



Tasmanian Infrastructure Design Guidelines

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Tasmanian Infrastructure Design Guidelines

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1. Purpose

These infrastructure design guidelines replace the 2013 Tasmanian Subdivision Guidelines taking into account modern practice ranging from minimum standards to preferred. The guidelines relate largely to civil infrastructure within the public realm, which are typically transferred to councils following subdivision. However, the guidelines may be applied to any infrastructure on public land, including parcels owned by the state government (e.g. State roads) or Crown Land. Development on Crown Land or State Land may need to apply additional requirements (e.g. Department of State Growth standards). The design of private infrastructure must also comply with the National Construction Code and the building and plumbing regulations.

It is intended that this guide be used by developers, construction contractors, design/supervising engineers as well as Council officers and senior management to inform the design process. The guide is not intended to replace the need for expert guidance such as designers or engineering specialists that are typically required to prepare documentation for approval. It should however help to provide a common basis of understanding to inform discussions throughout the design process.

The guidelines have been prepared with reference to commonly used guidelines and standards, in particular:

- Tasmanian Standard Drawings by the Local Government Association of Tasmania (LGAT)
- Department of State Growth specifications, codes of practice and guidelines
- Austroads guides and specifications.

To complement these, interstate guidelines have been reviewed to help fill in gaps in the current standards and to identify preferred approaches. The intent is that the guidelines assist both developers and council staff (development engineers and planners) to achieve improved quality and consistency of designs and fulfil both functional and amenity expectations of the community.

The guidelines in themselves are not compulsory, but councils (or other authorities) may select specific guidelines as advice or as permit conditions to give statutory effect for a given development or they may be called up by other legislation. Councils may also make requirements mandatory by passing by-laws or may include them within council policies. While there may be justification for regional variations, these guidelines are intended to be generally applied in a uniform basis statewide. The guidelines typically assume new development or extension of existing development. It may not be practical to apply the guidelines for redevelopment of existing infrastructure. Applicable requirements for modification of existing development should be considered on a case-by-case basis. In this case the guidelines are expected to be applied unless the developer can demonstrate that an alternative is required and will be fit for purpose to the satisfaction of council.

The guidelines are not meant to be exhaustive but have sought to address key priorities identified by council development and planning staff. They relate largely to technical requirements of infrastructure, noting that the State Planning Office is pursuing subdivision guidelines to address broader expectations from an urban planning perspective including liveability and urban greening.

1.1 How to use these guidelines

For most assets, guidelines have been provided both for minimum standards and preferred approach. Typically, minimum standards are based on the LGAT Tasmanian Standard Drawings, noting that some councils have departures from these standard drawings.

Preferred guidance has been provided based on Tasmanian and interstate recommendations that exceed minimum requirements in the Australian Standards, Tasmanian Planning Scheme, Tasmanian Standard Drawings or other relevant standards. The relevant council may have different, potentially more onerous, requirements so following the minimum requirements or even preferred guidance does not guarantee compliance. Some councils may choose to apply the preferred guidance as a minimum requirement unless otherwise approved by the General Manager/CEO or delegated authority. Similarly, other councils may not desire ‘preferred’ standards to be applied, if they are not consistent or practical in the local context or if the maintenance costs are considered excessive. Discussions with council (and other referral agencies) are important to understand specific requirements for each development, depending on its scale, type, and profile within the local context

The standards and specifications listed for each asset may not be entirely consistent. For example, Austroads Technical Specifications such as the depth of concrete for footpaths exceed the requirements in the Tasmanian Standard Drawings. Generally, it is expected that councils will adopt the municipal standard drawings by default but may call up other standards or additional complementary specifications for design details that are not covered by the standard drawings. Care should be taken to clarify any inconsistencies between specifications, e.g. by the precedence of documents in tender documents.

IPWEA are considering whether to adopt the AUS-SPEC specifications in preference to the Tasmanian Municipal Standard Specifications that are now outdated, especially where they call up superseded Department of State Growth (DSG) specifications. AUS-SPEC standards are provided as templates that will need to be edited to call up relevant local requirements. DSG specifications are only required for state roads, unless they are otherwise required by council.

In addition to the guidelines, checklists are provided in the Appendices for planning, design approval and practical completion for assets to be transferred to councils (e.g. via subdivisions) and also for development on lots including building and plumbing requirements.

2. Lot layout/functional layout plan

2.1 Preferred

Prior to completing detailed engineering drawings developers are encouraged to prepare a concept plan for early engagement with council. In the case of subdivisions this shall include consideration of (as relevant):

- Hierarchy of roads
- Ingress and egress from the subdivision (connectivity to existing road infrastructure)
- Road reserve widths
- Pavement widths, considering provision for on street parking (e.g. one or both sides)
- Road safety
- Public transport routes
- Active transport e.g. footpaths and cycleways, including connectivity to existing networks
- Flood prone land and overland flow corridors
- Bushfire management
- Lot layout
- Service corridors (particularly stormwater, sewerage)
- Lot orientation, considering solar access
- Terrain contours
- Significant infrastructure requirements
- Public open space and landscaping
- Existing vegetation to be protected and preserved.

The following should be taken into account:

- Stormwater and sewerage are particularly important considerations during early planning since they typically rely on gravity drainage, so may require easements over proposed lots rather than following road easements
- Development on steep terrain may require some typical cross sections with concepts for lot access (considering maximum grades for driveways in the Municipal Standard Drawings), location and ownership of retaining walls (where required), batter slopes, cut and fill areas and depths, and consideration of accessibility for wheelchairs, prams and active transport including cycling.
- Significant infrastructure examples include pump stations and substation kiosks which require special considerations to integrate into the lot layout without impacting on the street character or amenity of neighbouring land use

Preferred shall also consider:

- Urban greening (including public open space and street trees)
- Lot diversity (variety of lot sizes for different housing types)
- Limiting the total number of lots fronting cul-de-sacs and the length of cul-de-sacs
- Pedestrian links from lots to public transport routes, open space and services.

Guidance on these (and other recommended design approaches) are provided in Appendix B.3 of the *Improving residential standards in Tasmania - Recommendations report (2024)*. Note that these recommendations may be mandated through changes to the Tasmanian Planning Scheme in future.

Considering early feedback from council planners and development engineers can avoid expensive redesign and associated delays. Alignment with the requirements of the acceptable solutions of the Tasmanian Planning Scheme where possible will increase the likelihood of approval, with less reliance on specialist reports.

Depending on the location and nature of the proposal, the developer may need to liaise with relevant authorities such as:

- Aboriginal Heritage Tasmania for Aboriginal heritage matters
- Heritage Tasmania for properties on the State Heritage Register
- Tasmanian Fire Service – for properties in Bushfire Hazard Zones.

The concept design shall consider specialist site investigations such as:

- Geotechnical investigations (e.g. rock, groundwater, landslip risk, sodic soils, potential acid sulphate soils)
- Coastal inundation/erosion or landslip hazard assessment
- Hydrology (flood levels for 1% AEP¹ event)
- Bushfire management plan (fuel reduction zones, access for fire trucks etc.)
- Heritage (preservation of Aboriginal or historic heritage).

It is recommended that developers liaise with council staff regarding the proposed response to the recommendations of specialist reports prior to detailed design to ensure that it properly responds to any risks identified.

2.2 Minimum requirements

The minimum requirements for lot layout/functional layout plans are provided under the Tasmanian Planning Scheme subdivision development standards for the relevant planning zone/Particular Purpose Zone/Specific Area Plan.

¹ Annual Exceedance Probability i.e. the probability of a rainfall or flood event being equalled or exceeded within a year. 1% AEP is equivalent to a 1 in 100 year event, noting that such events can occur more than once every 100 years.

3. Road design

3.1 Preferred road design

Prior to designing roads, planning should consider the needs of all users including motorised vehicles (such as passenger vehicles, freight, public transport, emergency services), active transport modes such as cycling and pedestrians and the broader community. Considerations should include:

- Demand management
- Estimating trip generation data
- Traffic modelling
- Parking requirements
- Safety considerations including interaction of different transport modes.

Preferred road design shall ensure that the road reserve contains sufficient space for all users and elements that are required including:

- Traffic lanes
- Parking
- Street furniture
- Footpaths
- Services (including power, lighting, communications, water, sewerage, and stormwater)
- Batters
- Landscaping.

The road reserve width may need to be wider than council minimum requirements to accommodate the following:

- High traffic volumes
- Embankment batter slopes on steep land
- Street trees or other landscaping features
- Water Sensitive Urban Design features (e.g. swales)
- Significant infrastructure (e.g. pump stations or substation kiosks)
- Movements of all road users including cyclists and buses.

Note: wider roads may lead to increased speed. Pedestrian safety and amenity as well as road safety should be considered when selecting road widths.

3.1.1 References

For planning road design, the following documents provide useful guidance:

- Traffic Impact Assessment Guidelines, Department of State Growth (2020)
- *Guide to Transport Impact Assessment – Technical guidance for transport practitioners*, Transport for NSW (2024).²
- Tasmanian Cycling Infrastructure Design Guide³

Other relevant references are provided further on in Section 3.

3.2 Minimum requirements for road design

As a minimum the road design shall be in accordance with the recommendations of the Traffic Impact Assessment and in accordance with the DSG Traffic Impact Assessment guidelines.

3.2.1 Tasmanian Standard Drawings

The Tasmanian Standard Drawings (TSD)⁴ R01-R36 apply for road design including footpaths, driveways, traffic calming, street furniture, stairways etc. Note that some councils have departures to the TSD which are provided at the back of the drawing set or on the relevant council's website.

For infrastructure that is not covered by the TSD set, (e.g. bus shelters, road safety barriers) the State Roads standard drawings provided by Department of State Growth see Section 3.2.4.

3.2.2 Austroads Guide to Road Design

Road design shall generally be in accordance with the Austroads Guide to Road Design including:

- Part 1: Objectives of Road Design
- Part 3: Geometric Design
- Part 4: Intersections and Crossings
- Part 4A: Unsignalised and Signalised Intersections
- Part 4B: Roundabouts
- Part 4C: Interchanges

²Located at: <https://standards.transport.nsw.gov.au/> (See s7.4 for Access and road network for subdivisions).

³Located at: https://www.infrastructure.tas.gov.au/_data/assets/pdf_file/0006/534768/Tasmanian_Cycling_Infrastructure_Design_Guide.pdf

⁴ Located at: <https://www.lgat.tas.gov.au/lgat-advocacy/engineering-local-government-standards-and-guidelines>

- Part 5: Drainage – General Hydrology Considerations
- Part 5A: Drainage – Road Surface, Networks, Basins and Subsurface
- Part 5B: Drainage – Open Channels, Culvers and Floodway Crossings
- Part 6: Roadside Design, Safety and Barriers
- Part 6B: Roadside Environment.

Design departures from Austroads guides may require justification and council approval.

