Development manual planning scheme policy (PSP)
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SC6.4.2.1 Introduction

This section provides standards, advice, and guidelines for development applications, including well-made application details along with design requirements to assist applicants in achieving Council's design objectives.

SC6.4.2.2 Major and minor developments

(1) Definition of major developments

A major development consists of a combination of some or all of the following:

(a) more than six residential, commercial, or industrial lots; or

(b) a single or multi-storey mixed/high density dwelling unit complex of more than six dwellings; or

(c) a multi-storey development of more than three stories; or

(d) a commercial structure where the ultimate Gross Floor Area (GFA) exceeds 2,000 m^2 and is two equivalent stories or more; or

(e) a development where site filling and/or excavation exceeds 2,500 m^3; or

(f) a development where site filling impacts on a known or designated 'floodplain' and requires compensatory earthworks to cater for the flows from the defined flood event in the adjacent or nearby watercourse without increasing flood levels upstream and downstream of the development site; or

(g) a development that requires more than 300 carparking spaces.

(2) Definition of minor developments

A minor development consists of a combination of some or all of the following:

(a) more than two and less than six residential, commercial, or industrial lots; or

(b) a single storey (or higher) mixed/high density dwelling unit complex of six or less dwellings; or

(c) a multi-storey development of not more than three stories of approved use; or

(d) development where site filling and/or excavation is less than 100m^3; or

Editor's Note—where the site filling/excavation exceeds 100 m^3, but is less than 2500 m^3, the combination with other criteria will determine whether the development is classified as major.

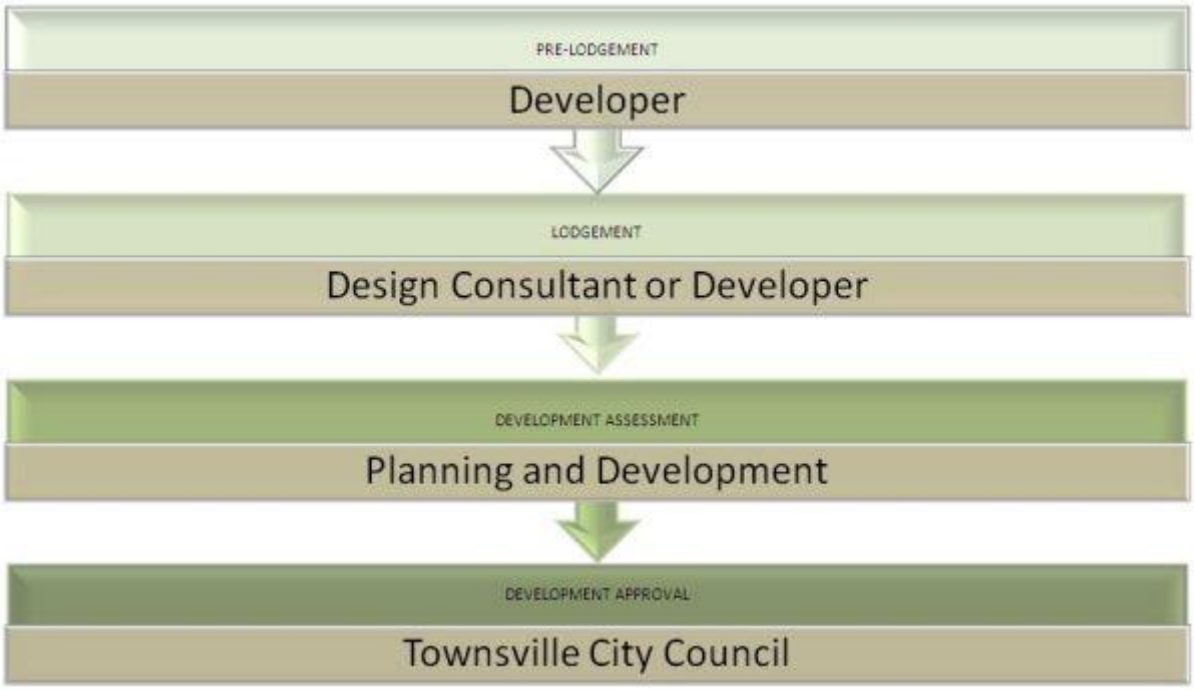
(e) a development where twenty or less carparking spaces are required.

