated entries or features but kept to a design minimum.

Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



section A-A

Landscape Materials Schedule

S-4

SHARE PATH	1.5m wide min. concrete construction with broom surface finish to Australian Standards
TURF AREAS	existing subgrade shall be excavated to loosen the ground conditions to 200mm depth retain all quality existing topsoil in place, subject to approval from Council poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council

GARDEN AREAS

existing subgrade shall be excavated to loosen the ground conditions to 400mm depth
retain all quality existing topsoil in place, subject to approval from Council
poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council
garden bed areas shall be mulched with 100mm hardwood chip

PLANTING

□ tree pits 35 to 200 litre stock	all trees installed shall be certified as compliant to Natspec's Specifying Trees tree pits shall be a minimum of 700mm depth x 2.0m wide
□ soilmix and mulch	backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix mulch shall consist of 75mm coarse hardwood chip mulch
□ pot sizes 35 - 75 litre stock	shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council
□ tree pits 200 litre stock	shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council

□ soilmix and mulch

REFER TO CURRENT WARRIEWOOD VALLEY ROADS MASTER PLAN FOR ROAD RESERVE AND CARRIAGEWAY WIDTHS

Guidelines

Principles

Street tree planting to be installed as per masterplan generally at 6-12m intervals dependant of the species characteristics, mature size and location.

All street trees to be minimum 35-200 litre stock, dependant of species selection and location, and this is subject to final approval by Council. All street trees shall be subject to pre-order of plant material. All trees to be grown by recognised nursery under natspec growing guidelines.

Existing trees over 3 metres in height are to be retained where possible, with consideration to health and condition, within the road reserve. Such trees are to be protected through perimeter 1.8 metre high temporary fencing during the construction of works.

Water points to be provided to verge planting areas at 50-100m centres dependent on ultimate street layout.

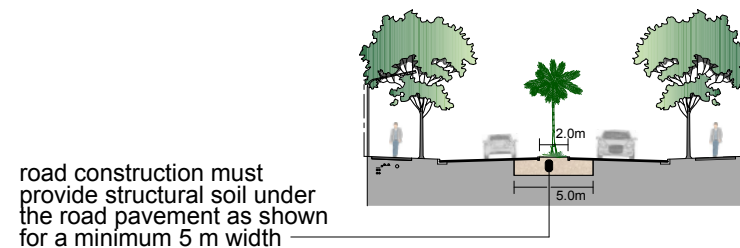
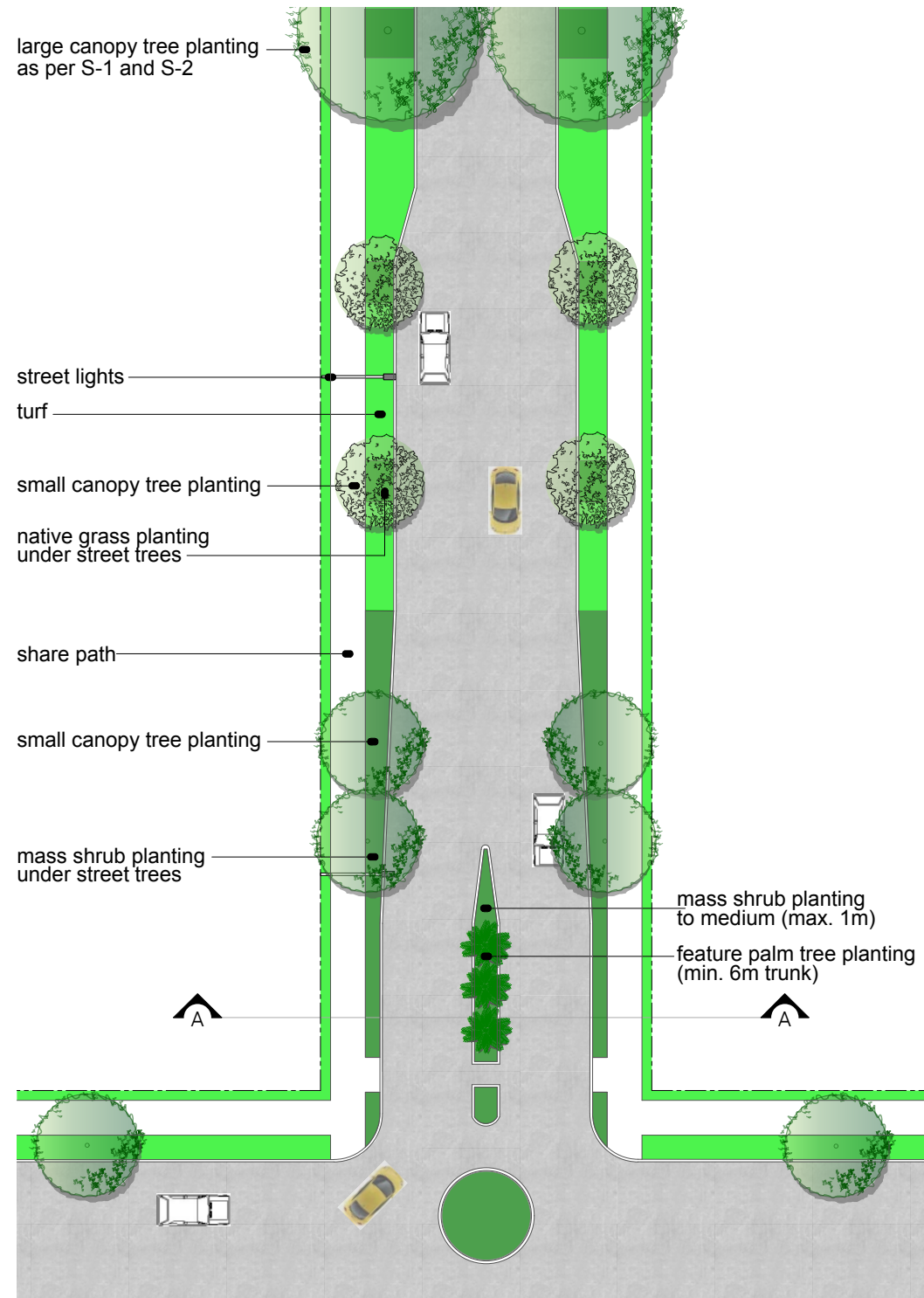
All pram or disabled access ramps to be in accordance with Austroad, DDA and Australian Standards.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

All trees planted in turf shall include timber edges with min. 2m x 2m hardwood edging and mulched pit

Generally all plant material is to be endemic to the area. Plant material not endemic to the area may be used to accent planting for nominated entries or features but kept to a design minimum.

Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



road construction must provide structural soil under the road pavement as shown for a minimum 5 m width

section A-A

Landscape Materials Schedule

S-5

SHARE PATH	2.1m wide min. concrete construction with broom surface finish to Australian Standards
TURF AREAS	<p>existing subgrade shall be excavated to loosen the ground conditions to 200mm depth</p> <p>retain all quality existing topsoil in place, subject to approval from Council</p> <p>poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council</p>
GARDEN AREAS	<p>existing subgrade shall be excavated to loosen the ground conditions to 400mm depth</p> <p>retain all quality existing topsoil in place, subject to approval from Council</p> <p>poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council</p> <p>garden bed areas shall be mulched with 100mm hardwood chip</p>
PLANTING	<p>all trees installed shall be certified as compliant to Natspec's Specifying Trees</p> <p>tree pits shall be a minimum of 700mm depth x 2.0m wide</p> <p>tree pits shall be a minimum of 700mm depth x 2.5m wide</p> <p>backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval</p> <p>all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix</p> <p>mulch shall consist of 75mm coarse hardwood chip mulch</p> <p>shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council</p> <p>shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council</p> <p>shall be planted for all Medium and Large Canopy Trees listed in 2.0 Plant Species, or as advised by Council</p>
tree pits 35 to 200 litre stock	
tree pits 400 litre stock	
soilmix and mulch	
pot sizes 35 - 75 litre stock	
tree pits 200 litre stock	
tree pits 400 litre stock	

REFER TO CURRENT WARRIEWOOD VALLEY ROADS MASTER PLAN FOR ROAD RESERVE AND CARRIAGEWAY WIDTHS

Guidelines

Principles

Street tree planting to be installed as per masterplan generally at 6-12m intervals dependant of the species characteristics, mature size and location.

Feature palms at the Sector Entry shall be Livistona australis and shall be a minimum clear trunk height of 6 metres tall.

All street trees at Sector Entry to be minimum 400 litre stock, with nominated tree species subject to final approval by Council.

All palms and street trees shall be subject to pre-order of plant material. All palms and trees to be grown by recognised nursery under natspec growing guidelines.

The feature palms within the median must be installed within a structural soil zone 5m in width requiring the road pavement to be designed to facilitate structural soil under the pavement as detailed.

Existing trees over 3 metres in height are to be retained where possible, with consideration to health and condition, within the road reserve. Such trees are to be protected through perimeter 1.8 metre high temporary fencing during the construction of works.

All kerb widenings to incorporate mass planted areas of suitable low height shrubs and groundcovers. Planting should be selected relative to sight lines required for specific locations.

Garden area planting to be at a high density (ie. 4 per m2 for shrubs and 9 per m2 for groundcovers) and generally include drought tolerant native species up to 1m in ultimate height. All shrub planting should be a minimum 5 litre pot size and groundcobers shall be 200mm pot size.