3.2.3 Reference Specifications

- AUS-SPEC 0041 – Geometric sealed road design
- AUS-SPEC 0052 – Geometric rural road design unsealed
- AUS-SPEC 1141 - Flexible pavement base and subbase
- AUS-SPEC 1143 – Sprayed bituminous surfacing
- AUS-SPEC 1144 – Asphalt roadways
- AUS-SPEC 1145 – Segmental paving
- AUS-SPEC 1147 – Sprayed preservation surfacing
- AUS-SPEC 1193 – Guideposts
- AUS-SPEC 1194 – Non Rigid road safety barrier systems
- AUS-SPEC 1195 – Rigid road safety barrier systems.

3.2.4 State Roads

Technical Standards and Specifications

State roads shall be designed in accordance with the technical standards and specifications published by Department of State Growth (DSG).

Traffic Impact Assessment

All Traffic Impact Assessments should be undertaken in accordance with the following guidelines:

- Traffic Impact Assessment Guidelines, DSG, August 2020

Design Guidelines

DSG has also published the '[T Series' State Growth Technical Specifications](#). The most relevant reference is the *T3 Road design Guidelines & Standards Interim Update* (September 2020).

Codes of Practice

DSG provide various codes of practice that apply for construction of state roads. DSG has also adopted the *VicRoads Codes of Practice State Growth Supplement (Pavements and Surfacing)* June 2017.

Standard Drawings

DSG also provide various standard drawings including:

- Bus stops
- Drains
- Culverts
- Road Safety Barriers
- Kerbs
- Drainage Pits
- Traffic signals
- Fences.

These are located at:

- https://www.transport.tas.gov.au/roadworks/contractor_and_industry_information/standard_drawings

Traffic Signals

Any works involving proposed, modification to existing or, any other impact to traffic signals and intelligent transport systems (such as electronic signs) require collaboration, review and approval with State Growth. This applies to both State and local roads where signal infrastructure is proposed or present.

Further information can be found at:

https://www.transport.tas.gov.au/roadworks/contractor_and_industry_information/traffic_signalisation

3.3 Pavement design

3.3.1 Preferred

Pavements are recommended to be designed in accordance with:

- *Austrroads Guide to Pavement Technology.*

3.3.2 Minimum requirements

Pavement Depths

- TSD R02 provides minimum pavement depths for two coat spray seal for rural roads.
- TSD R06 provides minimum pavement depths for asphalt and two coat spray seal applications for urban roads

Structural design

The structural design of the road pavement is to be certified by a suitably qualified engineer, having taken into account an appropriate geotechnical investigation of the sub-grade and expected traffic loads. The geotechnical report shall:

- Be certified by an appropriately qualified engineer
- Show the location of the test results
- Include a minimum of three tests with a maximum spacing of 80m
- Provide CBR results
- Provide Atterberg limits
- Meet any additional requirements that may be included in the Planning Permit.

The structural design shall:

- Be supported by pavement design calculations for council approval (where required)
- Have a minimum pavement thickness not less than that specified in the Tasmanian Standard Drawings (except in the case of rigid road pavements).

3.3.3 Wearing course

The wearing course design shall comply with the following:

- Urban roads – asphalt of a compacted thickness as specified in the Tasmanian Standard Drawings
- Rural roads – one of the following to council's satisfaction:
 - The standard for urban roads
 - An application of primer followed by one application of bituminous binder and one application of aggregate⁵
 - Primer with one application of bituminous binder and one application of aggregate followed by a further application of bituminous binder covered by smaller sized aggregate.

Note: council may accept an alternative material in the pavement or wearing course provided it is not of a lesser standard than specified in Section 3.3.2 or 3.3.3 above.

3.3.4 Recycled pavements and materials

The municipal standard drawings do not consider recycled pavements. DSG specification section 407 provides guidance for reclaimed asphalt pavement (RAP) under 407.09. Guidance for the reuse of various materials as crushed rock or aggregate is provided in DSG Specification

⁵ Primer may not be required for construction under traffic (winter seal) however a reseal is required within 12 months.

801. This includes the use of crushed concrete or crushed glass in subbase and base material for roads up to specified percentages consistent with Section 812 (crushed rock for pavement base and subbase) and Section 815 (Cementitious Treated Crushed Rock for Pavement Subbase).

3.3.5 Relevant standards and specifications

Standards

- AS 1141 Methods of sampling and testing aggregates
- AS 1289 Methods of testing soil for engineering purposes
- AS 1348.1 Road and Traffic Engineering – glossary of terms
- TSD R01 Rural Roads unsealed
- TSD R02 Rural roads sealed
- TSD R06 Urban roads typical section and pavement widths.

Specifications

- AUS-SPEC 1141 - Flexible pavement base and subbase
- DSG specifications (various).

Note that DSG has adopted specifications that are consistent with those applied by Department of Transport and Planning in Victoria. Councils have not necessarily adopted all DSG specifications, such as the comprehensive testing requirements of Specification 304 – *Unbound Flexible Pavement Construction*. Noting that the Tasmanian Municipal Standard specifications reference the superseded DSG specifications, IPWEA (Tas) has recommended that councils instead consider AUS-SPEC. The AUS-SPEC specification is likely to require modifications to suit the local context, such as available asphalt grades. Alternatively, councils may choose to apply:

- The current DSG Specification 173 *Examination and Testing of Materials and Work (Roadworks)* for testing methods, with:
 - Less onerous testing and surface level tolerances than DSG Specification 304 (e.g. selected parts of Specification 304 only, or as specified in AUS-SPEC 1141⁶) and
 - Alternative specifications for asphalt aggregate and binder (e.g. Code of Practice RC500.01 as referenced by DSG Specification Section 407 *Dense Graded Asphalt*).

⁶ AUS-SPEC 1141 includes compaction (dry density) tests, whereas DSG specification 304 also includes tolerances for surface levels compared to design and other requirements.

3.4 Geometric design

3.4.1 Council roads - Minimum requirements

Geometric design for roads shall generally be in accordance with the Austroads *Guide to Road Design part 3 - Geometric Design* (2021). Relevant design vehicles shall be selected based on the current/expected road usage.

Additional considerations, include:

- The ability for people with disabilities and active transport users to safely cross streets
- The ability for passengers to access and egress from parked vehicles
- Location for waste and recycling collection including the ability for trucks to negotiate steep or narrow side streets
- Accessibility for fire trucks in accordance with the requirements of the Tasmanian Fire Service (including minimum requirements for roads per the Bushfire-Prone Areas Code C13.0 in the Tasmanian Planning Scheme for relevant areas).

3.4.2 Council road – Preferred widths

Council road widths for different road hierarchy classifications are determined by the anticipated traffic volumes and other requirements (e.g. on-street parking or street trees). The road reservation width may also be determined by other functional requirements (e.g. priority pedestrian or cycling routes).

Urban

Table 1: Council urban roads – preferred widths (full carriageway to front of kerb)⁷

Road type	Road length/ number of tenements	Preferred Road Width	Preferred Reservation Width	Preferred footpath requirements
Arterial	Any length	14.3m	25.0m	3.0m one side, 1.8m other side
Sub-arterial	Any length	11.0m	24.0m	3.0m one side, 1.8m other side
Collector	Any length	11.0m	22.0m	3.0m one side, 1.8m other side

⁷ From Clarence City Council – Local Highways Standard Requirements By-Law no.1 of 2025. The Draft By-Law does not specify alternative requirements to rural, commercial or industrial roads to those stated in the Municipal Standard Drawings.

Road type	Road length/ number of tenements	Preferred Road Width	Preferred Reservation Width	Preferred footpath requirements
Local (through road)	Any length	8.9m	20.0m	1.8m both sides
Local (Cul-de-sac)	Length >150m	8.9m	20.0m	1.8m both sides
Local (Cul-de-sac)	Length ≤150m	6.9m	17.0m	1.8m one side only

Note that the *Improving Residential Standards in Tasmania –Report* (2024) recommends 1.8m wide shared pedestrian and cycling paths on both sides of the street in 400m walking distance of public open space, high frequency transit corridors, and business zones.

Temporary cul-de-sacs should be designed to accommodate the manoeuvring of service vehicles including garbage trucks.

Industrial Roads

Industrial roads are recommended to adopt the following:

Table 2: Council Industrial roads – preferred widths⁸

Road type	Minimum Road Width	Minimum Reservation Width
Industrial collector	14.3m	24.0m
Industrial local road	10.0m	20.0m

Cul-de-sacs are not recommended in industrial estates. However, if unavoidable, the following recommendations apply for design prime movers and semi-trailers:

Table 3: Council Industrial cul-de sacs – preferred diameters⁹

Road type	Minimum diameter	Minimum reservation diameter
Local (cul-de-sac)	24.0m	32.0m

⁸ From Clarence City Council – Local Highways Standard Requirements By-Law no.1 of 2025.

⁹ From Clarence City Council – Local Highways Standard Requirements By-Law no.1 of 2025

3.4.3 Council roads – Minimum width requirements

Urban

Table 4: Council urban roads minimum requirements¹⁰

Road type	Road length/ number of tenements	Minimum Road Width	Minimum Reservation Width	Minimum footpath requirements
Arterial	Any length	14.3m	25.0m	1.5m both sides
Sub-arterial	Any length	11.0m	20.0m	1.5m both sides
Collector	Any length	11.0m	20.0m	1.5m both sides
Local (through road)	Any length	8.9m	18.0m	1.5m one side only
Local (Cul-de-sac)	Length >150m	8.9m	18.0m	1.5m one side only
Local (Cul-de-sac)	Length ≤150m	6.9m ¹	15.0m ²	1.5m one side only

1. Roads in Bushfire prone areas require a minimum carriageway width of 7m for a cul-de-sac >200m long per the Tasmanian Planning Scheme, Code C13.0, Table C13.1. Additional requirements apply including vertical clearance.
2. Cul de sacs in bushfire prone areas require a minimum turning radius of 12.0m per the Tasmanian Planning Scheme, Code C13.0, Table C13.1.

The following intermediate road widths are not permitted:

- Between 6.9m and 8.9m
- Between 8.9 and 11.0m.

Note: reduced minimum road widths may be acceptable as part of traffic calming strategies.

One-way streets may have reduced road widths, subject to council approval.

Commercial and Industrial

Table 5: Council commercial and industrial area minimum road requirements¹¹

Road type	Lot size	Minimum Road Width	Minimum Reservation Width
Local (through road or cul-de-sac)	<10,000 m ²	11.0m	18.0m
Local (through road or cul-de-sac)	≥10,000 m ²	10.0m	18.0m

¹⁰ From TSD R06

¹¹ From TSD R06

Turning circles in cul-de-sacs shall be suitable for the design vehicle. See Table 12.

Tees, wyes and off set turning heads are not preferred (due to the risk associated with reversing vehicles) but if allowed by council shall be consistent with TSD R07.