Editor's Note—where required carparking spaces exceeds 20, but is less than 300, the combination with other criteria will determine whether the development is classified as major.

Editor's Note–where a development does not meet any or only one of the criteria listed in major or minor development above, Council retains the prerogative to determine whether the development is major or minor.

SC6.4.2.3 General procedures

Council's general procedures when lodging development applications are set out in the diagram below.



SC6.4.2.4 Pre-lodgement advice guidelines

(1) Pre-lodgement meetings and discussions

Council encourages pre-lodgement meetings to discuss development proposals prior to lodgement. Pre-lodgement meetings can comprise of informal discussions or alternatively a formal discussion can be arranged for more complex applications.

Pre-lodgement meetings are conducted by appointment only. To request a pre-lodgement meeting, the applicant must complete a Pre-Lodgement Meeting Request Form (refer to Clause SC6.4.2.12 Online Form A - Pre-lodgement Meeting Request), which can be submitted either by mail, email (developmentassessment@townsville.qld.gov.au) or to the Council Administration Building – Walker Street. For further information please visit Council's website for more information on pre-lodgement meetings.

SC6.4.2.5 Design requisites and quality assurance guidelines

(1) Engagement of appropriately qualified persons

The developer/applicant is encouraged to engage and nominate appropriately qualified consultants/individuals with the required expertise to undertake design work on their behalf. The consultants are expected to have systems in place to assure the quality of the designs and the reports that they produce. It is the consultant's responsibility to ensure that the design complies with and has satisfied all relevant Council requirements and conditions of the associated development approval.

Concept and detailed designs must comply with the relevant conditions of the development approval, Council's policies, Townsville City Plan, and relevant provisions of this Development manual planning scheme policy. All designs must be prepared and certified by an appropriately qualified professional with relevant experience.

Quality assured personnel must be:

(a) engineering works (including but not limited to geotechnical, access consultant, hydraulic, stormwater infrastructure, civil, structural, or electrical engineering) - Registered Professional Engineer of Queensland (RPEQ) as defined under the *Professional Engineers Act2002*;

(b) for urban stormwater quality and flow management

a person with relevant tertiary qualifications or equivalent, including a registered professional engineer of Queensland (RPEQ) (civil engineering, environmental engineering). Such persons may be responsible for a site stormwater quality management plan (site SQMP);

(c) for erosion and sediment control

a person who is a certified practising soil scientist (CPSS) or certified professional in erosion and sediment control (CPESC), or an RPEQ (or equivalent) with experience and training in soil science and erosion and sediment control. Such persons may be responsible for erosion and sediment control plans (ESCP). The necessary requirements (CPESC and/or RPEQ) are determined commensurate with the Erosion Hazard Assessment;

(d) for wastewater management

a person with appropriate tertiary qualifications or equivalent such as an RPEQ with experience in environmental engineering or environmental scientist (or similar) incorporating wastewater management. Such persons may be responsible for a site wastewater management plan for the design, operation, or construction of a development;

(e) for management of non-tidal artificial waterways

a person with tertiary qualifications or equivalent such as an RPEQ (environmental engineering) or environmental scientist (or similar) and experience in incorporating waterway management. Such persons may be responsible for a waterway management plan for the design, operation, or construction of a development with artificial waterways;

(f) for coastal algal blooms

a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soil nutrients, water quality, hydrology, and acid sulphate soils (for example, certified practising soil scientist or certified environmental practitioner);

(g) for acid sulphate soils

a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soils and acid sulphate soils (for example, certified practising soil scientist);

(h) landscape works

Registered Landscape Architect with the Australian Institute of Landscape Architects (AILA) or a Landscape Designer with the Landscape Design Institute (LDI);

(i) irrigation works

Certified Irrigation Designer where irrigation works are within the public realm;

(j) traffic management assessment personnel shall be TMR qualified; and

(k) audit of access plans and drawings and sign off

a qualified Access Consultant (Transport) certified with the Association of Consultants in Access Australia (ACAA).