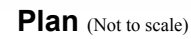
Water points to be provided to verge planting areas at 50-100m centres dependent on ultimate street layout.

All pram or disabled access ramps to be in accordance with Austroad, DDA and Australian Standards.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

All trees planted in turf shall include timber edges with min. 2m x 2m hardwood edging and mulched pit

Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



S-6

concrete construction with
broom surface finish to
Australian Standards

existing subgrade shall be excavated to loosen the ground conditions to 200mm depth

retain all quality existing topsoil
in place, subject to approval
from Council

poor existing soils shall be replaced with minimum 100mm depth imported soilmix as nominated, subject to approval from Council

existing subgrade shall be excavated to loosen the ground conditions to 400mm depth

retain all quality existing topsoil
in place, subject to approval
from Council

poor existing soils shall be replaced with minimum 400mm depth imported soilmix as nominated, subject to approval from Council

garden bed areas shall
be mulched with 100mm
hardwood chip

- tree pits
- 35 to 200 litre stock

tree pits shall be a minimum of
700mm depth x 2.0m wide

- tree pits
- 400 litre stock

tree pits shall be a minimum of
700mm depth x 2.5m wide

- soilmix and mulch

backfilling soilmix shall consist of approved existing site topsoil or replacement soilmix subject to Council approval

all tree pit backfilling shall consist of 100% sandy loam, followed by a 100mm depth toplayer of organic humus mix

mulch shall consist of 75mm coarse hardwood chip mulch

- pot sizes
- 35 - 75 litre stock

shall be planted only when existing services or road infrastructure limit tree pit soil volume, or as advised by Council

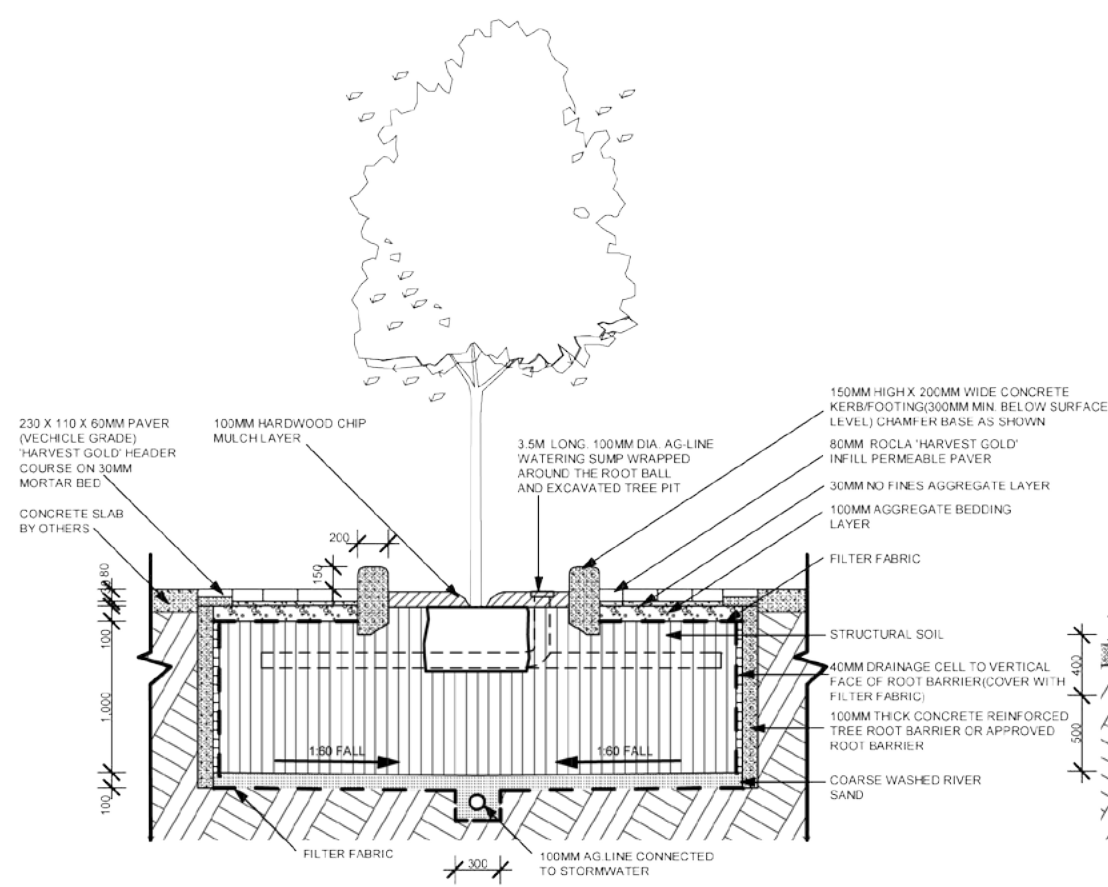
- tree pits
- 200 litre stock

shall be planted for all Small Canopy Trees listed in 2.0 Plant Species, or as advised by Council

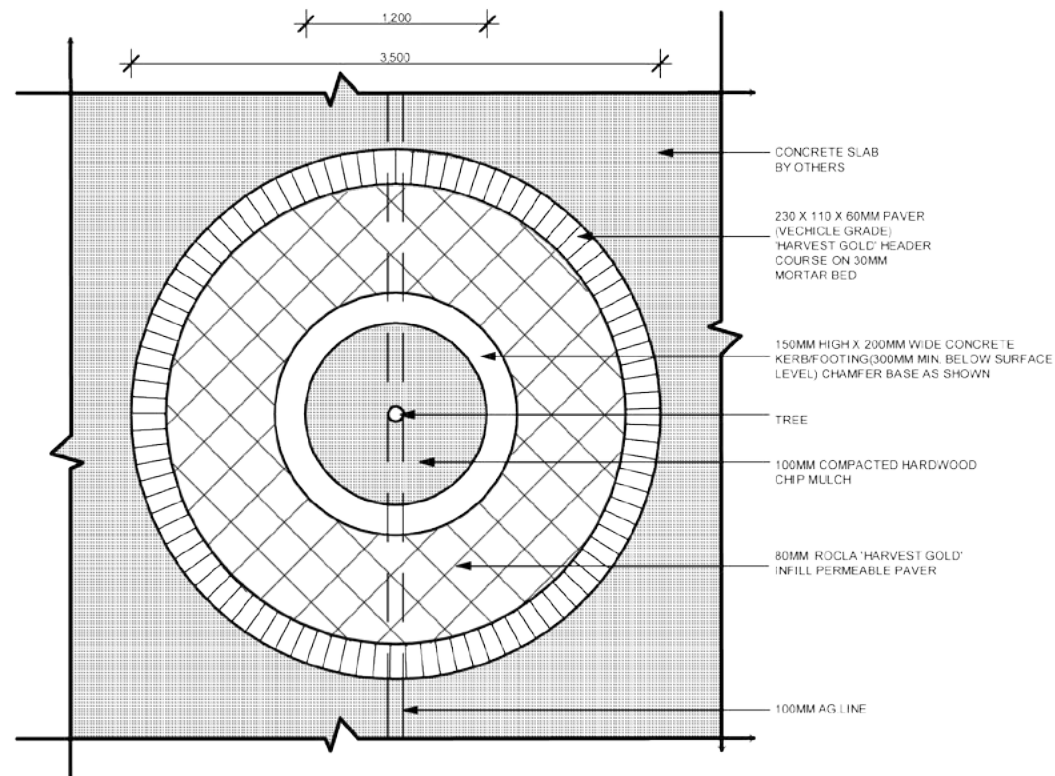
- tree pits
- 400 litre stock

shall be planted for all Medium and Large Canopy Trees listed in 2.0 Plant Species, or as advised by Council