Rural

Table 6: Council rural roads minimum requirements¹²

Road type	AADT	Traffic Width (existing)	Traffic Width (new)	Increased width for bends with <60m sight line ¹	Sealed Shoulder Width	Gravel Shoulder width	Verge Width	Carriage Width ³
S1	<30	4.0m (single)	-	1.0m	-	0.5m	NA	5.0m ⁵
S2	30-100	4.0m (single)	-	1.0m	-	1.0m	NA	6.0m ⁵
S3	100-300	5.5m (dual)	5.5m (dual)	0.5m	0.4m ²	0.5m	0.5m	6.5m ^{4,5}
S4	300-2000	6.0m (dual)	6.0m (dual)	0.5m	0.4m ²	0.5m	0.5m	7.0m ³
S5	> 2000	7.0m (dual)	7.0m (dual)	0.5m	0.5m	0.5m	0.5m	9.0m

1. Subject to consideration of the speed environment
2. 0.4m sealed shoulder required if edge line is to be installed.
3. Minimum carriageway width excludes increased width for bends with <60m sight line
4. Excludes additional sealed shoulder width (if required)
5. Roads in Bushfire prone areas require a minimum carriageway width of 7m for a through road per the Tasmanian Planning Scheme, Code C13.0, Table 13.1. Additional requirements apply including vertical clearance.

Classification of rural roads is based on the usage including AADT (per Table 6), and any other triggers (logging route, heavy vehicles and bus route) per

Table 7.

Table 7: Council Rural Road classification¹³

¹² From TSD R02

¹³ From TSD R02 v3

Road type	Logging Route	Heavy Vehicles	Bus Route
S1	No	<5%	No
S2	Yes <5%	<5%	Yes
S3	Yes	<10%	Yes
S4	Yes	>10%	Yes
S5	Yes	>10%	Yes

3.4.4 Department of State Growth road – Minimum width requirements

The following minimum requirements for State Highways are taken from the *T3 Road design Guidelines & Standards Interim Update* from Department of State Growth (September 2020). The minimum pavement requirements do not allow for on-street parking. DSG do not provide minimum requirements for footpaths or road reservations.

Rural Roads

Table 8: State Growth Minimum Requirements for Rural Roads

Road type	AADT (vpd)	Minimum Road Width	Lane width	Shoulder width	Median width
1 – Trunk Roads	≥12,000	20.1m (2+2 divided)	3.5m	2.0m	2.1m
	<12,000	16.6m (2+1 divided)	3.5m	2.0m	2.1m
2 -Regional Freight Roads	≥3,000	10.0 (single undivided)	3.5m	1.5m	None
	<3,000	9.0m (single undivided)	3.5m	1.0m	None
3 – Regional Access Roads	≥5,000	9.0m (single undivided)	3.5m	1.0m	None
	<5,000	8.2m (single undivided)	3.1m	1.0m	None
4 – Feeder Roads and 5 – Other Roads	All	7.2m	3.1m	0.5m	None
4 – Feeder Roads and 5 – Other Roads	All	6.2m ¹	3.1m	None	None

1. Roads in Bushfire prone areas require a minimum carriageway width of 7m for a through road per the Tasmanian Planning Scheme, Code C13.0, Table 13.1. Additional requirements apply including vertical clearance.

Urban Roads

Table 9: State Growth Minimum Requirements for Urban Roads

Road type	AADT (vpd)	Minimum Road Width	Lane width	Shoulder width	Median width
1 – Trunk Roads	All	Varies	3.5m	2.5m	Site specific
2 -Regional Freight Roads	All	Varies	3.5m	Site specific ¹	None
3 – Regional Access Roads	All	Varies	3.5m	Site specific ¹	None
4 – Feeder Roads and 5 – Other Roads	All	Varies	3.0m	Site specific ¹	None

1. Shoulder widths depend on roadside usage, parking, cycle lanes etc.

The DSG Design Standards provide various notes which may modify the minimum requirements. For example, the shoulder width may be reduced if kerb and channel are included or increased if there is a high volume of cyclists.

3.4.5 Longitudinal gradients

Preferred

All roads shall ensure that the longitudinal grade is minimised where possible, and be consistent with the road design speed, with reference to Table 8.3 of AGRD03. Minimum grades of 0.5% are recommended.

Minimum requirements

High longitudinal grades may be difficult to avoid in steep topography. In such cases the design shall seek to achieve the following where possible:

- <17% for a maximum of 200m (or up to 20% for less than 70m with GM/CEO approval)
- <10% for roads heavily used by buses and heavy vehicles.

The longitudinal grade at intersections shall ensure that the Safe Intersection Sight Distance per TSD – RF01-v3 (Guide to intersection and domestic access sight distance requirements) is achieved.

Consideration should be given to the grade of new roads, particularly near intersections with existing transport corridors. Braking on steep slopes may be compromised impacting on road safety (e.g. after rainfall or frosty mornings).

3.4.6 Cross falls

Road cross fall requirements are as follows:

- Consistent with Tasmanian Standard Drawings except where required to suit super-elevations and transitions (see Table 10 and Table 11)
- Turning heads are generally to be within the 3% to 5% range.

Rural Roads

Table 10: Minimum cross fall requirements for rural roads

Parameter	Minimum Requirement	Reference
Unsealed road cross fall	4.0-6.0%	TSD R01
Unsealed shoulder cross fall	10%	TSD R01
Sealed road cross fall	3.0-5.0%	TSD R02
Sealed shoulder cross fall	5%	TSD R02
Verges for sealed roads cross fall	10%	TSD R02

Urban Roads

Table 11: Minimum cross fall requirements for urban roads

Parameter	Minimum Requirement	Reference
Sealed road cross fall	3.0-5.0%	TSD R02

3.4.7 Curves and Intersections

Preferred

All roads should ideally allow a minimum 10m radius turning circle for fire trucks to navigate without requiring use of driveways or need to reverse.

Minimum requirements

All roads must allow for safe turning for a single passenger vehicle (5.2m). Intersections require greater provisions per Table 12.

Where domestic waste collection is provided, all roads must provide for a Standard Service Vehicle (8.8m) per Austroads *AP-G34 Design Vehicles and Turning Path Templates* (2023). Curves are to be designed so that a design service vehicle can completely negotiate each curve without encroaching onto the kerb and gutter, or into an oncoming lane without reversing.

Relevant design vehicles for residential and industrial areas for navigating intersections and cul-de-sacs are as follows:

Table 12: Design vehicles for intersections¹⁴

Intersecting road types	Design vehicle and turning radius
Arterial/Arterial	Prime mover and semi-trailer (19m), Radius 15m
Arterial/Collector	Single Unit Truck / Bus (12.5m) Radius 12.5m
Collector/Collector (residential)	Single Unit Truck / Bus (12.5m) Radius 12.5m
Collector/Collector (industrial)	Prime mover and semi-trailer (19m), Radius 15m
Local/Local (residential through road or cul-de-sac)	Service vehicle (8.8m) Radius 9m ¹
Local/Local (industrial through road or cul-de-sac)	Prime mover and semi-trailer (21m), Radius 12.5m

1. Cul-de-sacs for local roads in bushfire prone areas require an outer radius of 12m per the Tasmanian Planning Scheme Code C13.0, Table 13.1. Additional requirements including vertical clearances also apply.

Alternative design vehicles may be required depending on the road use, e.g. local roads may need to be designed to accommodate buses if they are on a designated route. Also, larger bus sizes may need to be considered on busy bus routes.

The intersections of local roads shall have a minimum kerb radii of 5m unless otherwise approved.

3.4.8 Relevant standards and specifications

- *AP-G34 Design Vehicles and Turning Path Templates*, Austroads 2023
- *Guide to Road Design part 3 - Geometric Design*, Austroads 2021.
- TSD R01 Rural Roads unsealed
- TSD R02 Rural roads sealed
- TSD R06 Urban roads typical section and pavement widths
- TSD R07 Urban roads cul-de-sac turning heads
- *T3 Road design Guidelines & Standards Interim Update*, Department of State Growth (September 2020).

¹⁴ Adapted from AP-G34 *Design Vehicles and Turning Path Templates* Table 2.3

3.5 Parking

3.5.1 On-street parking

Minimum requirements

On street parallel parking shall conform with the following minimum dimensions (unless otherwise compliant with AS2890 and permitted by Council):

- Single (car) space: 6.5m x 2.5m
- Combined spaces for two cars: 13.0m x 2.5m.

Additional width may be required as a safety buffer, depending on the road speed, in accordance with AS 2890.5.

Relevant standards

- AP-G34 *Design Vehicles and Turning Path Templates*, Austroads 2023
- AS 2890.5:2020 *On-street parking*.

3.5.2 Off-street parking

Minimum requirements

Minimum requirements for off-street parking (including number and size) are stipulated in the Tasmanian Planning Scheme Code C2.0 Parking and Sustainable Transport Code. This includes requirements for bicycle and motorcycle parking for some development types.

On-street parking shall be at least 300mm clear of obstacles over 150mm high behind the kerb per AS2890.1.

Requirements for the number of accessible car parking spaces are specified in part D3 of the National Construction Code 2016.

Relevant standards

- AS2890.1:2004 – *Parking facilities, Part 1: Off-street car parking*
- AS2890.2:2002 – *Parking facilities, Part 2: Off-street commercial vehicle facilities*
- AS2890.3:2015 – *Parking facilities, Part 3: Bicycle parking*
- AS2890.6:2009 – *Parking facilities, Part 6: Off-street parking for people with disabilities*.

3.6 Footpaths, Cycleways and Shared Paths

3.6.1 Preferred

The implementation of footpaths, cycleways and/or shared paths should consider the opportunity to stimulate activity and wellbeing for the community, and to enable access for all levels of ability including safety for wheelchairs, prams etc. Consideration of the relevant council/s cycling plans and strategy and connectivity with existing paths is important to ensure functionality of the broader network.

Location

Footpaths may be located immediately adjacent to the kerb at the same level, or set back at a different level, with a nature strip in between depending on council requirements. Where possible, the following shall be avoided (depending on the footpath location):

- Footpaths adjacent to the kerb
 - Bins blocking access for pedestrians, wheelchairs etc
 - Potential for collisions from vehicles entering driveways due to poor sight distance (e.g. due to parked cars blocking the driver view).
- Footpaths adjacent to the property boundary
 - Poor accessibility to parked vehicles across steep or vegetated nature strips
 - Potential for collisions from vehicles exiting properties via driveways due to poor visibility

Interaction of footpaths and particularly high volume/speed cycleways with bus stops and shelters, street furniture, power poles etc shall be considered to minimise likelihood of collisions and protect public safety.

Cycleways shall ideally be at least 1.5m from property boundaries especially if high fences or vegetation may obscure the view of drivers leaving properties via driveways.

Cycleways shall ideally be set back from the kerb at least 0.3m from traffic lanes and 0.6m (preferably 1m) from parked vehicles¹⁵ to reduce the risk of injury from collisions with opening car doors or exiting passengers and to avoid kerb returns at driveways (See AGRD06A Figure 5.8).

Widths

Footpath widths shall be determined based on the type and volume of usage. Preferred widths in relevant areas are as follows:

- Commercial: 2.4m (2.5m for shared bicycle path/footpath)
- Civic space: 4.0m.