(2) Design records and calculations

The Consultant must retain appropriate design records including calculations in a format such that they can be understood readily by design staff with no prior knowledge of the design. The design file must be maintained by the developer/applicants or the developer/applicant's consultant containing records of calculations, approvals and decisions, geotechnical data and other design data which could be relevant in reviewing aspects of the design or planning future maintenance responsibilities. Copies of records are to be made available to Council on request and without charge. Records shall reflect safety in design and future maintenance cost considerations.

(3) Council audit

Council retains the right to audit all processes and documents related to the development design. The developer/applicants and the developer/applicant's consultant must provide Council officers all reasonable assistance in inspecting records of designs submitted to Council.

SC6.4.2.6 Documentation guidelines

To further assist developers in the process of lodging development applications, well-made application checklists have been prepared by Council and the completion of a particular checklist, and submission of all relevant accompanying information, will expedite the assessment process well-made application checklists in SC6.4.2.12 below).

(1) Portable Long Service Leave (PLSL)

Development approvals for operational works cannot be issued by Council until appropriate evidence of payment of the Portable Long Service Leave fees are provided as prescribed by the *Building and Construction Industry Portable Long Service Leave Act 1991*.

(2) Certification and design reports

All designs to be accompanied with certification and design reports which must be signed by a qualified professional with relevant experience (Refer to Clause SC6.4.2.4). The certification report will comprise the certificate (SC6.4.2.12 Form A – Engineering Certification) and design report. The design report must contain documentation as required by Clause SC6.4.2.8 below.

The certification and design reports will be required with preliminary designs and will require resubmission with updates when final drawings are submitted. Certification is not required with sketch plans or concept plans.

The consultant must provide a detailed justification for each variation to or non-compliance with Council's design and construction requirements, local laws, Townsville City Plan planning scheme policies and Townsville City Plan and relevant development approval conditions, as part of the Certification Report.

(3) Design drawings and work requirements

The consultant on behalf of the Developer must present all design drawings and specifications for the development works to Council for audit purposes.

The design drawings must be complete and clearly set out to present the design concepts in such a way that the project can be understood, specified for construction and satisfactorily built. Unless noted otherwise, the submission should comprise a full set of plans for proposed in digital format correctly scaled as per Council-preferred sheet size A3).

All construction work specifications must be prepared by the consultant and submitted to Council for review, specifying workmanship standards not covered by Council's standard work requirements.

Full design drawings and work specifications covering all aspects of the proposed works must be submitted to Council for acceptance. Standard drawings and works specifications (if available) from the following sources are to be included in order of preference:

(a) Section SC6.4.3 Standard drawings;

(b) Council design and construction standards and

(c) Department of Transport and Main Roads.

All design drawings and work specifications must be certified by an appropriately qualified professional with relevant experience. Refer to Clause SC6.4.2.5.

(4) Minimum documentation required with application

The following table SC6.4.2.1 sets out the minimum documentation required to be submitted with an application.

Table SC6.4.2.1 - Minimum Documentation to be Submitted with Application

Documentation	Material Change of Use	Reconfiguring a Lot	Operational Work
Safety in design report including future maintenance considerations	NA	NA	Required
Traffic impact assessment	Required (determined by the type and scale of development)	Required (determined by the type and scale of development)	Required
Traffic management plan	NA	NA	Required, where necessary.
Public transport network including consideration for school bus network	Concept plan required	Required for staged developments.	Required
Road networks	NA	Road network (includes hierarchy, road and carriageway widths, noise impact and traffic studies).	
Pedestrian and cycle network (trunk and neighbourhood) including bicycle lanes.	Concept plan required	Required for staged developments	Required
Flood study report	Required (determined by the type and scale of development).	Required (determined by the scale of development).	Required if not presented in earlier application.
Site based stormwater management plan	Concept plan required - when stormwater quantity, quality, frequency and flood flow management or waterway stability	Concept plan required - when stormwater quantity, quality, frequency and flood flow management or	Detail plan required - when stormwater quantity, quality, frequency and flood flow

