

Central Highlands Council Subdivision Guidelines

2015

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1 Introduction

Most subdivision developments involve the construction of significant public infrastructure, which ultimately becomes the responsibility of Council to maintain and renew. The purpose of these guidelines is to inform applicants of Council's engineering design standards and practices and to assist in the preparation of subdivision proposals. The guidelines also inform the applicant of Council's requirements during the approvals process, construction of civil works, audit inspections, defects liability period and final handover.

Council's Works and Services Department is required to determine the engineering merits of development proposals and these guidelines also specify the information required to be able to properly consider an application in this regard.

Council's Development and Environmental Services Department is required to assess the application from a planning point of view including layout, lot sizes and orientation, connectivity between different land parcels, provision of public open space, retention of vegetation and scenic issues and other considerations in the current planning scheme. Please contact a Council Planning Officer regarding any of these matters.

2 Abbreviations and Interpretations

i. Abbreviations:

SD – Standard Drawing

DIER – Department of Infrastructure, Energy and Resources

NBN – National Broadband Network

IPWE Aust. – Institute of Public Works Engineers Australia

SWMP – Soil and water management plan

K&C – Kerb and channel

ii. Interpretations:

- a. Where the terms *must* or *shall* are used then the requirement is to be considered compulsory.
- b. Where the term *may* is used then the discretion of the designer is expected, however the ultimate acceptance of the proposed solution is subject to the final approval of Council's Municipal Engineer or General Manager.

3 General Design Requirements

- i. Roadworks and drainage must be designed and constructed in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division), the Department of Infrastructure, Energy & Resources (DIER) specifications and to the requirements of Council's General Manager.
- ii. No work is to take place within existing public road reservations or existing Council easements without obtaining prior consent from Council's Works and Services Manager.

3.1 Services

- i. The Subdivider must pay the cost of any alterations and/or reinstatement to existing services, Council infrastructure or private property incurred as a result of the proposed subdivision works. Any work required is to be specified or undertaken by the authority concerned.
- ii. Property services must be contained wholly within each of the lots served, or within an easement to the satisfaction of the Council's Municipal Engineer or responsible authority.
- iii. All services must be sized and located to service the ultimate potential development of the site, to the satisfaction of Council's General Manager, Municipal Engineer or the responsible authority.

3.1.1 Sewer & Water

- i. Sewer and water infrastructure to be constructed to the requirements of the relevant authority and to the satisfaction of Council's General Manager or Municipal Engineer.

3.1.2 Telecommunications, electrical, NBN and gas reticulation

- i. Electrical reticulation and street lighting, telecommunication reticulation, NBN and gas reticulation must be provided to each lot in accordance with the responsible authority and the satisfaction of Council's General Manager or Municipal Engineer.
- ii. Electrical reticulation, street lighting and telecommunication reticulation including NBN, must be installed underground, unless approved otherwise by Council's General Manager or Municipal Engineer.
- iii. Prior to the work being carried out a drawing of the electrical reticulation and street lighting, NBN and telecommunications reticulation and gas conduits, in accordance with the appropriate authority's requirements and relevant Australian Standards, must be submitted to and endorsed by the Council's General Manager or Municipal Engineer.
- iv. Council may require a letter of release from each service delivery authority, confirming that all conditions of the Agreement between the Owner and authority have been complied with and that future lot owners will not be liable for network extension or upgrade costs, other than individual property connections at the time each lot is further developed, to be submitted to Council prior to the sealing of the final plan of survey.

3.2 Easements

- i. Easements must be created over all drains, pipelines, wayleaves and services located in private property, in accordance with the requirements of the Council's Works and Services Manager or Municipal Engineer and the relevant authorities. The cost of locating and creating the easements shall be at the subdivider's full cost.

Pipe Internal Diameter	Easement Width
Up to 450mm	3m
475mm – 900mm	4m
925mm – 1200mm	4m
1200mm +	5m

Table 1 - Easement Width based on Pipe Diameter

Pipe Excavation Depth	Easement Width
1.2m	3m
1.5m	4m
1.8m	4m
2.1m	5m
2.1m +	Subject to detailed design in accordance with relevant standards, to the satisfaction of Council's General Manager or Municipal Engineer.

Table 2 - Easement Width based on Pipe Depth

Required easement widths for Council pipes are specified in Tables 1 and 2 and shall be the wider value as determined by the tables.

Note, easement widths in tables 1 and 2 above assume that the pipe is singular and centrally located. If not then easement width increases so that a minimum of one third of easement width exists on either side of outer edge of pipeline(s). The width shall be rounded up to the next 0.5m.

4 General Construction Requirements

- i. Council's General Manager or Municipal Engineer may require the postponement of any subdivision works to enable other works to be undertaken within the road reservation, by the Council or other public authority.
- ii. Council's General Manager or Municipal Engineer may permit a highway, or other infrastructure referred to in this guideline, or standard drawings prepared by the IPWE Aust. (Tasmania Division), to be constructed without complying with the provisions therein.

4.1 Construction Amenity

- i. Construction work must only be carried out between the following hours unless otherwise approved by the Council's General Manager or Manager Environment and Development Services,
 - ii.
 - Monday to Friday 7:00 AM to 6:00 PM
 - Saturday 8:00 AM to 6:00 PM
 - Sunday and State-wide public holidays 10:00 AM to 6:00 PM
- iii. All subdivision works must be carried out in such a manner so as not to unreasonably cause injury to, or unreasonably prejudice or affect the amenity, function and safety of any adjoining or adjacent land, and of any person therein or in the vicinity thereof, by reason of:
 - a. Emission from activities or equipment related to the use or development, including noise and vibration, which can be detected by a person at the boundary with another property.