¹⁵ Tasmanian Cycling Infrastructure Design Guide

Preferred widths for dedicated cycleways in all areas are:

- Single direction: 2.0m
- Bi-directional: 4.0m.

The *Improving residential standards in Tasmania - Recommendations report (2024)* recommends 1.8m wide shared pedestrian and cycling paths on both sides of streets in 400m walking distance of public open space, high frequency transit corridors and business zones. Refer also to recommended footpath widths and location (i.e. one or both sides) in Table 1.

AGRD06A Section A.2 recommends that shared paths have a width of 2.0-4.0m depending on the level of usage. A minimum width of 3.0m is recommended for a path where high speeds occur.

Longitudinal grade

The safety and accessibility of footpaths in steep terrain shall be considered. The longitudinal grade will largely be dictated by the grade of the adjacent road and any pre-existing driveways. Handrails may be required on footpaths when grades are steeper than 1V:14H. Where possible, the location of rest areas with bench seats on steep footpaths can better cater for users of all abilities.

Materials

Council will typically specify footpath materials are required to fit in with the neighbouring infrastructure/ community character. Typically, this will be concrete or asphalt, but pavers may be required e.g. in central urban areas. Austroads ATS 4610 specifies a minimum 125mm thickness for concrete footpaths.

3.6.2 Minimum requirements

Location

Footpaths shall be set back at least 100mm from the property boundary per TSD R06-v3.

Municipal standards - Width and cross fall

Footpaths must meet the minimum requirements in TSD R09 v3 including widths and cross-fall, sub-base/base and concrete/asphalt depth, and concrete reinforcement. Minimum footpath widths are 1.5m with 1.2m reduced width for obstacles such as power poles¹⁶. Further details are provided on TSD R11 including design for pavers. Refer also to Table 4 of this guideline for minimum footpath widths and location (i.e. one or both sides). Note that the CEO/General Manager's delegated officer may require an increased footpath width of 1.8m at the head of cul-de-sacs.

¹⁶ Footpaths adjacent to kerbs should ensure that the full 1.5m width is maintained from the back of the crossover as shown on TSD R09-v3.

The Tasmanian Planning Scheme has specific footpath requirements for uses that require 10 or more car parking spaces (acceptable width of 1m) and for accessible car parking spaces (acceptable width not less than 1.5m and gradient not steeper than 1 in 14)¹⁷.

Typical footpath cross falls shall be 2% towards the kerb as per TSD R09 - v3. Generally, higher cross falls or drop offs at the edge of paths are to be avoided to reduce the risk of falls and wheelchairs or other mobility devices overturning. However, footpath cross falls of up to 4% may be approved by exception (per TSD R11-v3) where physical constraints exist. Higher cross falls may be required to tie in with existing infrastructure and at driveway crossovers to ensure that the back of the footpath is higher than the kerb level. The purpose of this is to avoid stormwater flowing along the kerb to discharge behind the crossover onto private lots. Alternatively, this issue may be addressed by extending the footpath width where there aren't other site constraints.

Materials

- Council may specify the material required for new footpaths considering the approach taken in adjoining areas and the character of the neighbourhood.
- Footpaths across a driveway crossing shall be constructed to the same standard and of the same material as shown in the Tasmanian Standard Drawings (R09)

Austrroads

Austrroads provides the following as part of the Guide to Road design:

- Part 6A: Pedestrian and Cyclist Paths (AGRD06A)

AGRD06A recommends a maximum footpath cross fall of 2.5%.

Maximum longitudinal grades are recommended for dedicated cycleways AGRD06A. However, footpaths adjacent to roads may need to exceed the recommended maximum longitudinal grades to match the road profile.

Separation of bicycle and pedestrian paths or lanes for two-way cycle paths is not normally required unless path conditions are congested or unsafe conditions due to path users.

The Tasmanian Municipal Standard Drawing R11-v3 specifies a minimum thickness of 100mm for concrete or 35mm for asphalt.

¹⁷ Note performance criteria apply for alternative solutions under C2.6.5 Pedestrian access.

3.6.3 Relevant standards and specifications

Relevant specifications:

- Austroads Technical Specification ATS 4610 – Light Duty Concrete Paving
- AUS-SPEC 0041 – Geometric sealed road design
- AUS-SPEC 0282 – Pathways and cycleways construction
- DSG Specification Section 703 General concrete paving
- TSD R11 Urban roads footpaths.

Australian Standards:

- AS1379:2007 Specification and supply of concrete
- AS1428.1:2009 Design for access and mobility
- AS2156.1-2001: Walking Track Classification and Signage¹⁸
- AS2156.2:2001 Walking tracks, Infrastructure design¹⁹
- AS2758.1 Aggregates and rock for engineering purposes – concrete aggregates
- AS3600:2018 Concrete structures
- AS3972:2010 General purpose and blended cements
- AS4671:2001 Steel reinforcing materials.

3.6.4 Guidelines

- Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling
- Tasmanian Coastal Works Manual Guideline G13.1 – Track construction in coastal areas
- [Tasmanian Cycling Infrastructure Design Guide](#).

¹⁸ Relevant mostly for recreational walking track design

¹⁹ Relevant mostly for recreational walking track design

3.7 Driveways/vehicle crossovers

3.7.1 Preferred

Driveway crossings shall be located as follows:

Table 13: Recommended separation distance from driveway crossings

Location	Recommended separation
Property side boundaries ²⁰	>1.0m
Kerb access ramps	>2.0m
Drainage pits	>0.75m
Tangent point of intersections	>6.0m
Power poles	>2.0m ²¹
Side entry pits, manholes, fireplugs and valve pits ²²	>1.0m
Existing street trees (from trunk)	>1.5m
Other driveway crossings	>7.0m (where possible)

3.7.2 Minimum requirements

- Driveways in urban areas shall be constructed in accordance with TSD R09.
- Driveways for rural areas shall be constructed in accordance with TSD R04 (typical) or TSD R05 (truck access).
- Driveway widths shall typically be 3.6m wide²³, or up to 7.2m subject to council approval. Wider driveways may be required for industrial or commercial lots e.g. to match internal access way widths if more than 6 car parking spaces are served.²⁴
- Concrete driveways are to have a minimum thickness of 150mm per Austroads ATS 4610 and Municipal Standard Drawing R11.
- Engineering drawings need to show that driveway accesses can be achieved for each lot and if substantial works required for access, the this is undertaken by the developer.
- Sight distances to be in accordance with Austroads Guidelines

²⁰ For new subdivisions. Match existing in established areas as per TSD R09.

²¹ Infrastructure closer than 2.0m from a power pole may require approval from TasNetworks.

²² Fire plugs, valve pits and manholes located in the verge/nature strip require driveable covers if within 1.0m of the start of the wings of a driveway. Refer also to AS3996-1992 for Class D sealed trafficable stormwater manhole covers.

²³ Development within Bushfire-Prone Areas typically require access with 4.0m wide vertical clearance per Code C13.0 of the Tasmanian Planning Scheme, Table C13.1.

²⁴ Refer Tasmanian Planning Scheme Code C2.0 Parking and Sustainable Transport, Table C2.2

- See also requirements for footpaths at driveway crossovers in Section 0.

3.7.3 Relevant standards and specifications

- AS1379:2007 Specification and supply of concrete
- AS1428.1:2009 Design for access and mobility
- AS2758.1:2014 Aggregates and rock for engineering purposes – concrete aggregates
- AS3600:2018 Concrete structures
- AS3972:2010 General purpose and blended cements
- AS4671:2001 Steel reinforcing materials
- Austroads Technical Specification ATS 4610 – Light Duty Concrete Paving
- TSD R09 Urban roads driveways
- TSD R10 Urban roads driveways water sensitive design.

3.8 Kerb and Channel

3.8.1 Preferred

Where possible, the longitudinal grade of kerb and channel will be minimised, consistent with road grades, with reference to Table 8.3 of AGRD03. Where steep grades are required (nominally >10%) checks shall be undertaken for the maximum velocity of stormwater along the channel to assess whether scour protection is required.

3.8.2 Minimum requirements

- Kerb and channel is to have a minimum longitudinal grade of 0.5% (except for instantaneous grade).
- The maximum longitudinal grade is to be consistent with the maximum road grade in section 3.4.5.
- Kerb and channel is to be formed using a continuous forming machine
- Kerb and channel dimensions shall be as per profile 'KC' (TSD R14 and TSD R15) unless otherwise approved by council.

3.8.3 Relevant standards and specifications

- AS2876:2000 Concrete kerb and channels (gutters) – manually or machine placed
- AS3972:2010 General purpose and blended cements
- Austroads Technical Specification ATS2245 Kerb and channel
- AUS-SPEC 1121 Open drains
- TSD R14 Approved concrete kerbs and channels profile dimensions
- TSD R15 Concrete kerbs and channels construction details
- TSD R16 Concrete kerbs and channels vehicular crossings
- TSD R17 Concrete kerbs and channels grated wedge crossings
- TSD R18 Concrete kerbs and channels access ramps
- TSD R19 Bluestone kerbs and channels construction details

3.9 Embankment Design

3.9.1 Preferred

The following preferred recommendations are made for embankments (cuttings and fill):

- The minimum grade recommended for embankments is 1.5% (1V to 80H) for drainage
- Where the nature strip is located between the footpath and the kerb, the cross slope shall be less than 1V in 15H. If steeper slopes are proposed, the designer will need to demonstrate how safe and convenient access to cars parked on the street can be provided
- Batter designs shall consider future vegetation and grass maintenance by slasher or hand equipment, with a maximum grade of 1V in 4H recommended for slasher operation
- Cuttings not steeper than 1V in 4H shall be covered with good quality topsoil, not less than 100mm deep and seeded with grass or suitable vegetation to the approval of council
- Cuttings steeper than 1V in 4H may require special erosion protection e.g. jute or coir mesh and/or hydromulch to the satisfaction of council
- Mulch shall have a minimum depth of 75mm
- High traffic areas shall be laid with instant turf
- Fill embankment steeper than 1V in 1.5H shall have engineering stabilisation works undertaken by a qualified professional to council satisfaction
- Road cuttings and fill embankments are to be contained within the road reserve unless otherwise approved by council
- Road cuttings shall be designed to minimise the need for excavation of driveways on public or private land, where possible
- Road cuttings for driveways shall enable vehicular access onto the lot
- The extent and depth of fill on allotments shall be shown on construction plans, highlighting any areas with proposed depths exceeding 300mm
- Cutting and fill above services shall be avoided where possible. If required, the minimum and maximum cover and compaction requirements of the service provider will need to be addressed
- Fill shall avoid areas of overland flow paths due to risk of raising flood levels upstream. Placement of fill in such areas shall be assessed by a qualified hydrologist.

3.9.2 Minimum requirements

Design

- TSD R06, Table 3 provides maximum batter slopes for embankments depending on the soil type with up to 1V in 3.0H in sand.
- TSD RF04 provides additional requirements for nature strips including soil types, soil preparation, fertiliser and seed mixes.
- Austroads AGRD03, recommends maximum slopes of 1V to 4H for vegetation maintenance. Table 4.11 indicates a potential maximum grade of 1V to 0.5H (2V to 1H), subject to geotechnical assessment of slope stability. Alternatively, stabilisation or retaining walls may be required.