	infrastructure is provided. Detailed information on stormwater system (i.e. dimensions, levels and outlet details of detention basin) to be provided if no operational work application is required.	waterway stability infrastructure is provided.	management or waterway stability infrastructure is provided.
Erosion and sediment control plan	NA	Conceptual erosion and soil control plan needed for staged developments.	Required
Geotechnical reports	Required	Required	Required
Subgrade test results and pavement designs	NA	NA	Required
Filling and excavation plan	Concept plan required.	Concept plan required.	Detail plan required.
Inter-allotment drainage plans	Required where downstream discharge involves other private properties.	Required where downstream discharge involves other private properties.	Required where downstream discharge involves other private properties.
Roadworks and stormwater drainage designs	Concept plans required		Detail plans required
Water and Sewer modelling	May be required		Required
Water reticulation plan	Concept plan required	Concept plan required	Detailed design required
Sewerage reticulation plan	Concept plan required	Concept plan required	Detailed design required
Odour assessment report	Required		Required
Servicing details (utilities)		Required for staged developments.	Required
Conduit assessment	Required where impacting on existing conduit services and if no operational work application is required.	NA	Required, where impacting on existing conduit services
Noise and vibration reports	Required	Required	NA

Dust assessment	Required	Required	Required
Electricity reticulation plan	NA	NA	Required
Waste management plan	Concept plan required	NA	Detailed design required
Landscape site analysis	Required (if assessable development).	Required (if assessable development).	NA
Landscape concept plan	Required (if assessable development).	Required (if assessable development).	NA
Landscape detailed working drawings	NA	NA	Required where landscaping is proposed.
Landscape detailed maintenance program for on maintenance	NA	NA	Required where land or infrastructure will be managed by the local government.
Irrigation	Concept plan required		Detailed design required
Work specifications	NA	NA	Required
Certified detailed Schedule/Bill of Quantities by a suitably qualified and experienced professional	NA	NA	Required
Certification of designs	NA	NA	Required

SC6.4.2.7 Council's acceptance of design – advice

Council does not guarantee that the submitted designs for the proposed development have been checked in detail. Upon Council's acceptance of designs for the proposed development, it is assumed that the certifying professional has performed sound judgement in preparing the designs taking into consideration existing site conditions and Council requirements.

Council does not accept any responsibility for the accuracy of the submitted design and that any deficiencies and non-complying works identified by Council must be rectified at the cost of the developer, notwithstanding Council's prior acceptance of the submitted design.

If Council's audit of the design reveals the design certificate report to be inaccurate or incomplete, the submission may be returned to the consultant for resubmission. A resubmission review fee may be charged.

SC6.4.2.8 Preparation of design drawings - guidelines

The information set out in Clause SC6.4.2.11 and Clause SC6.4.2.12 should be used in the preparation of plans for each group of drawings to assist Council in the assessment process.

SC6.4.2.9 Conduit assessment

Conduit assessment of sewer and stormwater lines is required before the acceptance of these assets “on maintenance” (the defects liability period) or prior to the assessment of any development application (including a Building over Services application) which may impact upon a sewer or stormwater asset. Assessments may be required by Council prior to assessment or be conditioned by a development approval as part of construction. Inspections must be undertaken by means of closed-circuit television (CCTV) inspection and submission of the resultant video and assessment report.

Any development which proposes to construct a structure, building or undertake earthworks in the vicinity of or within the “zone of influence” of an existing conduit may be required to identify the condition of the conduit for assessment of serviceability and structural compatibility with the proposed development work. Any upgrading or replacement determined by Council will be carried out at the developer's expense prior to the commencement of any development works.