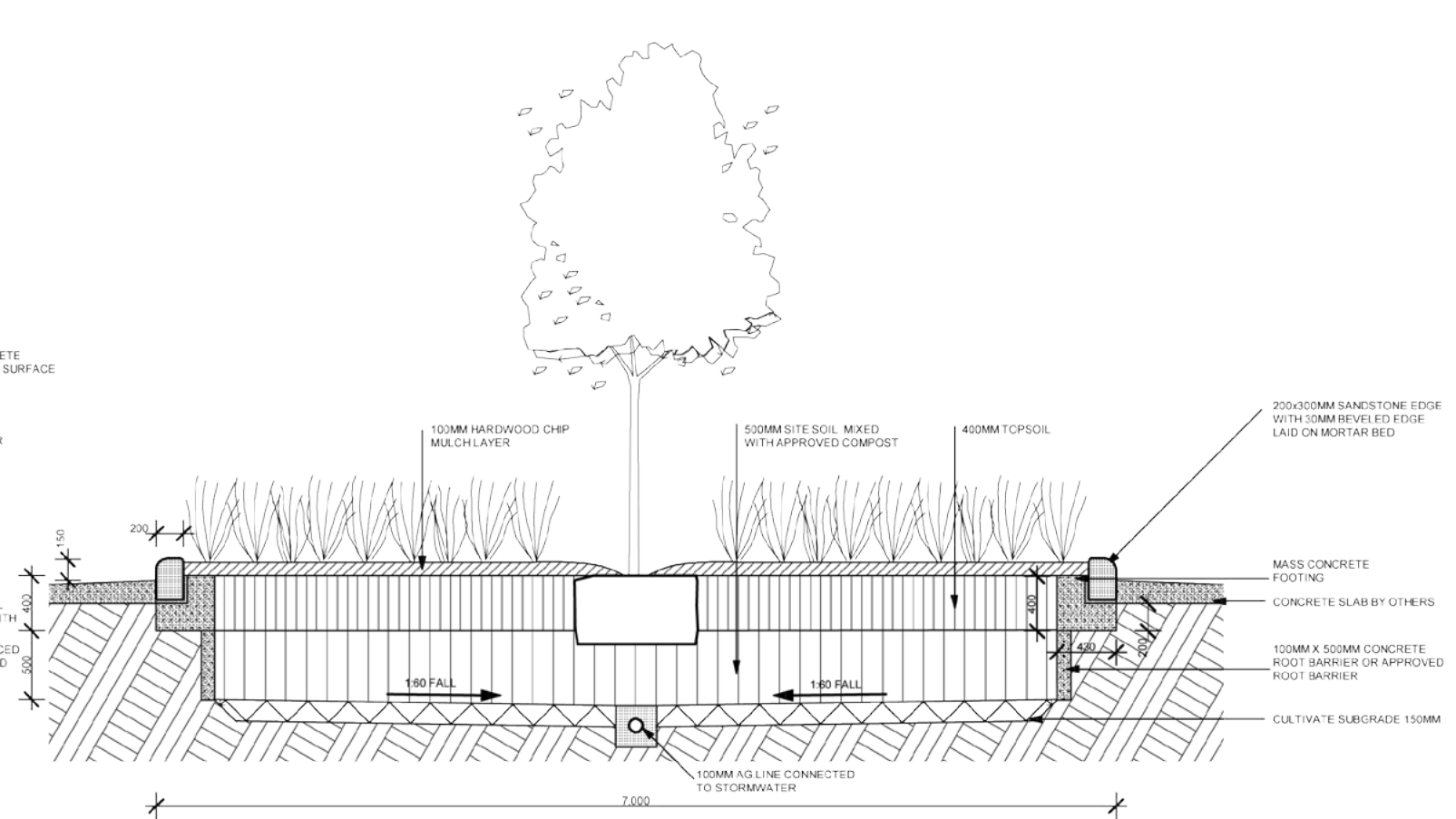
Street lighting poles must be conventional Energy Australia, i.e. either Decorative Style No.1 or Style No.2.



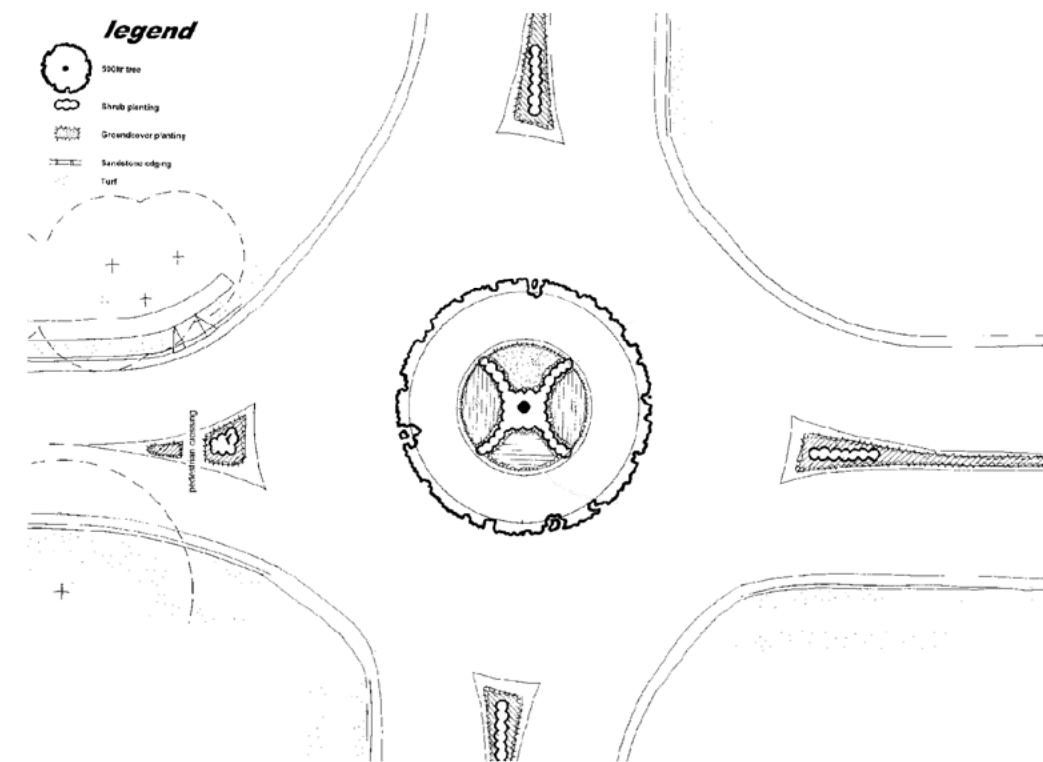
SECTION Scale 1:50



PLAN Scale 1:50
TYPICAL ROUNDABOUT Structural Soils



SECTION Scale 1:50



PLAN Not To Scale
TYPICAL ROUNDABOUT Non Structural Soils

Guidelines

Principles

Where traffic templates allow for softworks in the roundabout, construct according to the adjacent detail, 'Typical Roundabout – Non Structural Soils'. Note all dimensions are a minimum.

Where traffic templates don't allow for softworks, plant a tree in the centre of the roundabout using structural soils and permeable paving. Construct according to the adjacent detail, 'Typical Roundabout – Structural Soils'. Note all dimensions are a minimum.

All kerb widenings to incorporate mass planted areas (rather than turf) that is able to be hedged or easily manicured. Planting should be selected relative to sight lines required for specific locations.

Garden areas to include minimum 400mm cultivated soil (compost added) and mulched with 100mm hardwood chip. Planting to be at a high density (ie. 4 per m2) and generally include drought tolerant native species up to 1m n ultimate height. All shrub / groundcover planting to be minimum 5 litre size.

All proposed works must be liaised with utility authorities (via Dial Before You Dig) with utility location drawings kept on site at all times.

Generally all plant material is to be endemic to the area. Plant material not endemic to the area may be used to accent planting for nominated entries or features but kept to a design minimum.

Materials

PLANTS

Min pot size – Trees: 500 litre, Shrubs: 5 litre, Groundcovers: 2.5 litre.

SOILS

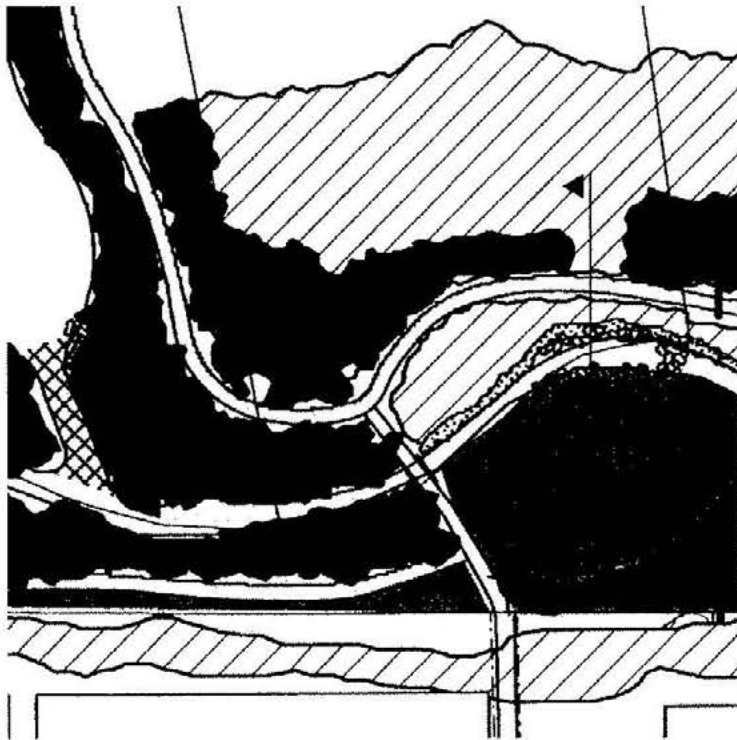
Topsoil – Orgaic Garden Mix.

Structural Soil – 40mm Structural Soil.