Construction

- Embankment materials are to be compacted in layers not exceeding 400mm. Compaction shall produce a minimum of 95 per cent standard compaction as specified in AS1289.
- All imported fill materials shall be suitable for commercial and residential development and not include any contaminated material.

Post-construction

Prior to practical completion the developer shall provide:

- As constructed drawings showing final levels
- Civil engineer's certification that any site filling that exceeds a depth of 300mm complies with the provisions of AS3798.

3.9.3 Relevant standards and specifications

Standards

- AS3798: 2007 Guidelines on earthworks for commercial and residential development
- AS1289.5.3.5:1997 Methods of testing soils for engineering purposes – Soil compaction and density tests – Determination of the field dry density of a soil- water replacement method.

Specifications

- AUS-SPEC 0041 – Geometric sealed road design

3.10 Retaining Wall Design

3.10.1 Preferred

Design drawings and specifications for retaining walls or similar supports for private land adjoining a road shall be supplied to council for approval.

3.10.2 Minimum requirements

Retaining walls or similar supports for roads or footpaths are to be designed and certified by a structural engineer, and include suitable drainage provisions such as geotextile, aggregate and sub-soil drains connected to stormwater. The design for retaining walls shall also consider the need for protective structures e.g. handrails or guard rails for compliance with building regulations or other relevant codes.

As constructed drawings for the retaining walls and supports shall be provided as part of the as constructed documentation for roads and other infrastructure.

Retaining walls in the road reservation also require a building permit and associated sign off on completion by the building surveyor.

Development plans need to clearly show ongoing ownership for retaining walls, being either private to get level access or council to support the road.

Retaining walls under council ownership require an easement behind them for maintenance purposes. Habitable structures are not to be placed within this easement.

Retaining walls, or support structures required to support private land adjoining the road shall be constructed within the private land to council requirements and approvals. The landowner will be responsible for ongoing maintenance.

3.11 Sub soil drainage

3.11.1 Minimum requirements

Sub soil drains shall meet the following minimum requirements:

- Designed and constructed generally in accordance with TSD R12
- Filler material to be angular, clean, and durable crushed rock with uniformly sized particles of 14mm
- Geotextile shall be non-woven type thermally bonded, minimum weight 100g/m²
- Joints in geotextile fabric shall overlap by a minimum of 500mm and for the full width of the trench at the top
- Outlets shall discharge to stormwater pits or to waterways above the design flood level²⁵
- Subsoil drains for retaining walls shall be designed in accordance with any relevant standards for those structures (and the Building Act where that applies).

3.11.2 Relevant standards and specifications

- AS2439.1:2007 Perforated drainage pipe and associated fittings
- AS3704:1990 Geosynthetics – Glossary of Terms
- AS3705:2012 Geotextiles – Identification, marking and general data
- AS3706 Geotextiles – Methods of test
- Austroads Technical specification ATS 2255 – Subsoil Drainage
- DSG Specification Section 702 – Subsurface Drainage
- TSD R12 Sub soil drains construction details
- TSD R13 Sub soil drains pit connection – Type FD.

²⁵ The design flood level should be for a storm event at least equivalent to the design capacity for the minor system per Section 4.3.4.

3.12 Traffic facilities

Traffic facilities include crash barriers, signs, line marking etc. While some are covered by Tasmanian Standard Drawings, DSG standard drawings provide further details and requirements for other facilities.

3.12.1 Minimum requirements

Traffic facilities shall be consistent with TSD or DSG standard drawings.

3.12.2 Relevant specifications

Traffic facilities shall generally be undertaken consistent with:

- DSG specification 700 series
- Tasmanian Standard Drawings

3.12.3 Relevant standards

- See DSG Specifications for relevant standards.

3.13 Street trees and landscaping

3.13.1 Preferred

Landscape plans should be provided with applications for a planning permit for subdivisions, or other development which will impact on landscaping on public land. The design and implementation of the landscape plan must be in conjunction with the Department responsible for Council's parks and recreation areas. Council may specify a liaison officer for this matter.

Street trees and other landscaping/urban greening can provide numerous benefits to communities including visual amenity, protection from heat, and part of a broader response to climate change. Preservation of existing trees is preferred where possible and developers should consult the National Trust of Australia (Tasmania) Significant Tree Register. Management of significant trees may require liaison with Council, consideration of their Significant Tree Policy/Code and potential adaptations of preferred or standard design requirements to avoid removal where possible. The location of new street trees needs to be carefully considered regarding safety (including adequate visibility for drivers), impact on other assets, and future maintenance requirements.

The preferred location of new street trees is as follows:

Table 14: Recommended separation distance for street trees from adjacent infrastructure

Location	Recommended separation
Electricity or telecommunication poles	>4.0m
Streetlights	>6m ²⁶
Front of kerb	>0.8m ²⁷
Road edge (rural environments)	>3m
Kerb crossovers	>3m
Stormwater drainage pits	>2m
Tangent point of intersections	>12m
Structural elements e.g. walls/foundations	>2.5m

Typically, trees should be spaced at one per lot with a minimum spacing of 8-12m depending on the expected canopy size upon maturity.

The proposed location of existing vegetation, proposed street trees and other vegetation along with species selection shall be provided to council as part of a landscape plan for early consultation prior development application. The landscaping plan shall also inform the lighting design to ensure sufficient illumination of roads and footpaths, taking into account foliage of mature trees and shrubs.

Developers should consult directly with the relevant council if trees are proposed within parking areas or in traffic islands to ensure that these do not adversely impact on safety or other assets. The use of root barriers/structural soil should be considered for protection of adjacent road and surrounding infrastructure.

²⁶ Increased separation from streetlights may be required to ensure that the canopy does not significantly impact on light coverage.

²⁷ Additional setback may be required to prevent kerb heave, depending on available space and other assets in the verge. Similarly, additional setback may be required for safety, especially in higher speed environments. Refer Municipal Standard Drawings.

3.13.2 Minimum requirements

Acceptable separation distances for street trees and other infrastructure are as per Table 15.

Table 15: Minimum separation distance for street trees from infrastructure

Location	Recommended separation
Streetlights	>3m
Kerb crossovers	>1.5m
Intersections	>10m

A concept landscape plan is to be submitted with the application for a planning permit for a subdivision. A detailed landscape plan is required for subdivision design approval. The minimum requirements for landscape plans are provided in Section 5.3 Appendix 3: Landscape plan requirements.

Tree protection zones shall be applied during construction phase for any trees that are required to be preserved as part of the detailed landscape plan.

3.13.3 Relevant standards and specifications

- AS4970:2009 Protection of trees on development sites
- AUS-SPEC 0257 Road reserve and street trees.

3.14 Services

3.14.1 Preferred

Electrical services are to be installed underground unless otherwise approved by council.

Electrical substations/kiosks to be located on public open space or council reserves are subject to review and approval by council.

The location of electrical substations/kiosks are subject to:

- Suitable access being provided for installation and maintenance purposes
- Appropriate landscape treatment to screen installation
- Consideration of strategies to avoid graffiti.

Underground services (including electrical, communications, water, and sewerage) shall be installed within the road reserve but preferably not be installed under roads or on-street parking where possible due to the traffic management and safety issues created for future maintenance. Alternative locations are within the nature strip or under footpaths where required. Underground services (other than stormwater) within water sensitive urban design features such as vegetated swales shall be avoided if possible.

Water services installed on land with steep cross slope, requiring cut and fill, should ideally be installed on the top side of the road (i.e. in cut rather than fill). This will increase the chance that any potential leakage from pipes is captured by the roadside drainage, minimising the risk of flooding of properties on the lower side. The location of water services adjacent to electrical services shall consider the risk of electrocution if both services are disrupted.

3.14.2 Minimum requirements

Electrical substations/kiosks, conduits and overhead powerlines are to be installed in accordance with TasNetworks requirements. TasNetworks will either complete the design or review designs by accredited designers. Kiosk substations located within or adjacent to the road reserve are to be installed at least 3m from driveways and 1.6m from the back of footpaths.

The alignment of all underground services shall be in accordance with the service providers requirements.

Water and sewerage mains shall not be installed within 1m of property boundaries and a minimum 3m wide corridor clear of trees, lighting and power poles or other obstacles shall be provided to allow access for maintenance.

3.14.3 Relevant specifications, standards and codes

- AUS-SPEC 0223 Service Trenching

- Austroads Technical Specification ATS 1330 Management of utilities on site
- DSG Specification Section 706 – Installation or replacement of utility infrastructure within road reserves
- TasNetworks Design Specification Underground Residential Developments
- TasNetworks Construction Specification Underground Developments
- TasNetworks Distribution Design and Construction Standard – Kiosk substations
- TasWater supplement to Gravity Sewerage Code of Australia WSA02 – MRWA v2.0
- TasWater supplement to WSA 04-2005 2.1 WSAA Sewage Pumping Station Code of Australia Version 3.0
- TasWater supplement to WSAA Water Supply Code of Australia – MRWA Edition – Standard Drawings
- TasWater supplement to Water Supply Code of Australia WSA03 – MRWA v2.0
- Water Services Association of Australia, Gravity Sewerage Code of Australia WSA02 – 2011 MRWA v2.0
- Water Services Association of Australia, Sewage Pumping Station Code of Australia WSA04 2005 2.1
- Water Services Association of Australia, Pressure Sewerage Code Supplementary Manual 2013
- Water Services Association of Australia, Pressure Sewerage Code of Australia WSA 07-2007
- Water Services Association of Australia, Water Supply Code of Australia WSA03 – 2011 MRWA v2.0.

4. Stormwater

4.1 Stormwater management

Stormwater must be disposed of by gravity to a council stormwater system via a single connection where practicable. Where this is not available, it may be disposed of on-site to council's satisfaction. Where gravity drainage is not feasible, a pumped system may be proposed to discharge stormwater to the council system, for approval. Council drainage systems include:

- Minor drainage system – underground stormwater infrastructure including pits, pipes and manholes. Designed to avoid nuisance and damage from relatively small rainfall events.
- Major Drainage system – overland flow paths and waterways used to convey flows that exceed the minor drainage system.

Stormwater management may include volume detention, treatment and other devices, designed to achieve defined quantity and quality objectives. These Water Sensitive Urban Design elements typically form part of the minor drainage system.

For larger developments (typically with a total area greater than 2500m² for residential and 5000m² for non-residential,) council require a Stormwater Management Report to be provided by a suitably qualified person. This should provide a summary of the proposed stormwater system including the following elements:

- Site discharge location
- On-site detention
- Infiltration systems
- Pumping systems if applicable
- Water Sensitive Urban Design elements
- Major flow paths.