- b. Transport of materials, goods or commodities to or from the land.
 - c. Appearance of any building, works or materials.
- iv. Any accumulation of vegetation, building debris or other unwanted material must be disposed of by removal from the site in an approved manner. No burning of such materials on site will be permitted unless approved in writing by the Council's Manager DES or General Manager.
- v. Public roadways or footpaths must not be used for the storage of any construction materials or wastes, for the loading/unloading of any vehicle or equipment; or for the carrying out of any work, process or tasks associated with the project during the construction period.
- vi. Any, soil, sediment, mud or debris tracked onto Council roads must be removed and cleaned to the satisfaction of Council's Works and Services Manager or General Manager within 24 hours of the contractor being notified or as otherwise directed.

4.2 Traffic Management

- i. A Traffic Management Plan prepared by a suitably qualified person in accordance with Section G2.6 of DIER (February 2005): *General Specifications*, Department of Infrastructure, Energy and Resources, Hobart and the referenced document DIER (June 2004): *Traffic Control at Work Sites Code of Practice*, Department of Infrastructure, Energy and Resources, Hobart or the current replacements, must be submitted to Council's General Manager or Municipal Engineer prior to the commencement of any work within a public road reserve. All traffic control is required to be performed and certified by accredited traffic control personnel and all works within the road reserve to comply with all relevant occupational health and safety regulations.

The traffic management Code of Practice can be found at <http://www.transport.tas.gov.au/safety/>.

4.3 Soil and Water Management

- i. A Soil and Water Management Plan (SWMP) must be prepared where a development exceeds a total of 250 square metres of ground disturbance .
- ii. The SWMP is to be prepared in accordance with the guidelines for *Soil and Water Management on Building and Construction Site* by the Derwent Estuary Programme and NRM South, and must be approved by Council's Works and Services Manager or Municipal Engineer before development of the land commences.
- iii. Temporary run-off, erosion and sediment controls must be installed in accordance with the approved SWMP and must be maintained at full operational capacity to the satisfaction of Council's Works and Services Manager or Municipal Engineer until the land is effectively rehabilitated and stabilised after completion of the development.
- iv. The SWMP must show the following:
 - a. Allotment boundaries, north-point, contours, approximate grade and direction of slopes, layout of roads, driveways, building envelopes and reticulated services (including power and telephone, gas, sewer, stormwater or water supply), impervious surfaces and types of all existing natural vegetation;
 - b. Critical natural areas such as drainage lines, recharge area, wetlands, and unstable land;
 - c. Estimated dates of the start and completion of the works;
 - d. Timing of the site rehabilitation or landscape program;
 - e. Details of land clearing and earthworks or trenching and location of soil stockpiles associated with roads, driveways, building sites, reticulated services and fire hazard protection.
 - f. Arrangements to be made for surface and subsurface drainage and vegetation management in order to prevent sheet and tunnel erosion.

- g. Temporary erosion and sedimentation controls to be used on the site (refer to clause 4.1 (iv))
 - h. Recommendations for the treatment and disposal of wastewater in accordance with Standards Australia (2000), AS/NZS 1547: *On-site wastewater management*, Standards Australia, Sydney.
 - i. Outline of the maintenance program for the erosion and sedimentation controls.
- v. Appropriate temporary control measures include, but are not limited to, the following:
- Minimise site disturbance and vegetation removal;
 - Diversion of up-slope run-off around cleared and/or disturbed areas, or areas to be cleared and/or disturbed, provided that such diverted water will not cause erosion and is directed to a legal discharge point (eg. temporarily connected to Council's storm water system, a watercourse or road drain);
 - Sediment retention traps (e.g. sediment fences, straw bales, grass turf filter strips, etc.) at the down slope perimeter of the disturbed area to prevent unwanted sediment and other debris escaping from the land;
 - Sediment retention traps (e.g. sediment fences, straw bales, etc.) around the inlets to the stormwater system to prevent unwanted sediment and other debris blocking the drains;
 - Stormwater pits and inlets installed and connected to the approved stormwater system before the roadwork's are commenced; and
 - Rehabilitation of all disturbed areas as soon as possible.
- vi. The topsoil on any areas required to be disturbed must be stripped and stockpiled in an approved location shown on the SWMP for reuse in the rehabilitation of the site. Topsoil must not be removed from the site until completion of all works, unless approved otherwise by the Council's Municipal Engineer.
- vii. All disturbed surfaces on the land, except those set aside for roadways, footways and driveways, must be covered with top soil and, where appropriate, re-vegetated and stabilised to the satisfaction of the Council's Works and Services Manager or Municipal Engineer.

5 Approvals Process

The approved planning permit will specify the level of civil and infrastructure works required for the subdivision.

The applicant will be required to engage a suitably qualified and experienced engineer (or engineering consultancy) to prepare design plans and specifications for submission for Council approval. This guideline specifies the parameters and standards appropriate for various civil and infrastructure components.

An engineering plan assessment and inspection fee of 1% of the value of the approved engineering works, or a minimum of \$200.00¹, must be paid to Council in accordance with Council's fee schedule. This fee covers:

- a. Assessment of the design plans and specifications
- b. Attendance at 'specified' audit inspections (each follow-up inspection due to non-compliances may be charged separately in accordance with Council's current schedule of fees.

¹ Or as otherwise specified by Council's current schedule of fees.

- c. Complete on maintenance inspection at time of practical completion and off maintenance final takeover upon completion of the defects liability period.

5.1 Development Application

Refer to appendix for information required with application.