(1) CCTV inspection

General criteria for closed circuit television (CCTV) sewer and stormwater assessments for operational works/compliance permits are as follows:

(a) Sewer:

(i) Major developments

1. immediately prior to commencement of the defects liability period and following the total completion, cleaning, and testing of the asset; and

2. if defects are identified they must be rectified, and the sewer, for the entire length between the upstream and downstream maintenance holes (MH’s), must be assessed again prior to completion of the defects liability period.

(ii) Minor developments

1. systems containing two or more sewer lengths, or systems containing sewer lengths that exceed a combined service length of 60 m measured centre to centre between manholes require assessment immediately prior to commencement of the defects liability period and following the total completion and cleaning of the asset;

2. if defects are identified they must be rectified, and the sewer, for the entire length between the upstream and downstream maintenance holes (MHs), must be assessed again prior to completion of the defects liability period; and

3. where a defects liability period does not apply, CCTV assessment is mandatory prior to acceptance.

(b) Stormwater:

(i) inter-allotment systems located on private property are exempt;

(ii) rubber ringed jointed pipe systems with flexible joints immediately outside chambers (includes PVC and Polythene pipe systems) will be visually assessed and are exempt subject to the system presenting defect free;

(iii) CCTV assessment of flush end RCP pipe systems is mandatory;

(iv) major developments;

(v) Immediately prior to commencement of the defects liability period and following the total completion and cleaning of the asset; and

(vi) prior to completion of the defects liability period;

(vii) minor developments

1. systems exceeding a service length of 60 m require assessment immediately prior to commencement of the defects liability period and following the total completion and cleaning of the asset; and
2. where a defects liability period does not apply, CCTV assessment of the system is mandatory prior to acceptance.

(2) Qualification of CCTV operators and supervisors

The assessment must be undertaken by a suitably trained and qualified Contractor, in accordance with the relevant sections of the current version of Water Services Association of *Australia's Conduit Inspection Reporting code of Australia* (WSA05) and the results are to be submitted to Council in CD, DVD or any digital storage device acceptable to Council accompanied by a written condition assessment report to be approved in writing by Council prior to the issuance of any development approvals.

In the event of non-compliance in preparation and submission of the conduit assessment, council may require the developer to re-perform the inspections and re-submit. All costs incurred conducting these additional conduit assessments will be the responsibility of the Contractor.

(3) Site establishment

The Contractor is responsible for the following requirements:

(a) any necessary approvals from statutory authorities in order to complete the required work;

(b) any temporary electric light, power installations and water supply including all charges incurred;

(c) public notification if necessary
contractor must notify affected residents/adjacent property owners/commercial business owners and Council (including if the area to be closed is public open space). Additional requirements may be necessary if closures are to be over an extended period. Notification is required prior to commencement of work;

(d) plans of existing services are to be verified by the Contractor. Council does not guarantee the accuracy of the information on these plans;

(e) environmental management plan
if necessary, the Contractor must prepare and implement a site-specific environmental management plan, for inspections which would involve interference to live services e.g., sewer line which poses an environmental risk. The Plan must detail activities and measures to ensure that the inspection is performed in a manner which minimises risk of causing environmental nuisance or harm;

(f) reinstatement
clean-up, repair and reinstate any areas affected or impacted by the works, at their own cost;

(g) maintaining the service in all conduits being inspected;

(h) pipe cleaning
conduits being inspected must be sufficiently clean to allow proper visual identification of existing defects. The proper disposal of debris from the cleaning shall be the responsibility of the Contractor;

(i) traffic management
where the diversion of vehicular and pedestrian traffic is required, the Contractor is responsible for implementing an appropriate traffic management plan; and

(j) occupational health and safety
the Contractor is required to comply with all statutory and other current regulations relating to occupational health and safety.

(4) Inspection report

The production of reports (including mandatory information), detailing the condition of surveyed conduits, all coded and scored to standards that satisfy the requirements of current WSA 05 Code.