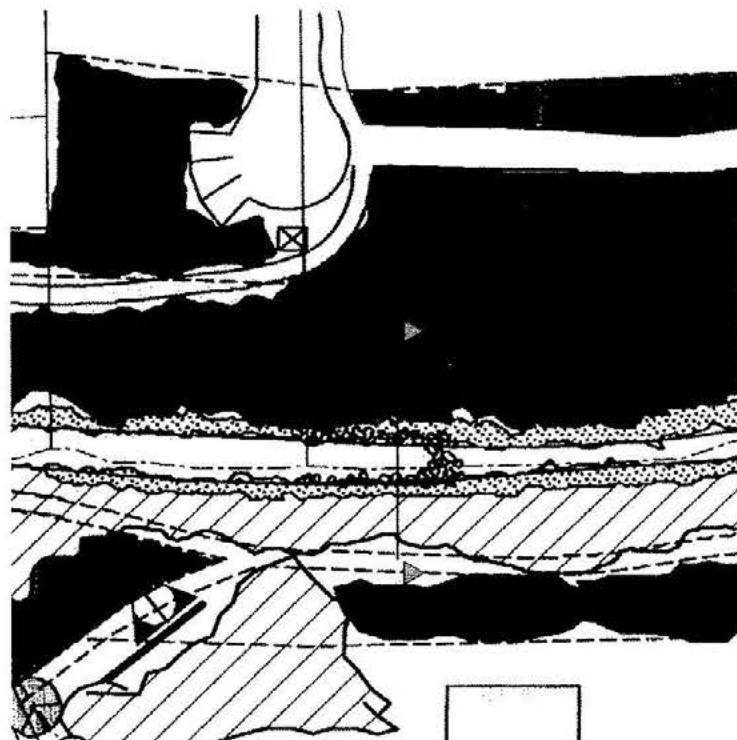
4.0

November 2016

Creekline Guidelines



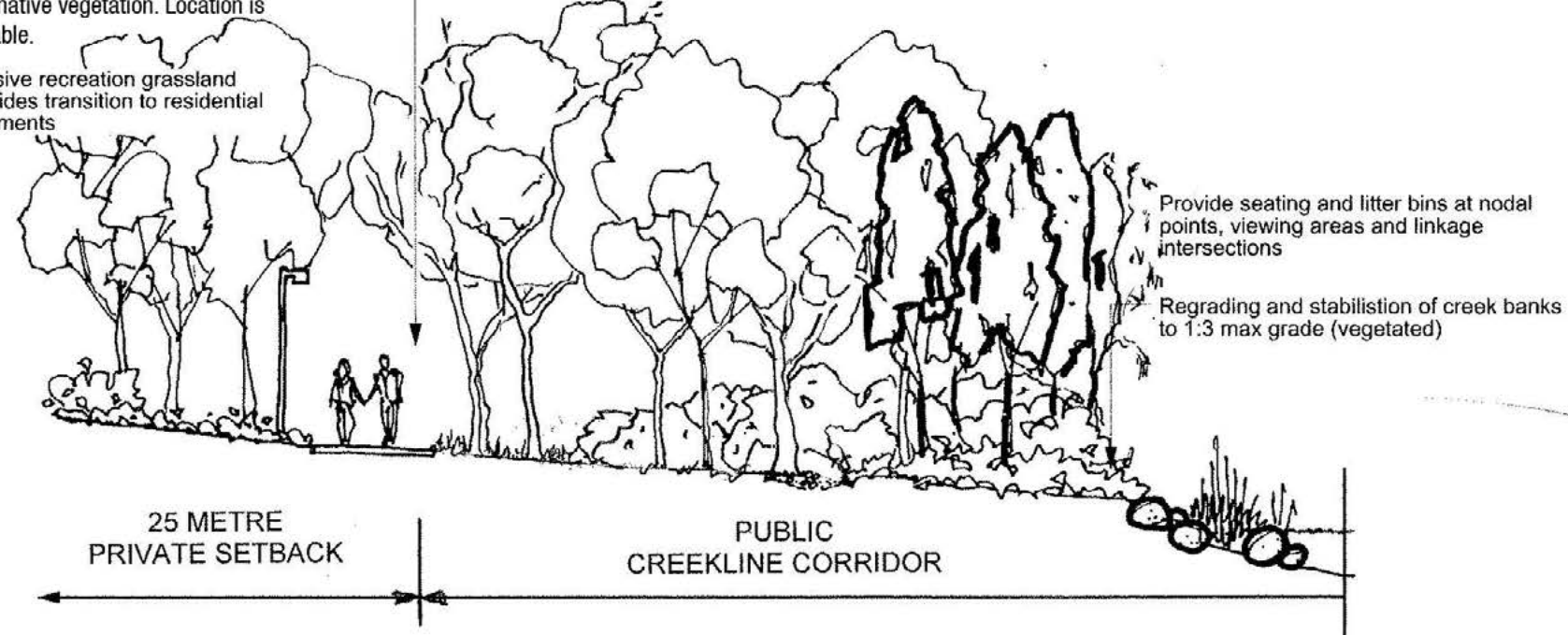
Plan: Vegetated corridor



Section: Multiuse corridor areas

Pedestrian/cycle path to form primary buffer between maintained grassland and native vegetation. Location is variable.

Passive recreation grassland provides transition to residential allotments



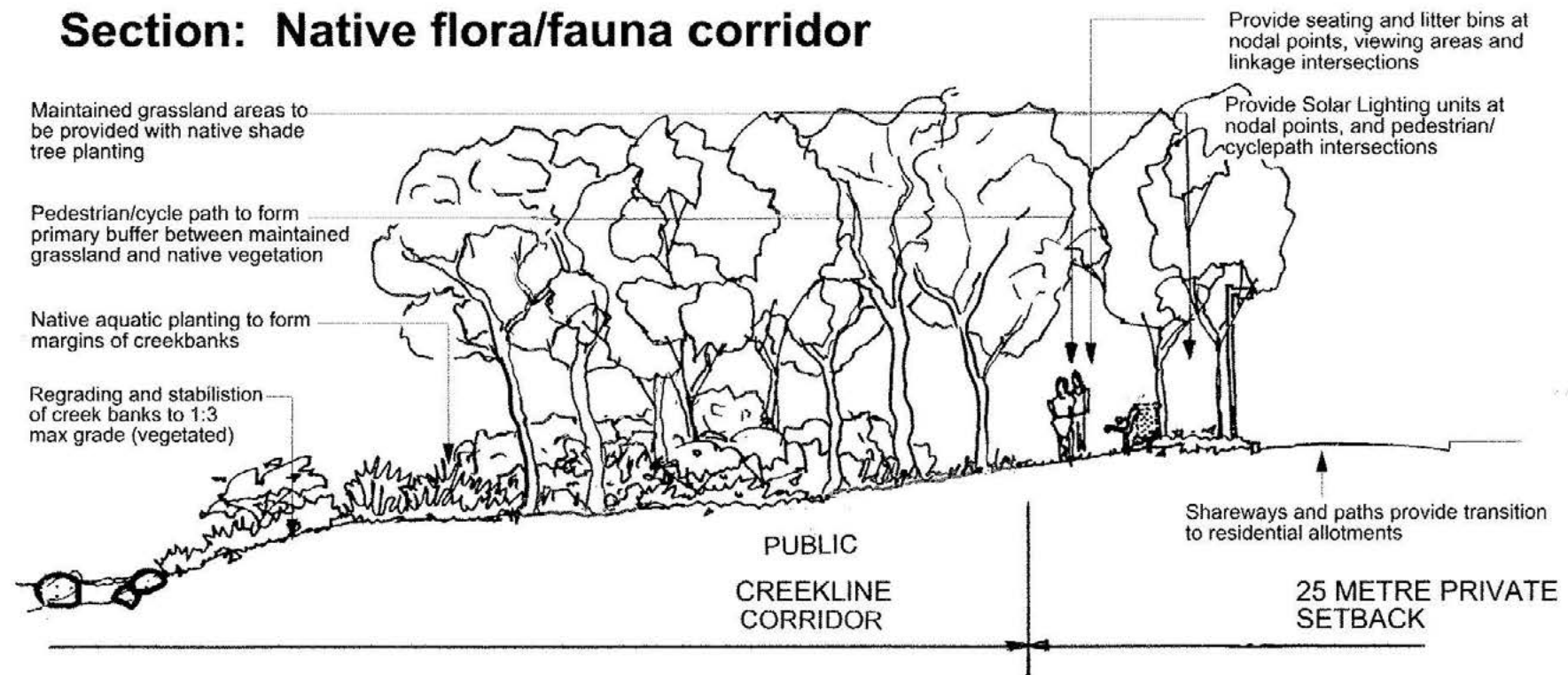
Section: Native flora/fauna corridor

Maintained grassland areas to be provided with native shade tree planting

Pedestrian/cycle path to form primary buffer between maintained grassland and native vegetation

Native aquatic planting to form margins of creekbanks

Regrading and stabilisation of creek banks to 1:3 max grade (vegetated)



Guidelines

Location:

The 50 metre creekline reservation of Narrabeen and Fern Creek.

Principles:

50 metre creekline reservation to be planned and implemented as multi-use open space corridors to incorporate:

Creekline rehabilitation/regrading and stabilisation of creek banks to 1:3 max grade (vegetated) and 1:6 max grade (at water access points, see C-2)

Rock armouring of waterline to reduce propensity for erosion. Weed removal and native revegetation

Recreational amenity; Pedestrian/cycle linkages to residential areas and for district access.

Integrate corridors with Neighbourhood Park areas where possible to consolidate open space area, share facilities (eg. Playgrounds)

Flora and Fauna Habitat; Provide for native vegetation or revegetation to a minimum of 40% of areas as interlinked vegetation corridor creekline reserve.

Locate pedestrian/cycle path to form edge between maintained grassland and native vegetation. Where alternate edge is required provide timber edge (150x50mm Band) with 1.5mtr width of Nepean River gravel margin as maintenance barrier.

Pedestrian/cycle paths to be located above the 20% AEP flood level for that specific location. It is preferred the pedestrian/cycle path acts as a transition between the Inner 25 metre Creekline Corridor and the Outer 25 metre Creekline Corridor. The location is variable to ensure connectivity with existing sections of the path and vegetation conservation.

Maintained grassland areas to be provided with native shade tree planting.

Provide widenings to creek waterbody where possible to slow water movement and provide additional environmental feature.