5.2 Engineering Drawings

The Design Engineer is to submit one (1) full hard copy and one (1) electronic set of engineering plans and design documentation for Council comment. Electronic plans should be provided in pdf format.

Following receipt of Council comment, four (4) sets of final plans (unless agreed otherwise) and specifications and one (1) set of design documentation must be provided to Council for formal Council approval. The approved engineering plans shall form part of the subdivision permit when approved.

Council will keep two (2) sets of approved drawings and two (2) sets will be returned to the subdivider's engineer (unless agreed otherwise). One (1) set of the approved engineering design drawings must be kept on site at all times during construction.

- i. Engineering design drawings, to the satisfaction of the Council's General Manager or Municipal Engineer, must be submitted to and approved by Council before any works associated with development of the land commence.
- ii. Engineering design drawings are to be prepared by a qualified and experienced civil engineer, or other person approved by Council's General Manager or Municipal Engineer, in accordance with Standards Australia (1992): *Australian Standard AS1100.101 Technical Drawing – General principles*, Homebush, and Standards Australia (1984): *Australian Standard AS1100.401 Technical Drawing – Engineering survey and engineering survey design drawing*, Homebush, and must show -
 - a. All existing and proposed services required by this permit;
 - b. All existing and proposed roadwork required by this permit;
 - c. Measures to be taken to provide sight distance in accordance with the relevant standards of the planning scheme;
 - d. Measures to be taken to limit or control erosion and sedimentation;
 - e. Any other work required by this permit.
- iii. Approved engineering design drawings will remain valid for a period of 2 years from the date of approval of the engineering drawings.
- iv. All new public infrastructure and subdivision work must be designed and constructed to the satisfaction of Council's Manager Works and Services or Municipal Engineer and in accordance with the following -
 - *Local Government (Building & Miscellaneous Provisions) Act 1993*;
 - *Local Government (Highways) Act*;
 - *Drains Act 1954*;
 - *Waterworks Clauses Act*;
 - Australian Standards;
 - Building and Plumbing Regulations;
 - Relevant By-laws and Council Policy;
 - Current IPWEA (Tasmanian Division) and Central Highlands Council Municipal Standard Drawings;

- Current IPWEA and Central Highlands Council Municipal Standard Specifications.

5.3 Staging a Subdivision

Council may approve staging of a subdivision under one permit provided:

1. staged services are to be extended to the boundary of future stages;
2. staged services are to be extended across the full road frontage of lots; and
3. provision is to be made for temporary turning at the end of roads that will be extended as part of future stages.

6 Supervision of Works & Inspection Requirements

6.1 Construction Period

- i. The developer shall appoint a qualified and experienced Supervising Engineer (or company registered to provide civil engineering consultancy services) who will be required to certify completion of subdivision construction works. The appointed Supervising Engineer shall be the primary contact person on matters concerning the subdivision.
- ii. The Supervising Engineer (or his authorised representative) is required to fully inspect, oversee and call for tests of works and materials to be used in construction, to determine compliance with the IPWE Aust. (Tasmania Division) standard drawings and the approved plans and specifications, including but not limited to:
 - a. Laying pipelines and other stormwater infrastructure;
 - b. All side entry pits and manholes;
 - c. CBR testing and construction of sub-base course;
 - d. Compaction testing and construction of base course;
 - e. Construction of base for kerb and channel;
 - f. All string lines prior to laying kerb and channel;
 - g. Application of wearing course;
 - h. Construction of footpaths and verges, cutting and embankments; and
 - i. Construction of road crossings and accesses prior to pouring or sealing.
- iii. The Supervising Engineer shall be responsible to advise Council of predetermined 'hold-points' to allow Council to complete audit inspections. Work on the audit components shall not recommence until the Council Audit Inspector inspects the work. The Council's Works and Services Manager must be accompanied by the Supervising Engineer during each and every mandatory audit inspection.
- iv. The following are mandatory audit inspections for road construction:
 - a. Before stripping top soil.
Purpose: to inspect implemented 'Soil Water Management Plan'
 - b. Formation/subgrade level (each 200m section).
Purpose: to inspect stringlines and tolerances, to view the CBR in-situ tests and density test results where fill is present.
 - c. Compacted sub-base and kerb and channel (K&C) stringline.

Purpose: to sight K&C stringlines and confirm widths, view compaction results and certification that the gravel meets the DIER specification.

- d. Footpath & Driveways (pour ready).

Purpose: to ensure base compaction and concrete boxing and reinforcement are in place and to check manhole levels in footpaths and driveways.

- e. Final base course (prior to wearing course).

Purpose: to sight K&C stringlines and confirm widths, view compaction results and certification that the gravel meets the DIER specification.

- v. The following are mandatory audit inspections for stormwater infrastructure construction:
 - a. Pipelines prior to backfill.
Purpose: to inspect trench width, bedding material, pipe type and diameter.
 - b. Manholes and Connections.
Purpose: to inspect the connection type, benching, drops (internal and external).
- vi. In the event that any work is undertaken without inspection (by the Supervising Engineer) or work proceeds on components subject to an audit inspection but without inspection (by Council's Works and Services Manager), then proof shall be provided to Council's General Manager or Municipal Engineer that such work complies with the IPWE Aust. (Tasmania Division) standard drawings and the approved plans and specifications. Council's General Manager or Municipal Engineer may specify what proof or tests are required to satisfy this requirement. For underground stormwater infrastructure, it will be highly probable that it will be required to be opened for inspection.
- vii. Notwithstanding clauses 6.1 (ii) & (iii), the designs, drawings, plans, specifications, materials, workmanship, method of construction and finish of all subdivision works are to be in accordance with the requirements and final approval of Council's General Manager, Municipal Engineer or Works and Services Manager.
- viii. The subdivider must provide not less than 48 hours written notice to Council's Municipal Engineer, or Works and Services Manager, in the form of a *Subdivision Start Works Notice* (refer to Appendix A) before commencing construction works on site or within a council roadway. The *Subdivision Start Works Notice* must be accompanied by evidence of payment of the Building and Construction Industry Training Levy where the cost of the works exceeds \$12,000.
- ix. The subdivider must provide not less than 48 hours written notice to Council's Municipal Engineer or Works and Services Manager, before reaching any stage of works requiring inspection by Council, unless otherwise agreed by the Council's General Manager or Municipal Engineer.