(5) Inspection software

The preferred software for use in reporting on conduit inspections is the current version of WinCam, set up to report as per the current WSA 05 code. If a Contractor proposes to use alternative software, a full detail of the software must be provided to Council for approval which includes the capabilities must be provided and must be fully compatible with the WinCam software.

(6) Data ownership

Full ownership of the survey and report data including intellectual property rights to the digital visual records and its contents must be with Council.

SC6.4.2.10 Conceptual and preliminary erosion and sediment control plans

Soil disturbance is inevitable in any development; it is fundamental to develop measures to reduce the impact of soil erosion in every stage of construction to an acceptable level of sediments leaving the development site.

For reconfiguring a lot, material change of use, operational works applications, depending on the scope of development, associated environmental impacts, site constraints (E.g., land use, lot layout site topography, proximity to bodies of water) and other factors, the developer should identify the erosion risk level of the proposed development, which can be determined by assessing the erosion hazard of the intended development site outlined in Sections SC6.4.8 Stormwater management, and SC6.4.10 Stormwater quality and– *Erosion Hazard Assessment* of the International Erosion Control Association's *Best Practice Erosion and Sediment Control (IECA BPESC).*

Where a development site of a development application was assessed as being a high-risk site, the developer should provide a conceptual erosion and sediment control plan (CESCP). The conceptual document should take into consideration the key principles of erosion and sediment control detailed in this clause, and the site planning aspects and guideline in preparing conceptual plans in Sections SC6.4.8 Stormwater management, and SC4.6.10 Stormwater quality.

Where a development site was assessed as being a low-risk site and where a CESP has been accepted by Council, a preliminary erosion and sediment control plan (PESCP) must be submitted to Council as part of the operational works or compliance applications. The PESCP must be prepared in accordance with the design standards and technique selection outlined particularly in:

(1) Chapter 2 – Principles of erosion and sediment control;

(2) Chapter 4 – Design standards and technique selection;

(3) Chapter 5 – Preparation of plans; and

(4) also including the appropriate Model Code of Practice and Specific Guidelines in:

(a) Appendix G – Model code of practice;

(b) Appendix H – Building sites;

(c) Appendix I – Instream works;

(d) Appendix J – Road and rail construction;

(e) Appendix K – Access tracks and trails; and

(f) Appendix L – Installation of services of *IECA BPESC.*

During the pre-start meeting, the applicability and appropriateness of the PESCP will be reviewed on-site and revisions will be required if necessary.

For general guidance in implementation of erosion and soil control plan refer to Sections SC6.4.8 Stormwater management, and SC6.4.10 Stormwater quality.

SC6.4.2.11 Details on drawings guidelines

(1) General requirements guidelines

(a) The information shown on the drawings must be logically collected on discrete sheets to avoid illogical and onerous effort in cross referencing between sheets in order to find information. This policy section details minimal information requirements for plans and drawings submitted for assessment.

(b) Drawings should not be overcrowded with information and should not rely on colour printing or colour wash to impart information.

(c) The preferred submission method is uploading to the Townsville Online Lodgement System (TOLS). The preferred sheet sizes of drawing sheets are:

(i) A1 size (841 mm x 594 mm); and

(ii) A3 size (420 mm x 297 mm).

(d) The preferred scales for use should generally conform with the recommendations of AS 1100.101 *Technical Drawing – General principles*. Generally, the following scales are to be used 1:10, 1:20, 1:50 and multiples of 10 of these scales.

(e) Electronic and hard copies of drawings should be true to scale A1 size sheets and be suitable for black and white printing, copying and photo reduction to A3 size without loss of clarity.

(f) The drafting should be of a standard generally in accordance with the requirements of AS 1100.

(g) Title block

All drawings must, within the boundaries of the title block, clearly indicate the following:

(i) project title e.g., estate name (if any);

(ii) real property description;

(iii) locality;

(iv) developer's name;

(v) details on contents of drawings e.g., sewer reticulation;

(vi) scales – bar scales;

(vii) plan and sheet number;

(viii) schedule and date of revisions;

(ix) survey datum;

(x) street names;

(xi) date of initial issue;

(xii) legend and north point; and

(xiii) signed design certification.