Maintain adequate sightlines to pedestrian/cycle path alignment to meet Austroads standards.

Provide seating and litter bins at nodal points, viewing areas and linkage intersections.

-Seats at litter bins at nominal 250 metre spacing

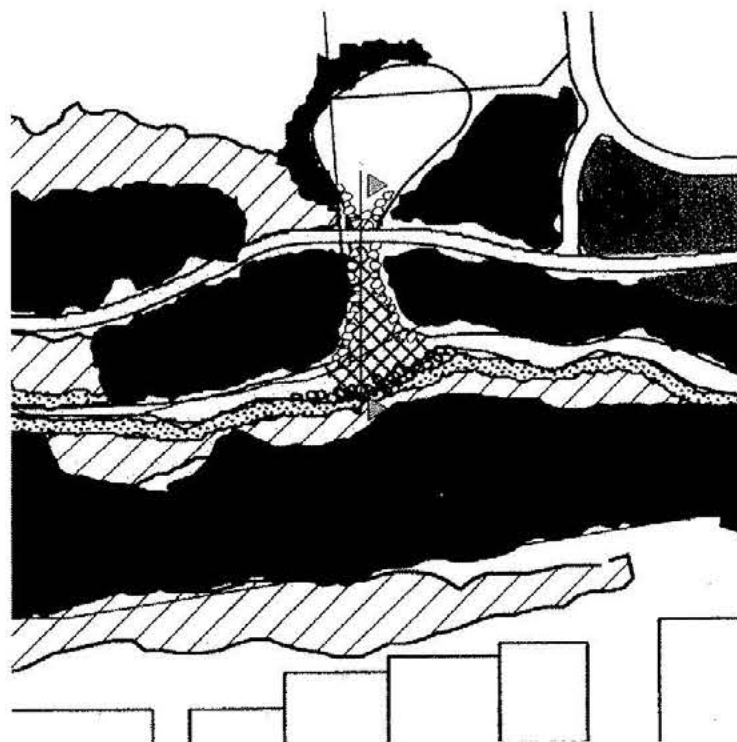
-Signs at nominal 100 metre spacings

-Solar lights at nominal 50 metre spacings

-Refer to Water Management Specification

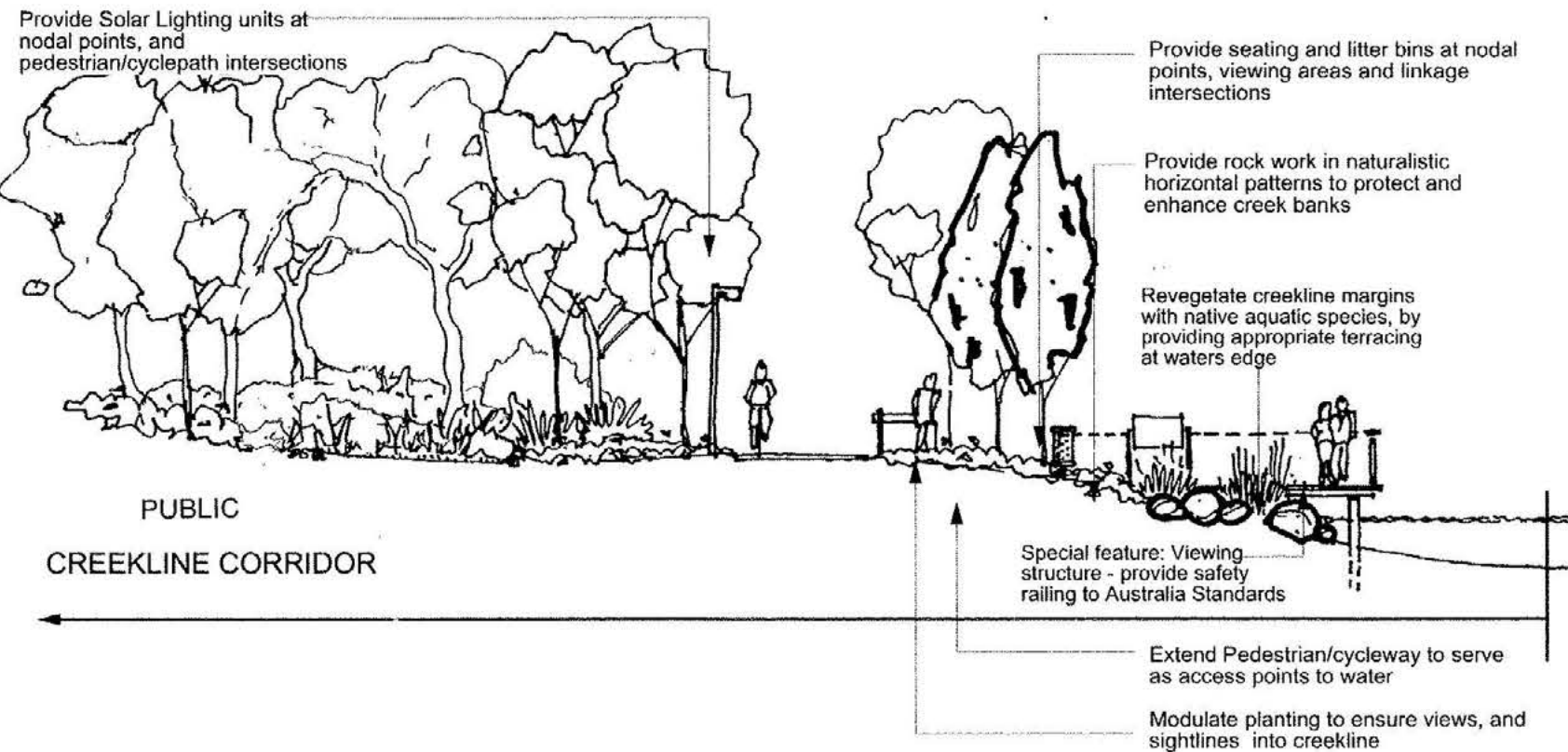


Plan: Accessible water

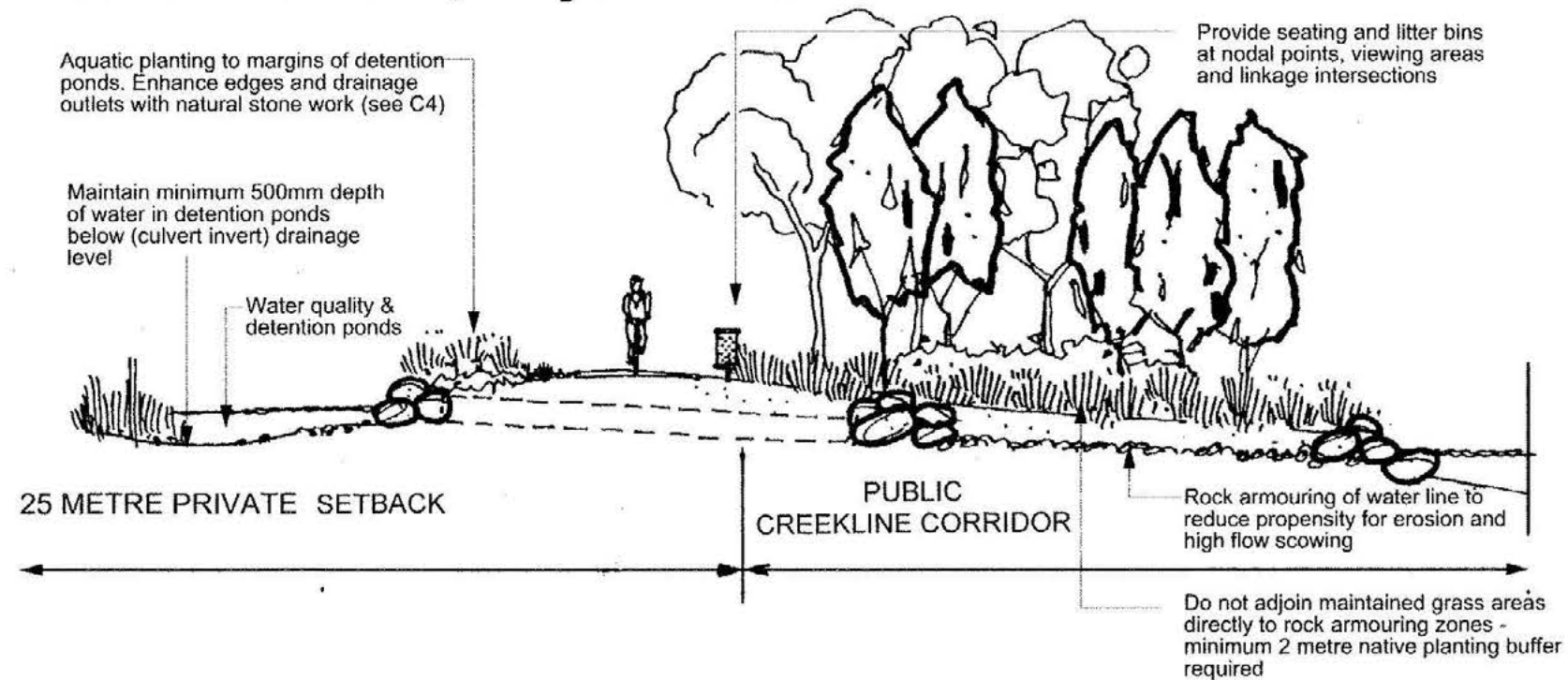


Plan: Water Management
bodies

Section: Water bodies and viewing area



Section: Water Quality Detention Ponds



Guidelines

Location:

Adjacent Water Quality Detention ponds, and at creek waterbody widenings

Principles:

Provide varied and safe access to creekline and waters edge at select locations.