6.2 On Maintenance Inspection

- i. At the point of practical completion of all subdivision works, the Supervising Engineer shall request (in writing) an inspection by the Council's Works and Services Manager. The request must be accompanied by the following documentation:
 - a. 'As Constructed' drawings produced in accordance with Council's 'Drafting Guidelines' (refer to Appendix B), of all engineering works provided as part of the approval, to the satisfaction of Council's General Manager or Municipal Engineer.
 - b. Supervising Engineer's certification (in the form of a signed letter) stating that the works comply with the IPWE Aust. (Tasmania Division) standard drawings and the approved plans and specifications.
 - c. Civil Engineers certification that any site fill that exceeds a depth of 300mm complies with the provisions of AS3798 'Guidelines for Earthworks for Commercial and Residential Development' 2007.

- d. Surveyor's statement that property boundary pegs are in the correct position after the completion of the construction works.
- e. If requested by the General manager a closed circuit television (CCTV) camera survey of all public stormwater pipelines within the development with a condition assessment report to be provided.
- f. Provision of operation and maintenance manuals for:
 - Stormwater detention/retention systems,
 - Gross pollutant traps, and
 - Any other items that require an operational and/or maintenance regime exceeding that normally required.
- ii. If an operation and/or maintenance manual is required, the Supervising Engineer shall arrange a joint training session with the relevant Council officer (generally Council's Works and Services Manager). The training session shall be arranged as soon as practical after commissioning.
- iii. On the basis that all of the information required by clause 6.2 (i) is provided to Council, the Council's Works and Services Manager will inspect the site with the Supervising Engineer within two (2) working days of the request.
- iv. Upon the successful completion of all mandatory audit inspections, the lodgement of the required documentation and the On Maintenance inspection, then Council will issue a Certificate of Practical Completion, which may include a list of minor defects.
- v. The satisfactory completion of the public infrastructure works shall mean when a Certificate of Practical Completion has been issued by the Municipal Engineer, or General Manager, and a bond or bank guarantee has been lodged with Council for the 12 month defects liability period.
- vi. The effective date of the Certificate of Practical Completion shall be the date of the On Maintenance inspection or the date of receipt of the completed documentation, whichever occurs first.

6.3 Defects Liability Period

- i. The subdivision must be placed onto a 12 month defects liability period in accordance with Council's Specification and Policy following the completion of the works in accordance with the approved engineering plans and permit conditions.

6.4 Off Maintenance Inspection and Handover

- i. The Supervising Engineer shall request the Council's Works and Services Manager to jointly conduct an onsite inspection to confirm that any outstanding On Maintenance items and subsequent defects are satisfactorily completed.
- ii. When all outstanding On Maintenance items and subsequent defects are satisfactorily completed, Council will issue a Certificate of Final Takeover and release any financial surety (bond) held in relation to the works.
- iii. Where outstanding or defective works (or documentation) are not completed or remedied by the subdivider within timeframes specified in written notice to do so, Council shall be entitled to draw on the bond in order to undertake such works at the developers cost, in which case only that portion of the bond remaining shall be returned to the subdivider.

6.5 Sealing Final Plans of Survey

- i. Final plans of survey shall not be sealed until all conditions on the Planning Permit have been satisfactorily completed, or a formal agreement for the deferment of the works has been entered into by the subdivider and Council.

- ii. Upon notification of the acceptance of the Sealed Plan of Survey by the Recorder of Titles, all road lots and public open space lots contained on the plan are to be transferred unencumbered to Council. All costs involved in this process are to be met by the developer, including the partial discharge of any mortgages affecting the road or public open space lots.

7 Roads

Minimum requirements for road pavement width, reservation width and footpaths are specified in Table 3, unless otherwise approved or specified by Council's Municipal Engineer. Refer to the appropriate section for further requirements as directed in the table.

Town	Zoning	Min Road Res	Min Seal Width	Cul-de-sacs	Edge Treatment	Footpaths, Accesses & Crossovers	Roadside Drainage	Power / Communications
Ouse	Village	18m	6m	To be assessed individually	Concrete K & C	Concrete	Underground	Underground unless already overhead
Wayatinah	Village	18m	6m	To be assessed individually	Concrete K & C	Concrete	Underground	Underground unless already overhead
Bothwell	Village	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Hamilton	Village	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Gretna	Village	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Derwent Bridge	Village	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Ellendale	Rural / Residential	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Fentonbury	Rural / Residential	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Westerway	Rural / Residential	20m	6m	To be assessed individually	1m Gravel Shoulders	Concrete or Gravel – to be assessed individually	Swale / table drains	Underground unless already overhead
Rural		15m	4m (Gravel)	To be assessed individually	1m Gravel Shoulders	Not Required	Table drains	Overhead
* Shack Areas	Holiday Residential	15m	4m (Gravel)	To be assessed individually	1m Gravel Shoulders	Not Applicable	Swale / table drains	Underground unless already overhead