The Management Report should also provide details of the proposed system including:

- Proposed design objectives
- Development plan
- Catchment boundaries
- Watercourses
- Key assumptions, calculations and relevant software utilise
- Plan showing layout of proposed infrastructure and overland flow paths
- Commentary on the effectiveness of the proposed system versus design objectives

- Construction and maintenance considerations including management of erosion and sedimentation, responsibilities and design life.

New stormwater systems may include discharges to river streams or water bodies. These and any works within protected waterways need to be consistent with the C7.0 Natural Assets Code of the Tasmanian Planning Scheme. Development consistent with relevant guidelines is also encouraged.

4.1.1 Relevant references

Additional guidance regarding stormwater management is provided via the following documents:

- Council stormwater policies
- Tasmanian Stormwater Policy Guidance and Standards for Development (Derwent Estuary Program and LGAT, 2021)
- [Constructed Waterways in Urban Developments Guidelines \(Melbourne Water, 2009\)](#)
- [Wetlands and Waterways Works Manual \(Department of Natural Resources and Environment Tasmania\)](#)

4.2 Hydrology

4.2.1 Estimation of design flows

- Peak flows shall be calculated consistent with the Australian Rainfall and Runoff, A Guide to Flood Estimation. For small catchment areas (e.g. for a single lot or simple subdivision <1 ha) without significant storages/retarding basins, the Rational Method may be used²⁸. Other catchments may require hydrological modelling such as Initial Loss-Continuing Loss (IL-CL), RORB or RAFTS undertaken by an experienced professional.
- Storm losses may be estimated using factors sourced from the Australian Rainfall and Runoff Data Hub or provided by council, that are relevant to the catchment being modelled.
- The runoff coefficient (C) may be derived from fraction impervious values in Table 16.

²⁸ See Australian Rainfall and Runoff (Institution of Engineers Australia, 2001), Book IV, Clause 1.3.2

Table 16: Indicative fraction Imperviousness values based on development type

Fraction Imperviousness Values for Design and Modelling	
Development	Fraction Impervious
Central business district	1.0
Commercial, local business, neighbouring facilities, service industry, general industry, home industry	0.9
Significant paved areas eg. roads and carparks	0.9
Townhouse type development	0.7
Multi-unit dwellings (20 or more units per hectare)	0.85
Urban residential – high density (20 or more dwellings per hectare)	0.7 – 0.9
Urban residential – low density (5–20 dwellings per hectare, including roads)	0.45 – 0.85
Urban residential – low density (5–20 dwellings per hectare, excluding roads)	0.40 – 0.75
Rural residential	0.1 – 0.2
Open space and parks etc.	0

Source: Tasmanian Stormwater Policy Guidance and Standards for Development 2021, v1.

4.3 System capacity

Hydraulic analysis and stormwater system design should be in accordance with the Australian Rainfall and Runoff (Engineers Australia, 2019) and any future updates.

The minor drainage system shall be designed to minimise nuisance, safety risks and damage to infrastructure. Typically, this is achieved via subsurface drainage in urban environments. The relevant council will provide minimum capacity requirements for the minor drainage system. Preferred and minimum requirements are provided below for reference.

4.3.1 Preferred - Major drainage system

The major drainage system should be designed to safely convey the 1% AEP event with allowance for climate change based on emissions scenario SSP5-8.5²⁹ for the year 2100.

²⁹ See <https://data.arr-software.org/>

4.3.2 Minimum requirements – Major drainage system

The major drainage system shall be designed to safely convey the 1% AEP event with allowance for climate change based on emissions scenario SSP3-7.0³⁰ for the year 2100.

The overland flow path³¹ shall be designed to not cause any undue inundation of private properties (e.g. flooding/damage of properties or buildings³²). Overland flows may be conveyed via roads or other public lands. Overland flow via drainage easements is not preferred for major overland flow management. However, if required, then covenants may be required to prevent the construction of obstructions in the flow path (e.g. fences or sheds) and to allow access for maintenance.

4.3.3 Preferred – Minor drainage system

The recommended Annual Exceedance Probability (AEP) to be used for design of the minor stormwater system for different development areas are as follows:

Table 17: Preferred service levels for minor stormwater system design

Residential	Rural (>2ha)	Commercial	Industrial	CBD
5%	10%	2% ³³	2%	2%

The allowance for climate change should be in accordance with Australian Rainfall and Runoff Data Hub, emissions scenario SSP5-8.5³⁴ for the year 2100³⁵ unless it can be demonstrated that overflows are fully contained in overland flow paths and is not likely to cause any damage to structures.

³⁰ See <https://data.arr-software.org/>

³¹ An overland flow path is the path that water takes over the surface of the land when it exceeds the capacity of the underground drainage system and follows the natural topography.

³² The Building Act requires habitable buildings to be 300mm above the prescribed flood level for land subject to flooding. This is typically defined as the 1%AEP. A similar level of protection should be considered for any development which is likely to change overland flow paths (or depths) adjacent to buildings.

³³ The 2% AEP nominated for Commercial, Industrial and CBD areas is consistent with the recommendations of Austroads Guide to Road Design Part 5 (Drainage – General and Hydrology Considerations), Table 6.3 (Priority B land use classification). Higher levels of protection up to 1%AEP may be required for essential commercial and industrial uses including food supply, pharmaceutical and education centres. For Priority A land use classification including essential services (e.g. hospital, civil defence, police, ambulance and fire) <1%AEP is recommended. Protection may be achieved via overland flow paths (major system) where the exceedance of the minor system does not prevent safe access to buildings and roadways.

³⁴ See <https://data.arr-software.org/>

³⁵ Some councils have specified emissions scenario RCP8.5 in their stormwater policies. The relevant factors used to allow for climate change for RCP8.5 (and other scenarios used prior to recent updates) are provided in Australian Rainfall and Runoff Book 1, Chapter 6, s6.6, Table 1.6.7 (Southern Slopes Cluster).

4.3.4 Minimum requirements – Minor drainage system

The minimum Annual Exceedance Probability (AEP) to be used for design of the minor stormwater system for different development areas are as follows:

Table 18: Minimum service levels for minor stormwater design

Residential	Rural (>2ha)	Commercial	Industrial	CBD
10% ³⁶	20% ³⁷	5%	5%	5%

Higher levels of protection are provided for commercial, industrial and CBD areas due to the increased potential level of impact that flooding can have in these areas and the importance of businesses and institutions (including vulnerable uses such as hospitals and aged care) located in these areas. However, if the overland flow path does not impact on access to these areas or the function of critical infrastructure or essential services, then reduced levels of protection may be justified. Conversely stricter standards may be required by councils with consideration of the level of road use and population impacted.

The minimum allowance for climate change should be in accordance with Australian Rainfall and Runoff Data Hub, emissions scenario SSP3-7.0 for the year 2100³⁸. A less conservative climate change factor (e.g. SSP 2-4.5) may be acceptable to councils for the minor system if the risk of overland flows is deemed acceptable.

4.4 Flooding safety criteria

For overland flow paths, the design shall consider flooding safety criteria.

4.4.1 Preferred

Wherever possible, overland flow paths shall be designed to achieve H1 hazard classification for the 1% AEP major storm (including climate change allowance) per the Australian Rainfall &

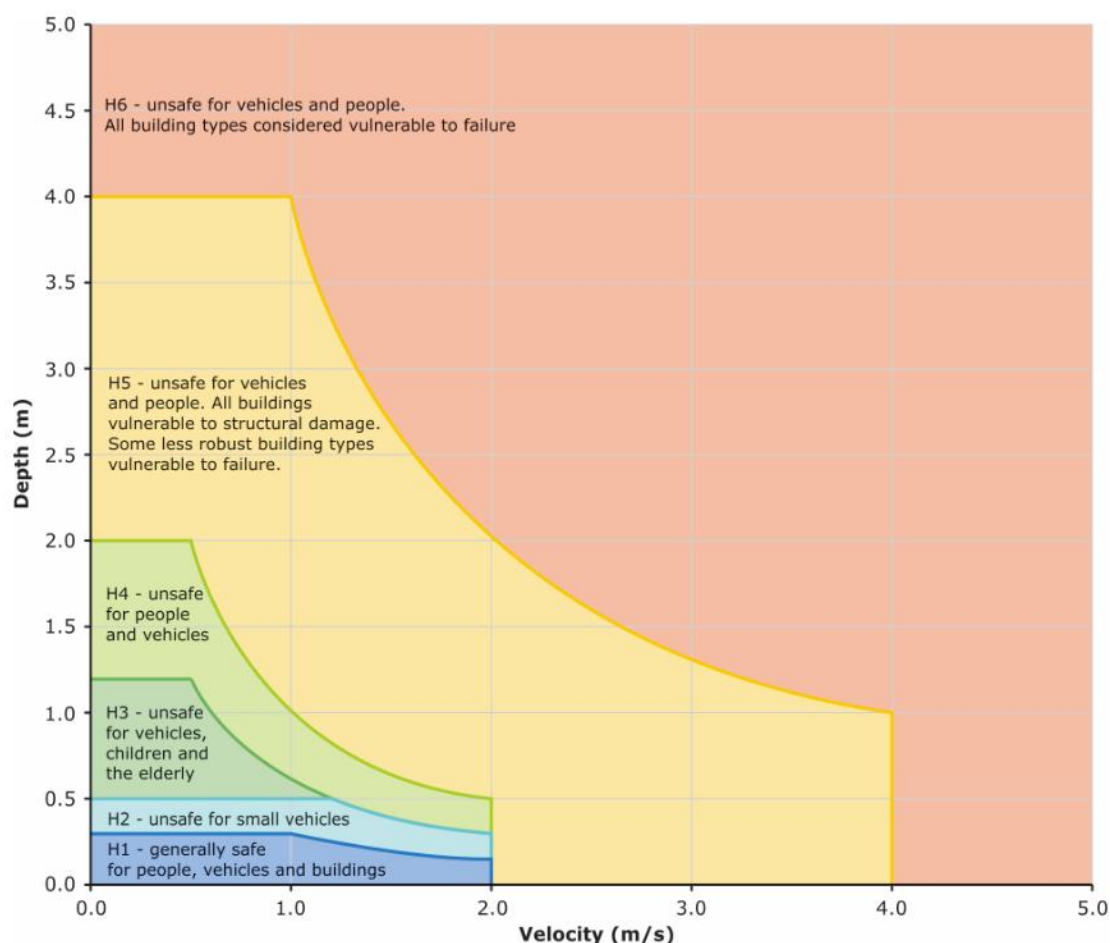
³⁶ While it is noted that some councils have previously adopted a minimum standard of 1 in 5 year Average Recurrence Interval (approximately 20% AEP) for urban areas, Austroads Guide to Road Design Part 5 (Drainage – General and Hydrology Considerations), specifies 10% AEP for road cross drainage per Part 5, Table 6.4. For floodways, Austroads specifies 10-20% AEP for urban and local roads (Classes 4 and 5).