Extend Pedestrian/cycleway to serve as access points to water.

Modulate planting to ensure views, and sightlines into creekline.

Revegetate creekline margins with native aquatic species. Provide

appropriate terracing at waters edge to provide viable planting depths, and where bank gradients require.

Provide rock work in naturalistic horizontal patterns protect and enhance creek banks.

Do not adjoin maintained grass areas directly to rock armouring zones - minimum 2 metre native planting buffer required.

Refer to DCP No.20 for recommended creekline species for vegetation precincts.

Maintain Pedestrian/cycle sightlines and security surveillance through alignment of path and planting design.

Pedestrian/cycle paths to be located above the 20% AEP flood level for that specific location. It is preferred the pedestrian/cycle path acts as a transition between the Inner 25 metre Creekline Corridor and the Outer 25 metre Creekline Corridor. The location is variable to ensure connectivity with existing sections of the path and vegetation conservation.

Provide seating and litter bins at nodal points, viewing areas and linkage intersections.

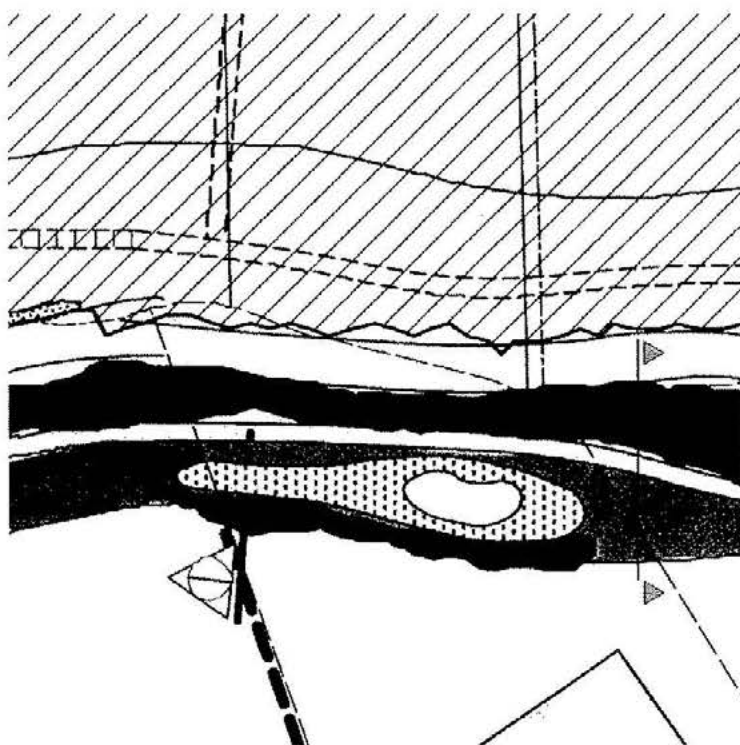
-Seats at litter bins at nominal 250 metre spacing

-Signs at nominal 100 metre spacings

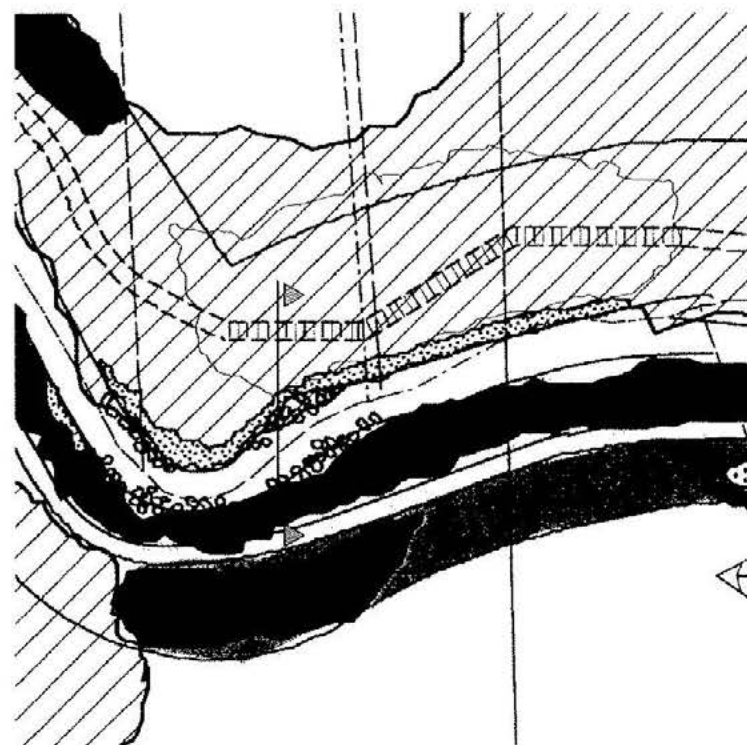
-Solar lights at nominal 50 metre spacings

Lights to conform with Category B2 for minor streets and cycleways.

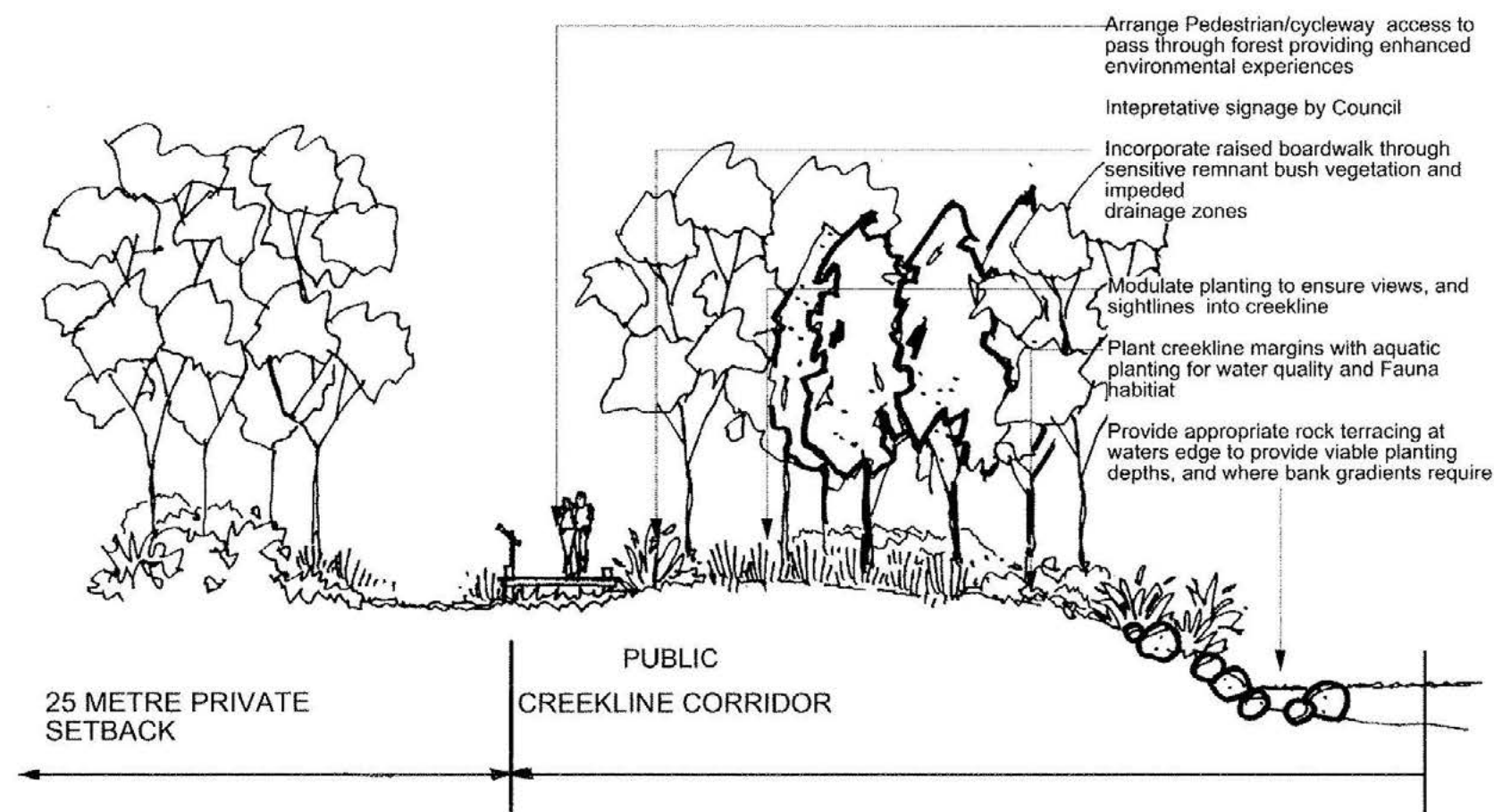
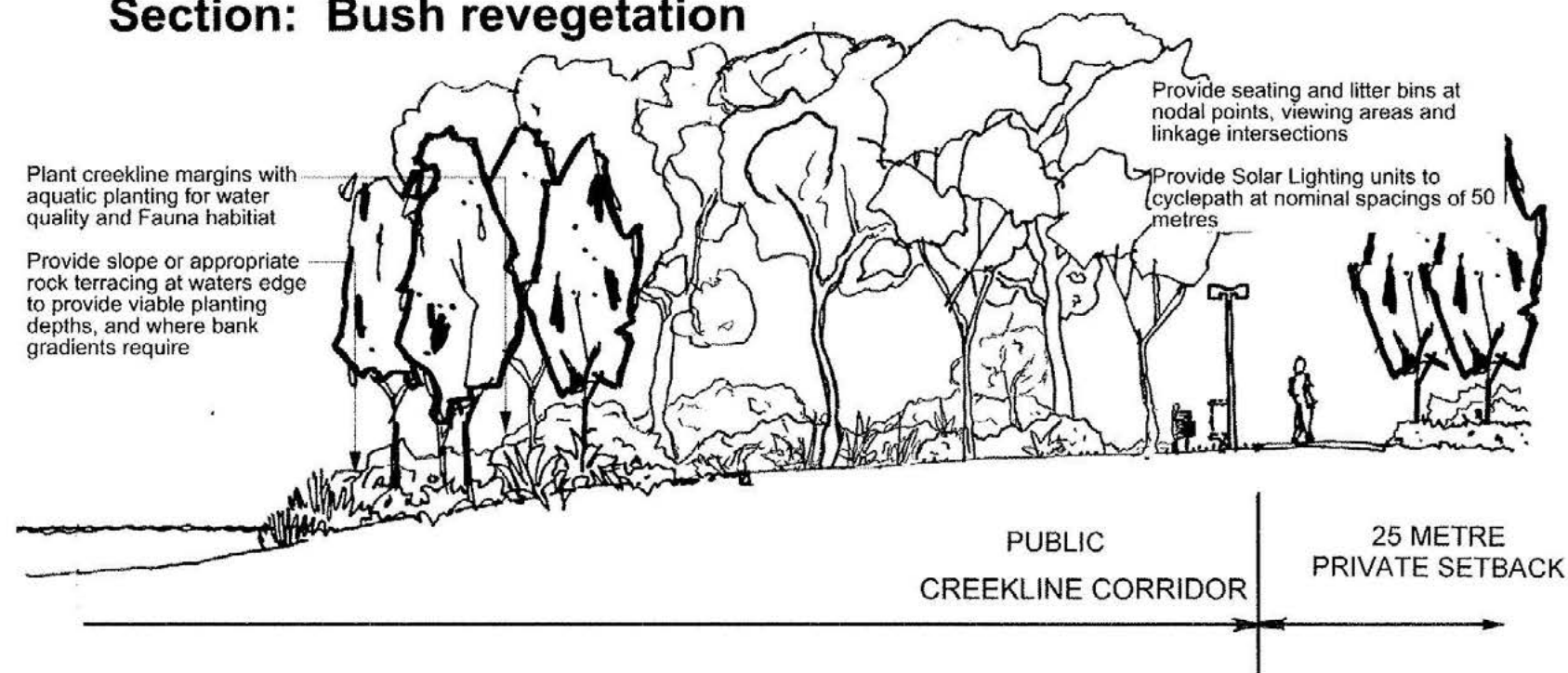
Plan: Remnant Bush