*Includes Brady's, Bronte, Great Lake area, Arthurs Lake area, Little Pine, Penstock area, Dee Lagoon, Lake Crescent, Lake Sorell, Shannon, London Lakes

Table 3 - Minimum Requirements for Roads

7.1 General Requirements

- i. All materials used for road works are to comply with DIER's specification. Prior to or after approving plans and specifications, Council's Works and Services Manager or Municipal Engineer may require test results from a National Association of Testing Authorities approved laboratory with respect to any materials used in the road works.
- ii. Council's Works and Services Manager or Municipal Engineer may accept the use of an alternative type of material in the pavement, or wearing course, provided it is not of a lesser standard than that specified in clauses 7.2.2 or 7.3.2 and with the standard of construction also approved by the Works and Services Manager or Municipal Engineer.
- iii. All concrete for construction works shall have a minimum 28 day compressive strength of 20MPa.
- iv. Council's General Manager, Municipal Engineer or Works and Services Manager, may reject all or any part of any road works which do not comply with the relevant standard drawings and/or the approved plans and specifications and may require such road works to be completed to meet such standards and approval including the removal and replacement of all or any part of non-complying works.
- v. Where a junction is proposed with a State Road, detailed design drawings of the proposed junction are to be submitted to DIER for examination and approval and any alterations or additions as may be specified by DIER are to be incorporated.
 - The design drawings are to include all stormwater drainage provisions and flow calculations of any proposed discharge to, across or under the State Road;
 - The design needs to address the requirements of DIER's "Standard Brief for Professional Services"
- vi. The design traffic speed is to be specified by Council's General Manager or Municipal Engineer but generally is to be in accordance with local network speed limits, as approved by DIER.
- vii. Road construction standards may be varied by Council's General Manager or Municipal Engineer to incorporate Water Sensitive Urban Design principles.

7.1.1 Geometric Design

- i. Unless otherwise approved by Council's General Manager or Municipal Engineer, specifications for cul-de-sacs, Crossfall, kerb ramps and other geometric design considerations shall be made in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division) and the current geometric design and traffic engineering practice, as set out in the appropriate publications issued by Austroads.
- ii. The longitudinal gradient and gradient transitions of the pavement must comply with the current geometric design and traffic engineering practices, as set out in the appropriate publications issued by Austroads.
- iii. Road intersection corners must be splayed or rounded by chords of a circle with a radius of not less than 6.00 metres, in accordance with Sections 85(d)(viii) and 108 of the *Local Government (Building & Miscellaneous Provisions) Act 1993* and the requirements of the Council's Municipal Engineer.
- iv. In cases where the highway will become part of a bus route or may be subject to regular use by heavy vehicles, the longitudinal gradient along the pavement centre line is not to exceed 10%.

7.1.2 Pavement Design

- i. The structural design of the pavement is to be determined by an engineer after completion of geo-technical reports on the sub-grade. The geotechnical report shall:
 - Be certified by an appropriately qualified geo-tech
 - Show the location of the test results
 - Ensure test results are taken at 80m spacing and repeated at mid-spacing if the initial test show inconsistency in results

- Provide bore log for each test location
 - Provide CBR results
 - Provide Atterberg limits
- ii. The design plans and specifications submitted for approval are to be accompanied by sufficient pavement design calculations, as necessary to demonstrate that the design is appropriate. All design reference material should be specified.

7.2 Residential Streets

- i. Roadworks and drainage must be constructed in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division) and to the requirements of Council's General Manager or Municipal Engineer.
- ii. Roadworks must include -
- Compliance with Table 3, unless otherwise approved by Council's General Manager, Municipal Engineer or Works Manager.
 - Footpaths as specified in Table 3.
 - Drainage as specified in Table 3.

7.2.1 Kerb and Channel & Footpaths

- i. Kerb and channel is to be formed using a continuous forming machine and in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division). A semi-mountable kerb profile shall be specified in most circumstances, unless existing kerb needs to be matched in with and where directed by Council's General Manager, Municipal Engineer or Works Manager.
- ii. The aggregate length of highway at a grade steeper than 14% is not to exceed:
- A total length of 100m or
 - 20% of the total road length (whichever is greater)
- iii. Kerb ramps must be designed to accommodate the needs of people with disabilities in accordance with standard drawings prepared by the IPWE Aust. (Tasmania Division) and to the requirements of Council's Works and Services Manager or Municipal Engineer.
- iv. Kerb ramps shall be located to take into consideration the desired pedestrian travel path; the fence line and the appropriate traffic site distance.
- v. Where mountable or semi-mountable kerb is used in residential subdivisions, footpaths to be constructed to a driveway standard.

7.2.2 Wearing Course

- i. The carriageway surface course must be 10 mm nominal size hotmix asphalt with a minimum compacted depth of 30 mm in accordance with standard drawings and specifications prepared by the IPWE Aust. (Tasmania Division) and the requirements of Council's Municipal Engineer unless approved or otherwise specified by the Council's General Manager or Municipal Engineer. Where subject to heavy vehicles or bus traffic, the minimum compacted depth is to be increased to 50mm.

7.2.3 Residential Access

- i. A vehicle access must be provided from the road carriageway to each lot in accordance with Table 3. The access must have a minimum width of 3.6 metres at the property boundary and be located and constructed in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division) and to the satisfaction of Council's Works and Services Manager or Municipal Engineer.