³⁷ While it is noted that some councils have previously adopted a minimum standard of 1 in 2 year Average Recurrence interval for rural areas (approximately 40% AEP) this is not considered to meet the expectations of the community in the long-term (except perhaps for small, isolated areas with a small number of properties impacted). A minimum 20% AEP is recommended noting that a more stringent 10% AEP standard is applied regional areas of Victoria per the Infrastructure Design Manual <https://www.designmanual.com.au/download-idm>.

³⁸ Some councils have specified a more conservative emissions scenario (RCP8.5) in their stormwater policies. The relevant factors used to allow for climate change for RCP8.5 (and other scenarios used prior to recent updates) are provided in Australian Rainfall and Runoff v4.1 Book 1, Chapter 6, s6.6, Table 1.6.2

Runoff Book 6, Chapter 7 (see Figure 1). This requires a maximum depth of 0.3m (for small cars) and a maximum velocity of 2.0m/s.³⁹

Figure 1: General Flood Hazard Curves (taken from Australian Rainfall and Runoff)



4.4.2 Minimum standards

Overland flow paths shall ensure that the depth x velocity is <0.35 for the 1% AEP major storm including climate change allowance. The maximum depth shall be $<0.5\text{m}$ (for children and adults) and velocity $<3\text{m/s}$.⁴⁰

³⁹ Note that the maximum depth reduces as velocity increases per the flood hazard curves (Figure 6.7.9 of ARR Book 6, Chapter 7).

⁴⁰ From ARR Book 6, Chapter 7 Figure 6.7.4

4.5 Flow detention

Any increase in stormwater runoff (from roofs, roads, carparks or footpaths) must either:

1. Be contained within the existing public stormwater system for the specified design criteria (See Section 4.1)
2. Be contained with public infrastructure upgraded by the developer to the satisfaction of council, OR
3. Be contained within on-site detention and existing/upgraded infrastructure.

Where on-site detention is required on individual lots, the following minimum storage volumes are to be provided:

Table 19 Minimum on site detention requirements

Additional impervious Area Proposed	Onsite detention required	Total tank size required	Orifice diameter
<200m ²	500L	>2000L	25mm
200-300m ²	1000L	>4000L	25mm

The tank shall have a low-level outlet for garden use or ideally be connected to supply a toilet and/or laundry⁴¹ to enable the available capacity to be restored between storms. If the catchment includes roads or carparks and stormwater bypass interceptor (or similar) is recommended prior to the onsite detention to remove silt, hydrocarbons and other pollutants. At minimum a discharge pipe is required below the onsite detention volume, with a restricted orifice diameter and with no valves installed. The orifice size is to allow restricted discharge for the detained volume. A larger overflow pipe will be required below the top of the tank, in accordance with AS3500.3.

Where the impervious surface is >300m², for on lot or subdivision scale development, or if an alternative design approach is proposed, a site-specific design is required to be developed and submitted for approval. This would generally require modelling of design storms by a suitably qualified person (e.g. a civil engineer). At the subdivision scale an engineered detention/retention basin may be more suitable than an off-the shelf storage.

The ownership and future maintenance of onsite storages shall be considered. Typically, this should be the responsibility of the property owner, i.e. not transferred to council.

⁴¹ Any use within the home will need to be compliant with the Plumbing Code of Australia and consider the source of the stormwater (e.g. roof, driveway etc), proposed use, and proposed plumbing arrangements to prevent cross-contamination of potable water supplies.

4.6 Stormwater system design

4.6.1 Hydraulic design

New stormwater systems shall address the following minimum requirements for the design flow⁴²:

Design parameter	Requirement
Minimum pipe velocity (if depth is more than half the pipe diameter)	0.75 m/s
Minimum pipe velocity (if depth is less than half the pipe diameter)	1.00 m/s
Maximum pipe velocity	5.00 m/s ⁴³
Minimum pipe grade	0.4% ⁴⁴

Additional requirements:

- Anchor blocks shall be installed on pipes with grades of 10% or greater at spacing per TSD SW01.
- Open drains shall be designed to prevent erosion if velocity is in excess of 0.5m/s
- Hydraulic calculations must be submitted to council for approval Including long sections clearly showing hydraulic grade lines.

4.6.2 General requirements

The following general requirements also apply:

- Concrete side entry or gully pits conforming to the Tasmanian Standard Drawings are to be located along the kerb and channel at each low point, tangent point and other locations to enable drainage of the road
- Stormwater entry pits shall be provided upstream of pedestrian kerb ramps where high stormwater flows are expected
- The total length of kerb and channel draining to an entry pit is not to exceed 90m or as otherwise specified by council
- The depth of an entry pit is not to exceed 1.5m (where possible)
- Concrete manholes conforming to the Tasmanian Standard Drawings are to be constructed at the end of pipelines and at locations where pipelines intersect or change direction or gradient

⁴² The term “design flow” should be considered equivalent to the required capacity of the minor system, or alternatively the actual system capacity.

⁴³ Higher velocities may be permitted where unavoidable due to steep property, subject to council’s discretion, considering energy dissipation etc.

⁴⁴ Higher pipe grades are required for small diameter pipes. Refer to AS3500.3 s6.3.4.

- If the end of the council pipeline is within 30m of a manhole then the terminating manhole may be an inspection pit constructed using a DN600 RCP, a DN600 gatic manhole cover and benched floor
- The maximum length of a stormwater pipe between two manholes on public land are as follows:
 - 100m for pipe diameters less than 1200mm
 - 150m for diameters 1200mm to 1800mm
 - 200m for diameters greater than 1800mm.
- The minimum internal diameter of pipes used for the drainage of stormwater from any road is to be 300mm
- Property connections to the stormwater system are to have a diameter of 150mm unless otherwise specified by council
- Boundary stormwater stubs for new lots shall be clearly labelled to avoid future connections being made to sewer
- Where connections to the kerb are permitted a prefabricated metal kerb adaptor is required as per Drawing SW029 of the Tasmanian Standard Drawings
- Pipelines shall be designed for future maintenance access. It is preferred that pipelines are located within road reservations. If pipelines are located through private property they shall be placed along lot boundaries and grouped with other services (such as sewer pipes) where possible
- Separation distances from other services are consistent with the requirements of those asset owners
- Pipelines should be designed for future maintenance access. Optimally pipelines will be located within road reservations. If pipelines are located through private property they shall be placed along lot boundaries and grouped with other services e.g. sewer where possible.
- Pipelines on private properties shall be designed in accordance with AS3500.3

4.6.3 Approved materials

Approved materials for stormwater pipelines (including trenchless renewal/relining options) are as follows:

Table 20: Approved stormwater pipe materials

Pipes	Trenchless technology methods
uPVC (available up to DN375)	Rib Loc – spiral wound PVC
DICL	Sliplining – PVC/PE
MSCL	Pipe bursting – PE
Polyethylene	Structural cured in place liner
RCP	
FRC	
GRP	
PP	

4.6.4 Relevant references, guidelines and standards

- Australian Rainfall and Runoff – Guidebook (Version 4.2)
- Australian Rainfall and Runoff, 2001 (for the Rational Method)
- Australian Rainfall and Runoff Design Hub (<https://data.arr-software.org/>)
- Austroads Guide to Road Design Part 5 – Drainage General and Hydrology Considerations
- Melbourne Water Hydrologic and hydraulic design
<https://www.melbournewater.com.au/building-and-works/developer-guides-and-resources/standards-and-specifications/hydrologic-and>
- [Guidelines for the Maintenance of Stormwater Treatment Measures by Stormwater NSW \(Yellow book\)](#)
- IPWEA Qld division, Queensland Urban Drainage Manual 2016.

4.7 Stormwater quality

4.7.1 Construction phase

Prior to construction, the design shall include an Erosion and Sediment Control Plan in accordance with relevant guidelines and council requirements.

4.7.2 Preferred

The State Stormwater Strategy 2010 states that:

All new developments that create 500m² or more of additional impervious surface, including subdivisions, roads and other large developments, should incorporate preferred stormwater management.

Exemptions are typically applied for development with <500m² of impervious area unless there are > 6 car parking spaces or a potentially contaminating activity. Councils may also provide exemptions for stormwater quality performance standards for other types of developments e.g.:

- Subdivisions less than or equal to 5 lots
- Subdivision with lots >5000m² each and roads and footpaths <500m² in area
- Subdivisions for creating road reserves, public open space, public infrastructure, littoral or riparian reserve or minor boundary adjustments.

Individual councils may apply different requirements within their adopted stormwater management policies per s6.11.2 g) of the Tasmanian Planning Scheme, noting that there is no statewide Stormwater Code.

Preferred for treatment of stormwater is to achieve the following reduction of key pollutants.

Table 21: Preferred stormwater treatment standards

Pollutant	Target reduction of annual loads
Litter/Gross Pollutants	90%
Total suspended solids (TSS)	80%
Total phosphorus (TP)	45%
Total nitrogen (TP)	45%

Source: Tasmanian Stormwater Policy Guidance and Standards for Development 2021, v1.

Note that the above requirements in Table 21 are not necessarily exhaustive. Some locations may also require tighter standards for treatment to protect sensitive ecosystems targeting other parameters e.g. hydrocarbons and heavy metals that are often elevated in road runoff. Similarly, potentially contaminating developments such as petrol stations may also require targets for hydrocarbons and other pollutants.

These performance standards are generally achievable by a range of manufactured devices, including >90% removal of litter. However, manufactured devices are not necessarily preferred or approved by all councils. Other WSUD devices such as bioretention swales can potentially achieve a similar performance requirement and may provide other benefits (e.g. flow attenuation, urban greening). For example, modelling indicates that bioretention swales with extended detention and a surface area of >1% of the catchment area can achieve the preferred performance requirements.⁴⁵ For other WSUD devices or a combination of elements (treatment trains) performance may be modelled with MUSIC or STORMUpdated or other model for typical small-scale developments. For larger developments (e.g. >2500m² of residential subdivision or >5000m² of industrial subdivision) modelling with MUSIC or similar software by a suitably qualified person is required to estimate future performance, and the results submitted for independent review.

All proposed WSUD systems shall consider the site-specific matters including:

- Lifecycle costs
- Spatial constraints
- Hydraulic constraints (considering potential backflow conditions in case of flood conditions downstream or high tide)
- Topography (e.g. stormwater drainage grade)
- Design storm and bypass frequency
- Access for maintenance (including safety performance)
- Maintenance frequency and responsibility
- Plant species selection (e.g. for bioretention swales)⁴⁶
- Visual impact
- Asset life.

An early conversation with council is recommended to confirm the preferred approach. Some councils may prefer a capital contribution from the developer towards stormwater improvements, noting that they could be best implemented elsewhere in the catchment with the design controlled by council.

WSUD elements may be initially constructed and maintained as soil and water management controls throughout the construction phase of the development and completed to achieve its intended design function once likely sediments loads are sufficiently low.

⁴⁵ Water Sensitive Urban Design – Engineering procedures for stormwater management in Tasmania, Chapter 4. (2012) available from Derwent Estuary Program: <https://www.derwentestuary.org.au/water-sensitive-urban-design/>

⁴⁶ The WSUD Engineering procedures provides an indicative plant list in Appendix B. Council will need to review and approve all plant species for suitability.