Plan: Bush revegetation



Section: Bush revegetation



Section: Remnant Bush

Guidelines

Location:

Adjacent remnant stands of native bush land vegetation, and revegetation zones along creekline reservations.

Principles:

Protect stands of Swamp Mahogany Forest to creekline margin.

Extend Pedestrian/cycleway to serve as access points to water. This may be in the form of boardwalks

Arrange Pedestrian/cycleway access to pass through forest providing enhanced environmental experiences.

Incorporate raised boardwalk through impeded drainage zones.

Extend Swamp Mahogany vegetation community through natural bushland revegetation techniques, to appropriate areas. Provide Bushland revegetation strategy.

Provide Environmental Impact Assessment of design proposals with Development Application (DA).

Plant creekline margins with aquatic planting for water quality and Fauna habitat. Provide appropriate terracing at waters edge for viable planting depths.

Provide appropriate rock terracing at waters edge to provide viable planting depths, and where bank gradients require.

Maintain Pedestrian/cycle sightlines and security surveillance through alignment of path and planting design. Modulate planting to ensure views, and sightlines into creekline.

Pedestrian/cycle paths to be located above the 20% AEP flood level for that specific location. It is preferred the pedestrian/cycle path acts as a transition between the Inner 25 metre Creekline Corridor and the Outer 25 metre Creekline Corridor. The location is variable to ensure connectivity with existing sections of the path and vegetation conservation.

Provide seating and litter bins at nodal points, viewing areas and linkage intersections

Outlet to be setback, from the waterway, a minimum of 13 multiplied by the diameter of the outlet pipe. e.g. 200mm pipe is setback 2.6 metres from the toe of the creek bed.

Create densely planted sedge area in front of outlet.

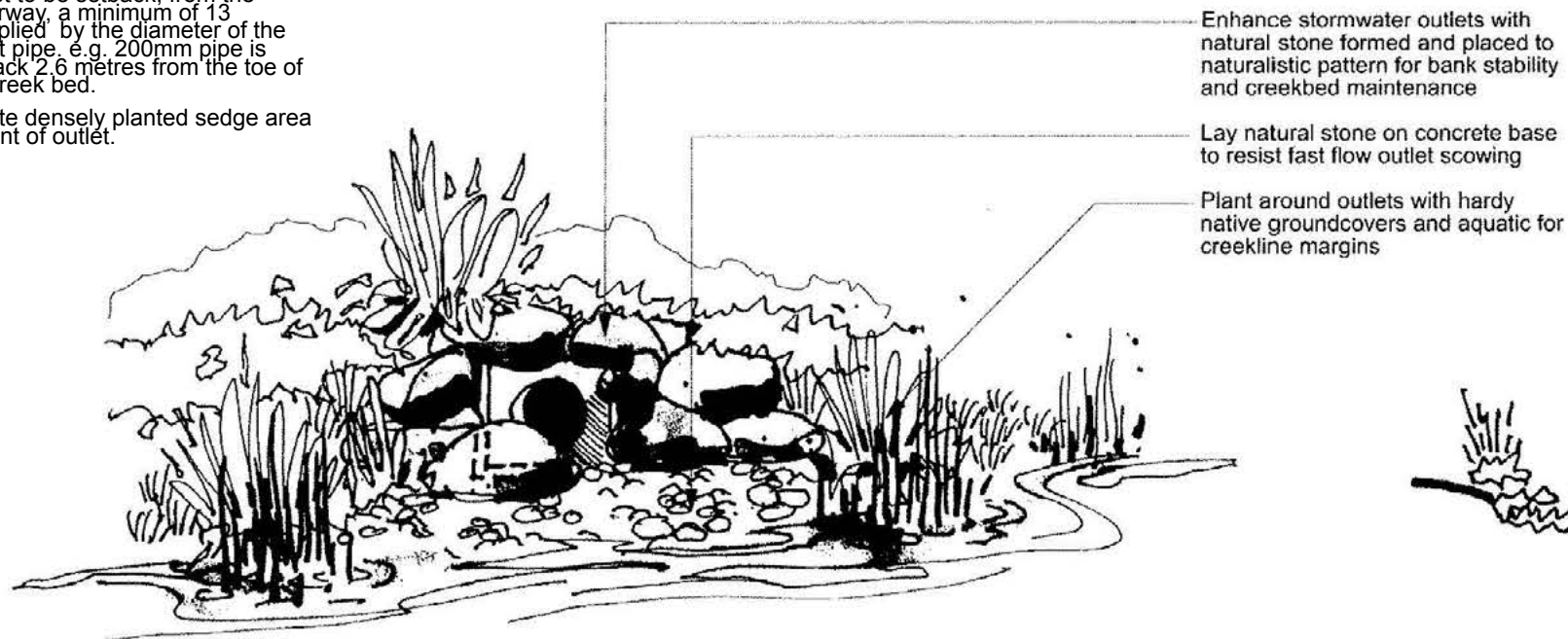
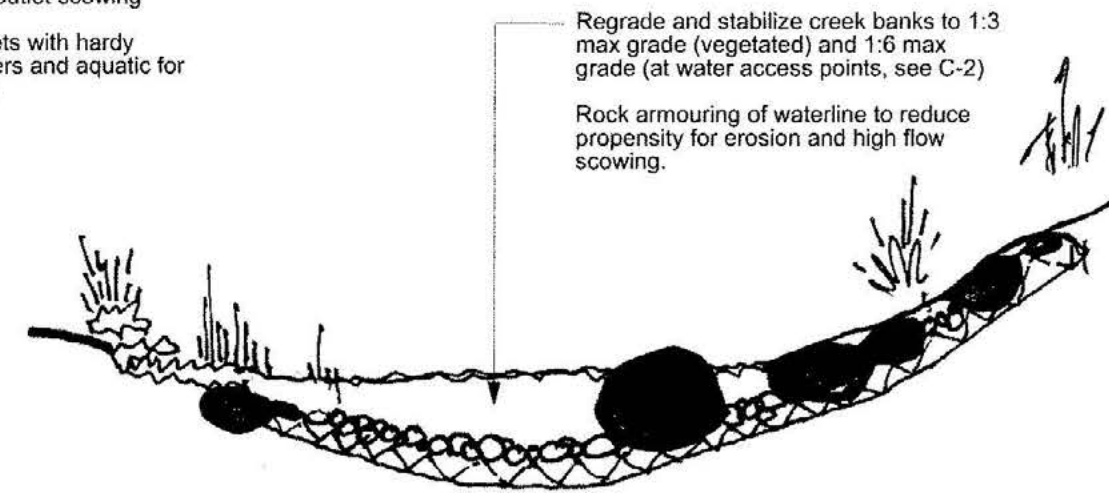