- ii. All driveway carriageways providing shared access to more than one lot must be constructed in accordance with Section 107 of the Local Government (Buildings and Miscellaneous Provisions) Act 1993 and municipal standard drawings.

7.2.4 Commercial and Industrial Access

- i. An approved engineering design is required for commercial and industrial driveways detailing the structural element and geometry. Details of vehicle turning diagrams and pavement design are required.

7.3 Rural Roads

- i. Roadworks and drainage must be constructed in accordance with the standard drawings prepared by the IPWE Aust. (Tasmania Division) and to the requirements of Council's Works and Services Manager or Municipal Engineer.
- ii. Roadworks must include -
 - Compliance with Table 3, unless otherwise approved by Council's General Manager, Municipal Engineer or Works Manager.
 - Fully sealed paved and drained carriageway and 1.0 metre gravel shoulders both sides.
 - Stormwater drainage.
 - Kerb and asphalt at cul-de-sac heads.
- iii. Unless directed by Council's General Manager or Municipal Engineer, footpaths and kerb and channel are not required in rural highways.

7.3.1 Wearing Course

- i. Wearing course design for rural highways to be as required for urban highways (refer clause 7.2.2) or either of the following:
 - an application of primer followed by one application of bituminous binder and one application of aggregate; or
 - one application of bituminous binder and one application of aggregate followed by a further application of bituminous binder covered in turn by smaller sized aggregate.

7.3.2 Rural & Rural Residential Access

- i. A vehicle access must be provided from the road carriageway to each lot. Accesses must be a minimum width of 3 metres at the property boundary and located and constructed in accordance with the standards shown on standard drawings SD-1009 *Rural Roads - Typical Standard Access* and SD-1012 *Intersection and Domestic Access Sight Distance Requirements* prepared by the IPWE Aust. (Tasmania Division) and to the satisfaction of Council's Works and Services Manager or Municipal Engineer.
- ii. Where the access is onto a sealed road the access is to be sealed from the edge of the existing sealed carriageway to the property boundary.
- iii. All driveway carriageways providing shared access to more than one lot must be constructed in accordance with Section 107 of the *Local Government (Buildings and Miscellaneous Provisions) Act 1993* and municipal standard drawings.
- iv. Shared access must include a:
 - maximum grade of 1 in 5 (20%) onto the lot;
 - minimum trafficable width of 3.00 metres for up to 50 metres length and minimum 5.5 metres wide by 7.5m long passing bays at the boundary and every 50 metres along the access otherwise;

- in accordance with the construction standards shown on standard drawings SD 1009 unless approved otherwise by Council's Works and Services Manager or Municipal Engineer;
- stormwater drainage as required.

7.3.3 Road Verge, Cutting and Embankments

- i. A cutting or embankment is to have a slope no greater than those specified in the IPWE Aust. (Tasmania Division), standard drawing SD-1001 (urban roads); SD-1007 (rural roads).
- ii. Slopes flatter than those specified in the IPWE Aust. (Tasmania Division) standard drawings may be required where in the opinion of the Manager Works and Services or Municipal Engineer, the cutting or embankment constructed to the slope specified would not be stable.
- iii. If Council's Municipal Engineer determines that any highway, or land adjoining the highway, or access to that land, requires support, retaining walls, batters and/or other structures, then the such structures are to be constructed of such materials and to such design and standards as designed by the applicant's consulting engineer and approved by the General Manager or Municipal Engineer.

7.3.4 Street signs

- i. A street sign and standard must be provided and installed at all new intersections, including those adjoining existing roads and each internal intersection, at the subdivider's full cost, in accordance with the Australian Standard and the requirements of the Council's General Manager, Municipal Engineer or Works and Services Manager.

8 Stormwater

8.1 General Stormwater Management Requirements

- i. As a design principle, any obvious gully or low point of the land shall be contained within a road reservation, drainage easement or public reserve.
- ii. As a design principle, the alignment of the underground system shall be within road and public reserves. The designer shall provide justification if a portion of the major drainage network is to be located across private property.
- iii. If available, stormwater from the development must be connected to the Council's existing reticulation system using a single point of discharge, to the satisfaction of Council's Works and Services Manager or Municipal Engineer, Works Manager, or General Manager. In connecting to Council's existing reticulation system it is necessary for the applicant's design engineer to assess the impact of increased stormwater loading on downstream infrastructure (between the development and the downstream water course and outfall). Where the downstream system does not have the capacity to accept the additional load, in accordance with Council's capacity objectives (refer to clause 8.2.1) it may be necessary for the development to:
 - a. Include a stormwater detention basin/system to control the discharge rate.
 - b. Upgrade downstream infrastructure (between the development and the downstream water course and outfall) to manage the additional load above the design standard specified in that section.
- iv. The defined overland flow paths (refer to clause 8.2.1) shall have connectivity with downstream flow paths. Hydraulic calculations shall be provided to confirm that downstream flow paths have the capacity to accept the additional load from the development.
- v. Any vegetated, water sensitive urban design elements will be maintained and (reasonably) replaced (if vegetation is damaged or dead) for a minimum 6 month period from the date of planting.

8.2 Stormwater Management Plan

A Stormwater Management Plan must be submitted to and approved by Council as part of the engineering plans and documentation and will form part of the development's planning permit once approved by Council's Works and Services Manager or Municipal Engineer. The plan must include detailed design and modelling of the following:

- a. Stormwater drainage design for the development, including layout plans, design details and calculations including location of pits, pipe sizes, grades and discharge outlet details, on-site detention and retention (if required), including consideration for both the reticulated and overland stormwater systems, in accordance with Council's stormwater capacity objectives (refer clause 8.2.1).
- b. Details of specific structural and non-structural stormwater treatment and management measures to be implemented to control the pollutants in accordance with Council's stormwater quality objectives (refer 8.2.2), including their function, location, maintenance requirements, including the ten year annualised cost to Council, expected performance and ongoing management arrangements.
- c. If technically possible and where deemed appropriate by Council's General Manager or Municipal Engineer, Council may also require a stormwater reuse system to be incorporated into the development for the irrigation of land set aside for public open space, or an alternative use.