4.7.3 Minimum requirements

Specific performance targets for stormwater quality are not typically applied for development with <500m² impervious area or other developments exempt from council's stormwater policy. For these developments, the stormwater discharge shall not cause any nuisance (e.g. excess sediment or litter export which may cause blockage of stormwater systems) or evidence of environmental harm.

The minimum performance expectations are provided in Table 22. While these standards are not consistent with the State Stormwater Strategy (EPA, 2010) these may be accepted as an interim standard by councils in low-risk applications or until their stormwater management policies and asset management strategies are fully matured to a level to support improved treatment.

Table 22: Minimum stormwater treatment standards

Pollutant	Target reduction of annual loads
Litter/Gross Pollutants	90%
Total suspended solids (TSS)	80%

Source: Tasmanian Stormwater Policy Guidance and Standards for Development 2021, v1.

4.7.4 Relevant references, guidelines and standards

- AS3500.3 2021 Plumbing and Drainage Part 3: Stormwater Drainage
- [WSUD Procedures, Derwent Estuary Program](#)
- [Best Practice Erosion and Sediment Control – The fundamentals for development in Tasmania, Derwent Estuary Program and Tamar Estuary and Esk River program, 2023](#)
- [State Stormwater Strategy, EPA Tasmania, 2010](#)
- [Water by Design \(WSUD resources\)](#)
- [Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands, Water by Design 2010.](#)

5. APPENDICIES

5.1 Appendix 1: Checklists

Checklists are provided below for the following key stages:

- Planning approval
- Design approval
- Completion (Practical Completion).

Procedures are provided in the Tasmanian Development Manual Appendix 3 including requirements for hold points and audits during construction.

5.1.1 Planning approval

Element	Typical requirements
Lot layout	☐ Lot sizes and dimensions Including frontage width ☐ Building areas ☐ Setback distances ☐ Easements ☐ Slope (natural levels and proposed) ☐ Vehicular access ☐ Hazard areas e.g. flood prone land, landslip, bushfire
Earthworks	☐ Proposed cut and fill levels relative to natural surface ☐ Nature of fill material ☐ Retaining wall details

Element	Typical requirements
	☐ Part V agreements for any fill >300mm that geotechnical investigations by a qualified engineer must be undertaken prior to design and construction of any building on the land
Roads	☐ Existing and proposed road hierarchy ☐ Connectivity with surrounding roads, footpaths, cycleways and public transport
Services	☐ Water supply connection arrangements including additional water demand ☐ Sewerage connection arrangements including additional loads ☐ Preliminary hydraulic network analysis model (if requested) ☐ Stormwater connection arrangements ☐ Lot connection arrangements ☐ Stormwater Discharge location

5.1.2 Design approval

Element	Typical requirements
Lot Layout	☐ Lot dimensions and levels ☐ Easement widths ☐ Schedule of easements indicating ownership and lots impacted
Roads and footpaths	☐ Long sections ☐ Cross-sections (including details of road and footpath cross-fall) ☐ Vehicular crossing locations (and long sections if slope >20% or if requested by council) ☐ Pavement design ☐ Geotechnical report ☐ Road verge treatment
Earthworks	☐ Details of any fill (if >300mm in depth), including area and depth ☐ Details of any retaining walls (if required) ☐ Erosion and sediment control plan
Water supply	☐ Design details to the satisfaction of TasWater including drawings showing: ○ Location and size of regulating device, flow control fitting or service pipe ○ Details of fire protection devices ○ Location and size of any storage tank/s ○ Plumbing details
Sewerage design	☐ Design details to the satisfaction of TasWater including drawings showing drain: ○ Location ○ Size

Element	Typical requirements
	○ Fittings ○ Drainage vents ○ Material
Stormwater design	☐ Design details to the satisfaction of council including: ○ Long section showing pipe gradients ○ Hydraulic calculations and Hydraulic Grade Line ○ Pipe sizing ○ On site detention sizing ○ Overland flow routes ○ Velocity and depth for overland flow (1% AEP) ○ Water Sensitive Urban Design elements
Electrical supply	☐ Design by or to the satisfaction of TasNetworks
Telecommunications	☐ Service plan showing: ○ Details of pits and pipes on private land (if required) ○ Location of conduits for each dwelling ○ Lead-in conduits with property boundary
Mobile network	☐ Evidence that the area can be serviced for mobile communications
General	☐ All conditions of planning approval required for approval of final plans

5.1.3 Completion (Practical Completion)

Element	Typical requirements
Lot layout	☐ Final survey plan ☐ Schedule of easements including right of ways and service easements
Stormwater	☐ CCTV of stormwater pipelines ☐ Provision of property connections, stormwater mains, manholes, pits and other infrastructure to council requirements ☐ Operation and Maintenance Manual (if required e.g. for pump station, detention systems, WSUD elements, GPTs)
Water	☐ Completion of all requirements of the Certificate for Certifiable Work (CCW) including: ○ Pressure tests witnessed by TasWater ○ Evidence of live water connections
Sewerage	☐ Completion of all requirements of the Certificate for Certifiable Work (CCW) including: ○ Pressure tests witnessed by TasWater ○ CCTV of sewer pipelines ○ Operation and maintenance manual (if required e.g. for pump stations)
Earthworks	☐ A civil engineer's certification that any site filling that exceeds a depth of 300mm complies with the provisions of AS3798 'Guidelines on earthworks for commercial and residential development' 2007
Electrical supply	☐ Provision of underground electrical reticulation for power and street lighting by TasNetworks or to TasNetworks satisfaction ☐ Energisation of supply by TasNetworks ☐ As constructed drawings (if works not completed by TasNetworks)

Element	Typical requirements
Telecommunications	☐ As built design
General	☐ Certified as constructed drawings ☐ A certified statement from the Supervising Engineer of compliance with the approved plans and council's Standard Drawings and Specifications including relevant evidence (e.g. photographs, site diaries, test sheets).

5.2 Appendix 2: Building and plumbing approval checklists

5.2.1 Planning approval (buildings)

Element	Typical requirements
Ownership	☐ Notification of owner (if application made by third party) ☐ Consent from the PWS or council GM if land is owned by the Crown or council
Certificate of Title	☐ Folio text ☐ Folio plan ☐ Schedule of easements
Site plans	☐ Proposed use of site ☐ Boundaries and dimensions of the site ☐ Proposed lot boundaries ☐ Topography including contours showing AHD levels and major site features ☐ Natural drainage lines, watercourses and wetlands on or adjacent to the site ☐ Soil type ☐ Vegetation types and distribution including any known threatened species, and trees ☐ Vegetation to be removed ☐ The location and capacity and connection point of any existing services and proposed services ☐ The location of easements on the site or connected to the site ☐ Existing pedestrian and vehicle access to the site ☐ The location of existing and proposed buildings on the site ☐ The location of existing adjoining properties, adjacent buildings and their uses ☐ Any natural hazards that may affect use or development on the site ☐ Proposed roads, driveways, parking areas and footpaths within the site

Element	Typical requirements
	☐ Any proposed open space, common space, or facilities on the site
Layout plans	☐ The internal layout of each building on the site ☐ The private open space for each dwelling ☐ External storage spaces ☐ Parking space location and layout ☐ Major elevations of every building to be erected, including finished floor levels in AHD ☐ The relationship of the elevations to existing ground level, showing any proposed cut or fill ☐ Shadow diagrams of the proposed buildings and adjacent structures demonstrating the extent of shading of adjacent private open spaces and external windows of buildings on adjacent sites ☐ Materials and colours to be used on roofs and external walls.
Planning report ⁴⁷	☐ Demonstration of compliance with performance standards for the planning zone ☐ Demonstration of compliance with planning codes or specific area plans
Specialist reports	☐ Demonstration of design compliance with any requirements relating to hazards including landslide, flooding, bushfire or site contamination ☐ Demonstration of any requirements for protection of natural values ☐ Arborists reports if required for tree removal ☐ Heritage assessment if required
Fees	☐ Payment of fees

⁴⁷ Typically, only required for complex development proposals or planning scheme amendments.

5.2.2 Building Permit (Permit Building Work or Notifiable Building Work)

Element	Typical requirements
Design	☐ Requirements as per Schedule 1 of the Directors Determination – Director’s Specified List including the following for Class 1 buildings: ○ Site plan ○ Earthworks ○ Building location ○ Floor plan ○ Slab plan/ floor framing plan ○ Roof plan ○ Roof framing/bracing plan ○ Reflected ceiling plan ○ Elevations ○ Sections ○ Retaining walls ○ Energy efficiency
Additional documentation and requirements	☐ Certificate of Likely Compliance ☐ Building Administration Fee ☐ Certificate of Title, Schedule and Plan ☐ Architectural plans ☐ Certificates of the responsible designers (Approved Form 35) ☐ Details of proposed work for the protection of persons or property ☐ All certificates and reports relied on by the designer and the building surveyor

Element	Typical requirements
	☐ Evidence of the contract price of the building work, or if there is no contract an estimate of the total cost of the building work provided by a building surveyor ☐ A certificate for certifiable work (building) if required under the Water and Sewerage Industry Act 2008

5.2.3 Plumbing Permit (Permitted and Notifiable)

Element	Typical requirements
Site plan	☐ Location of existing pipelines ☐ Size and approximate depth of existing pipelines ☐ Location of proposed plumbing work
Design (sewer and stormwater)	☐ All requirements per Schedule 2 of the Directors Determination – Director’s Specified List including: ○ Location ○ Size ○ Drainage vents ○ Fittings and fixtures ○ Material ☐ Structures close to or over the easement ☐ Stormwater detention device design and structural details
Design (water)	☐ All requirements per Schedule 2 of the Directors Determination – Director’s Specified List including: ○ Location and size of regulating device, flow control fitting or service pipe ○ Details of fire protection devices ○ Location and size of any storage tank/s ○ Plumbing details

5.3 Appendix 3: Landscape plan requirements

Landscape plans shall include the following:

Element	Typical requirements
General	☐ Title ☐ Address of the property ☐ Applicant's name ☐ Landscape Architect or approved designer's name and address ☐ Scale ☐ North point and ☐ Drawing date
Existing elements	☐ Site boundaries, fences, driveways, retaining walls and any other structures. ☐ Trees and vegetation with a height greater than 3 metres (including plant name, trunk position, canopy spread and Tree Protection Zone) ☐ Natural landscape features such as existing natural vegetation, rocky outcrops or water courses ☐ Details of services or utilities
Proposed elements	☐ All new works including structures, fences, retaining walls, steps, paving, mounding, services, utilities, drainage system, lighting, irrigation system, surface materials and grass areas. ☐ The status of existing trees, and whether they are to be retained or removed. ☐ The location of each proposed plant. The plant schedule is to include: ○ Botanical name ○ Common name ○ Container/pot size and ○ Quantity

Element	Typical requirements
	☐ Street tree size will be determined for each application, however, generally must be a minimum of 2.5m high at planting. ☐ Water Sensitive Urban Design elements on public land



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