Illustration: Stormwater outlet



Section: Rock armouring

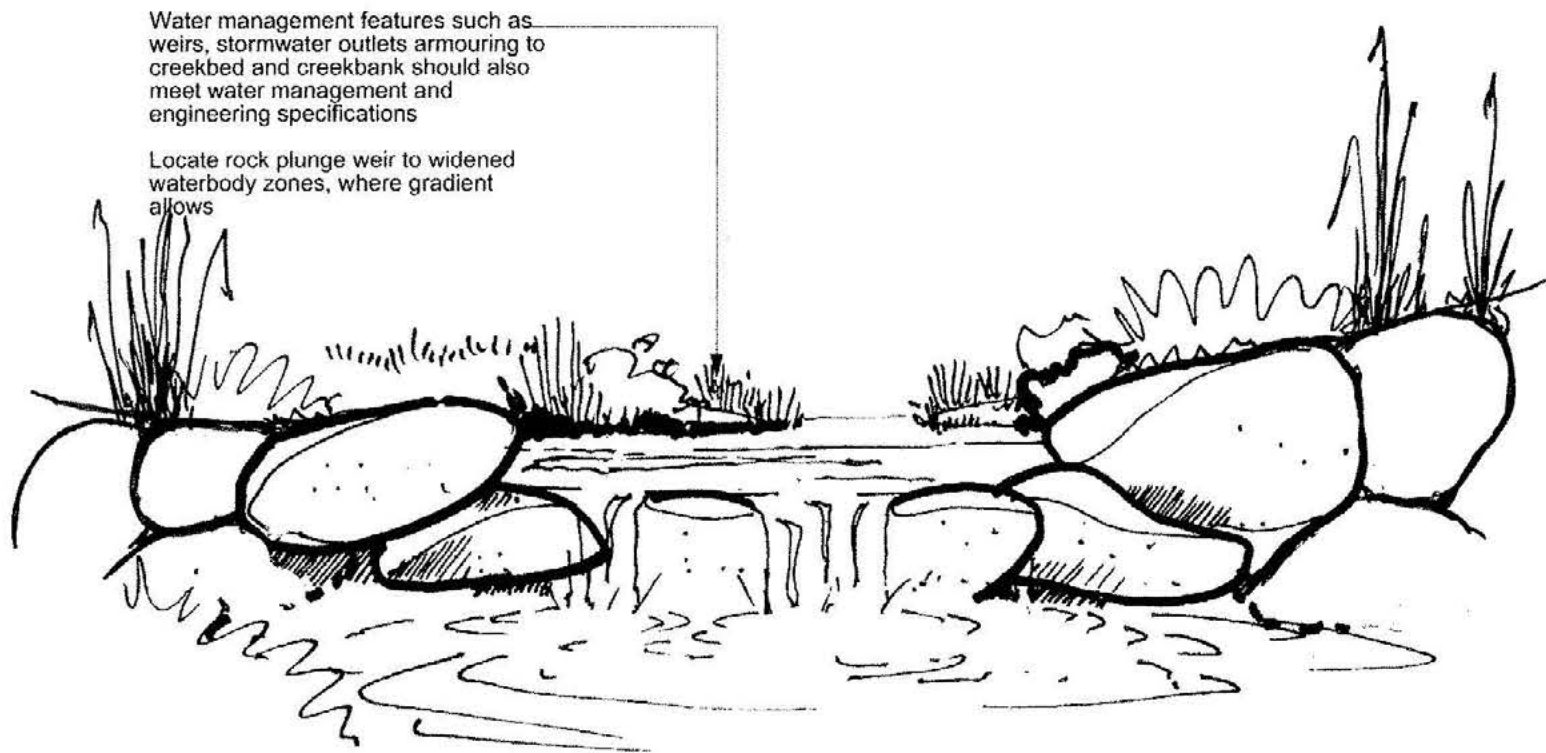


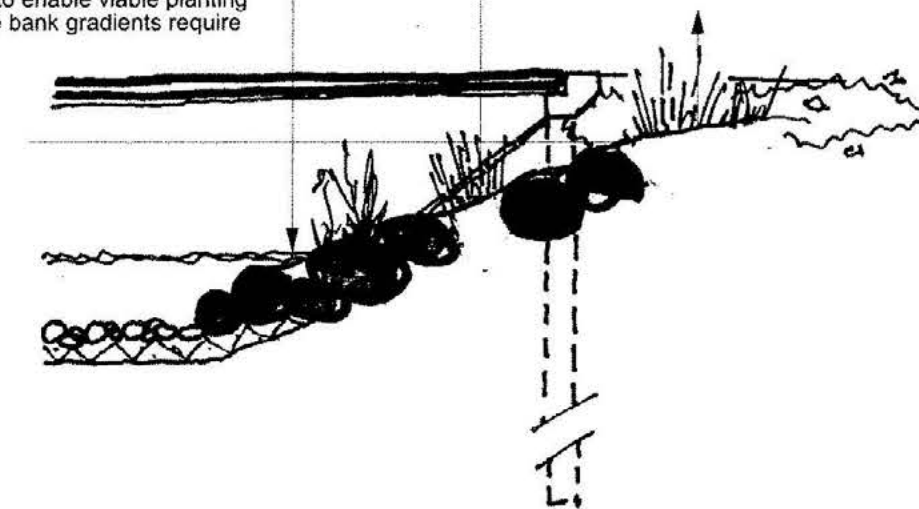
Illustration: Natural weir and rills

Regrade and stabilize creek banks to 1:3 max grade (vegetated) and 1:2 max grade (at bridge abutments) with suitable engineered stone or pavement pitching under bridge deck

Rock armouring of waterline to reduce propensity for erosion and high flow scowing.

Provide fauna access along creek bed under bridge structures.

Provide appropriate rock terracing at waters edge to enable viable planting depths where bank gradients require



Section: Bridge abutments

Guidelines

Location:

The 50 metre creekline reservation of Narrabeen and Fern Creek generally.

Adjacent Detention ponds, stormwater outlets and at creek waterbody widenings

Principles:

50 metre creekline reservation to be planned and implemented as multi-use open space corridors to incorporate water management

Features:

Locate rock plunge weir to widened waterbody zones, where gradient allows.

Rock work to be natural sandstone, placed and arranged in naturalistic patterns. Water management features such as weirs, stormwater outlets armouring to creekbed and creekbank should also meet water management and engineering specifications.

Incorporate raised boardwalk through impeded drainage zones.

Plant creekline margins with aquatic planting for water quality and Fauna habitat.

Provide appropriate rock terracing at waters edge to provide viable planting depths, and where bank gradients require.

Do not adjoin maintained grass areas directly to rock armouring zones - minimum 2 metre native planting buffer required.

Provide widenings to creek waterbody where possible to slow water movement and provide additional environmental feature.

Provide seating and litter bins at nodal points, viewing areas and linkage intersections.

-Seats at litter bins at nominal 250 metre spacing

-Signs at nominal 100 metre spacings

-Solar lights at nominal 50 metre spacings

Central Local Park and Active Sportfields



DISCLAIMER

NOTE:
The facilities and features on this plan are diagrammatic only and the actual location will be subject to regular reviews of the Section 94 Plan by Council, and will also be dependant on survey, site considerations and compliance with all relevant standards and requirements.

All internal Sector Road Layouts/ Landscaping/ Open Space (Apart from Sectors 1, 2, 10, 11 and 12) are indicative only and reflect submissions by the Developers at the time of preparation of this Plan.

Council does not endorse or otherwise the proposals by the Developer in each Sector

Guidelines

Typical Infrastructure:

- Earthworks (incl re-contouring, levelling & sub-grade preparation)
- Drainage (incl sub-soil drainage)
- Water Service/Irrigation (bayonet fittings)
- Sealed Carpark (50 spaces incl kerb/edging, surfacing & planting bays)
- Access/Pathways
- Lighting (Solar [10])
- Turfing (incl topsoiling & laying turf)
- Landscaping (incl topsoil, tree/shrub planting, mulching, staking & edging)
- Fencing (painted timber post & rail/log barriers)
- Signage & Furniture (incl bench seats & litter bins)



Guidelines

Concept plan for southern component of park was adopted by Council in March 2016. Final design of southern component of park to be developed in consultation with community.

Typical Infrastructure:

- Earthworks (incl re-contouring, levelling & sub-grade preparation)
- Structural Work (eg retaining walls)
- Drainage (incl sub-soil drainage)
- Water Service/Irrigation (bayonet fittings)
- Sealed Carpark (incl kerb/edging, surfacing & planting bays)
- Access: Pathways/Bikepaths
- Lighting
- Turfing (incl topsoiling & laying turf)
- Landscaping (incl topsoil, tree/shrub planting, mulching, staking & edging)
- Fencing (painted timber post & rail/log barriers)
- Shelter (including electric BBQs/tables and seating)
- Signage & Furniture (incl bench seats, picnic tables & litter bins)
- Shade Structure (over playground)