8.2.1 Capacity Objectives

- i. Council's reticulated stormwater system, consisting of property connections, inlet pits, stormwater pipes, culverts, open channels, water sensitive urban design elements, outfalls and other designed elements within the network, shall be designed and maintained to manage the 20 year Annual Recurrence Interval (ARI), unless Council's General Manager or Municipal Engineer deems that this is unachievable due to physical, economic or other factors.
- ii. The overland stormwater system shall be designed to minimise damage to property and the environment and ensure public safety, for storms up to the 100 year ARI, unless Council's Municipal Engineer deems that this is unachievable due to physical, economic or other factors.
- iii. Stormwater systems shall be designed to comply with all relevant Australian standards, the IPWE Aust. Municipal Standards (Tasmania Division), the requirements of the current edition of 'Australian Rainfall and Runoff' produced by Engineers Australia and any other standards that Council's General Manager deems as applicable.

8.2.2 Water Quality Objectives

- i. The following principles shall be used to guide water management design with respect to the preservation of environmental values:
 - a. Stormwater systems shall be designed to minimise changes in the natural water balance of the catchment, including average wet and dry weather and peak flows.
 - b. Stormwater systems shall be designed where possible to maintain or enhance water quality.
 - c. Stormwater systems shall be designed where possible to maintain existing environmental values including the preservation of riparian environments and minimisation of erosion.

8.3 Lot Connections

- i. Every new lot must be provided with a stormwater connection, located (generally) at the low point of the lot. However where the property's lowest point is adjacent to the highway and it is not practical to connect to the underground system, then pipes are to be constructed under footpaths and in some circumstances through the kerb.

- ii. Where a lot connection is allowed to the kerb, a 50mm by 100mm prefabricated metal kerb adaptor is required and the pipe must connect to the kerb and cross the footpath (where applicable) at an angle perpendicular to the road.
- iii. Connections must be sized according to the following:
 - a. Commercial and industrial lots, connections must be designed to service the ultimate potential development of the site to the satisfaction of Council's General Manager or Municipal Engineer. The ultimate potential development in most cases will be based on 80% impervious area but may be subject to variation by Council's General Manager or Municipal Engineer.
 - b. For residential subdivisions:
 - Residential lots under 700m² a 100mmØ stormwater connection is required at the low point (generally) of the lot.
 - Residential lots of 700m² or greater a 150mmØ stormwater connection is required at the low point (generally) of the lot.
 - b. For rural residential and rural subdivisions, stormwater lot connections may be exempt subject to the discretion of Council's General Manager, Municipal Engineer or Works and Services Manager.

8.4 Reticulated System

- i. Refer to Appendix C for stormwater pipe materials and products acceptable to Council.
- ii. Concrete side entry (gully) pits, conforming with the IPWE Aust. (Tasmania Division) standard drawings SD-2001; SD-2002 and SD-2003 are to be constructed at each low point, tangent point and at other locations required for the satisfactory drainage of the highway.
- iii. As a design principle, side entry pits shall not be connected directly together to form a trunk main but shall be connected offline to adjacent manholes, where the manholes are connected to form a trunk main.
- iv. The length of kerb and channel draining to an entry pit is generally not to exceed 90m and the depth of entry is generally not to exceed 1.5m. Concessions may be made along the high side of one-way Crossfall pavements.
- v. Concrete manholes conforming to XXXX are to be constructed at the end of pipelines and at locations where pipelines intersect or change direction or gradient.
- vi. The maximum distance between any two connected manholes is to be 90m.
- vii. The minimum internal diameter of pipes used for the drainage of stormwater from any highway is to be 300mm.
- viii. Council's Works and Services or Municipal Engineer may require:
 - a. Cut-off drainage to be constructed to intercept surface or ground water;
 - b. Sub-surface drainage to be constructed to intercept sub-surface water.
- ix. Any open drains or open channels likely to be accessible to the public shall be designed so that the water flow based on a 100 year ARI shall be: Velocity (m/s) x Depth (m) < 1.5
- x. Stormwater pipe velocities shall be designed in the range of 0.7m/s to 6m/s (RCP & FCR) or 10m/s (other).
- xi. All open drains or channels shall:
 - a. Be constructed of materials to minimise erosion if the velocity is in excess of 0.5m/s (bare earth) and
 - b. Have provision to generally allow vehicle access along both sides.

9 Landscaping

9.1 General Requirements

- i. All areas within the subdivision which will become future Council maintained land i.e. road reservations; public open space; reserves etc. require the preparation and approval of a landscape plan by a landscape architect or other person approved by the General Manager, and submitted to Council for endorsement
- ii. . Implementation of the approved landscape plan is required at construction of the subdivision.
- iii. All landscape plans should include the following:
 - a. General
 - Title, address of the property, applicant’s name and Landscape Architect or designer’s name and address.
 - Scale, north point and drawing date.
 - b. Existing Elements
 - Site boundaries, fences, driveways, retaining walls and other structures.
 - Trees and vegetation with a height greater than 3 metres (including plant name, trunk position and canopy spread).
 - Natural landscape features such as existing natural vegetation, rocky outcrops or water courses.
 - All services and utilities.
 - c. Proposed Elements
 - All new works including structures, fences, retaining walls, steps, paving, mounding, services, utilities, drainage system, lighting, irrigation systems, surface materials and grass areas.
 - Status of existing trees, to be retained or removed.
 - Size of street trees at planting (generally must be a minimum of 2.5m high).
- iv. Council may consider or require a higher or different standard of landscaping for either road reservations or areas of public open space than as directed by the guidelines contained herein.
- v. No plants listed as noxious weeds within Tasmania, or displaying invasive characteristics shall be used in the landscaping works.
- vi. Only suitably experienced persons shall be engaged to supervise and carry out landscaping works
- vii. The street trees, garden beds and grass will be maintained and (reasonably) replaced (if damaged or dead) for a minimum 6 month period from the date of planting.

9.2 Landscaping Class and Design Principles

Table 4 below provides guidance on Council’s expectation with regards to landscaping within road reservations and public open space in new subdivisions. The service level objectives are defined by the site’s land use. Public open space shall (generally) be categorised according to the hierarchy of its adjacent road and land use class but may in some cases be required to meet the class above. The applicant must assess each road reservation, public open space area and reserve within or adjacent to the proposed development and provide an overarching landscape plan.

Land Use	Local Roads & Cul-de-sacs
Village	A
Rural Residential	B
Holiday Residential	B/C
Rural	C

Table 4 - Landscaping Class Matrix

9.2.1 Class A

Class A areas should provide for the amenity of the local community and create an attractive streetscape for pedestrians and other road users. The minimum requirement for class A landscaping is to re-establish the site in a neat and tidy manner, levelling of top soil and sowing of pervious areas with drought tolerant and hardy grasses, such as Spanish Cocksfoot (Uplands) with a minimal standard of landscaping throughout.

For class A areas, sparse, advanced street trees maybe sufficient e.g. planted one per new lot.

Selection of an appropriate tree species shall be done in consultation with Council's Works and Services Department

9.2.2 Class B

The minimum requirement for class B landscaping is to re-establish the site in a neat and tidy manner, levelling of top soil and sow pervious areas with drought tolerant and hardy grasses such as Spanish Cocksfoot (Uplands) with a minimal standard of landscaping throughout.

Selection of an appropriate tree species shall be done in consultation with Council's Works and Services Department.

9.2.3 Class C

The minimum requirement for class C landscaping is simply to re-establish the site in a neat and tidy manner and to sow pervious areas with drought tolerant and hardy grasses such as Spanish Cocksfoot (Uplands).

Following the sub-division's defect liability period, these areas will be maintained by Council to manage the risk only.

10 Delegation

The General Manager may delegate any of the functions or responsibilities contained in the Subdivision guidelines adopted by Council.

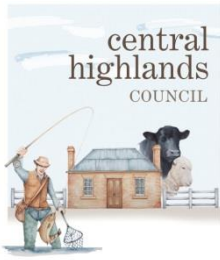
11 Further Information

If you have queries on any matter raised in these guidelines, or any technical questions then please contact Council's Development and Environmental Services Department on (03) 62595503 or by email at kbradburn@centralhighlands.tas.gov.au.

Appendices

Appendix A – Start of Works Notice

Over page



19 Alexander Street, BOTHWELL TAS 7030
 Phone: (03) 6259 5503 Fax: (03) 6259 5722
 EMAIL: kbradburn@centralhighlands.tas.gov.au

SUBDIVISION START WORKS NOTICE

This permit is required as notification to Council of the commencement of civil works associated with an approved subdivision. Prior to submitting this completed form to Council, please ensure that all necessary permits are issued and all associated engineering plans have been approved by Council's Municipal Engineer.

Sub No. _____

Stage No. (If applicable) _____

Applicant Contact Details

<i>Organisation Name:</i>			
<i>Individuals Name:</i>			
<i>Postal Address:</i>			
<i>Phone:</i>		<i>Email:</i>	

Contractor Details

<i>Organisation Name:</i>			
<i>Postal Address:</i>			
<i>Phone:</i>		<i>Email:</i>	

Proposed Works Details

<i>Start Date:</i>	
<i>Finish Date (approx):</i>	

Declaration

I/we hereby notify Council that civil works associated with this subdivision (and stage) are now commencing and declare that: -

- The information in this form is true and correct
- I/we have read all of the conditions attached to the permit and will ensure that all conditions set out are complied with.
- The works undertaken will comply with the relevant permit and standards under which they were granted.

<i>Name:</i>		<i>Signature:</i>	
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This form must be accompanied by evidence of payment of the Building and Construction Industry Training Levy where the cost of the works exceeds \$12,000.

Appendix B – Drafting Guidelines

‘As Constructed’ drawings must be prepared by a qualified and experienced civil engineer or other person approved by the Council’s General Manager or Municipal Engineer and provided in both digital and “hard copy” format.

Appendix C – Approved Materials

- i. For road material please refer to the DIER specification
- ii. For stormwater pipe material/product, the Council accepts the following:
 - uPVC
 - DICL
 - MSCL
 - Polyethylene
 - RCP
 - FRC
 - Hobas
 - Blackmax
 - Stormpro
- iii. For trenchless methods, Council accepts the following:
 - Riblok – spirally wound PVC
 - Sliplining – PVC/PE
 - Pipe Busting – PE
 - Insituliner – Structural cured in place liner
- iv. Council’s General Manager or Municipal Engineer may accept the use of alternative materials provided they are not of a lesser standard to those provided above and with the standard of construction also approved by the General Manager or Municipal Engineer.