(h) Typical scales

The following scales are suggested, but these may be varied as appropriate to the works concerned:

(i) plans – 1:1000 (rural) and 1:500 (urban);

(ii) longitudinal section horizontal – 1:1000 (rural) and 1:500 (urban);

(iii) longitudinal section vertical – 1:100 (rural) and 1:50 (urban); and

(iv) intersection details - 1:250 or 1:100; and cross sections – 1:100.

(i) Survey datum

Level information should be referenced to the Australian Height Datum (AHD). Position coordinates should be tied to the GDA94 datum based on the Mapping Grid of Australia (MGA) coordinate system.

(j) Dimensioning units

All units should be expressed in metric units. Linear dimensions on all roadworks plans, with the exemption of some details of small structures and standard details which may be in millimetres.

(i) Chainages

Chainages on plans should be expressed to three decimal places of a metre e.g., 0.123 m.

(ii) Cross section intervals

Road cross sections should be provided at 20 metre intervals, with further subdivision to 10 metre or 5 metre intervals where necessary due to horizontal or vertical curvatures.

(iii) Grades

Road and pipe grades should be shown to three significant figures in percentage e.g., 1.234%.

(2) Layout and stage plan guidelines

(a) for large developments, the layout plan shows the relationship of all new roads to each other, and to existing roads adjoining the development;

(b) where development is planned in stages, the boundaries of proposed stages are shown on the plan, and the stages identified by numbering;

(c) existing and proposed streets which are adjacent to or fronting the proposal are included on the layout plans;

(d) all services, natural features, significant trees and the like are shown on existing road reserves; and

(e) details of the permanent survey mark, including the AHD level from which the levels were transferred, are included.

(3) Roadworks and associated drainage drawings

Plans or drawings should include the following details:

(a) road reserve boundaries;

(b) lot boundaries, both existing and proposed (levels provided at each boundary corner) and easements;

(c) centreline or other construction line;

(d) chainages on centreline or construction line or set out co-ordinates;

(e) bearings of the centreline or construction line;

(f) offsets (in tabular form) if the construction line is not the centreline;

(g) tangent point chainages or co-ordinates of each curve;

(h) radius and tangent length and superelevation of each curve;

(i) road reserve boundaries, centreline, and bearing of each intersecting road;

(j) chainage or co-ordinates of the intersection point of road centrelines;

(k) kerb lip lines, kerb types, kerb face, setout radii and chainage or co-ordinates of all tangent points of kerb face setout lines;

(l) edge of pavement, where no kerb and channel is proposed;

(m) dimensioned road reserve, verge, pathways, and cycleways including bicycle lanes, (trunk, neighbourhood/local), concrete footpath and pavement widths, where these differ from the standard cross section;

(n) location and details of signs and road markings proposed;

(o) drain line locations (including inter-allotment drainage), diameters and class of pipes or size of box culverts, open drains and easements and invert levels;

(p) the defined flood event levels;

(q) manhole locations, chainage and offset or co-ordinates and invert and kerb levels;

(r) stormwater flow arrows;

(s) inlet pit and manhole locations tabulated to include type, type of jointing chainage;

(t) culvert/channel and other structures details;

(u) location of existing utilities or other existing works within the site;

(v) limits and levels of lot filling or grading;

(w) cut or fill depths and earthwork quantities;

(x) co-ordinates of all set out points;

(y) retaining wall (including details);

(z) location and levels of benchmarks and reference pegs;

(aa) service conduit locations;

(bb) details of all existing construction on or adjoining the proposed works; and

(cc) longitudinal and cross sections with invert levels and the required flood levels including existing and proposed surface contours of constructed or natural open channels (E.g., table drains) and waterways (including landscape, construction details and maintenance).

(dd) detail plans of intersections, turnaround areas, property accesses, cul-de-sac, traffic calming (LATM) devices (if required) and the like:

  (i) intersection detail plans include all relevant information required for plans together with additional details such as tangent point chainages, kerb lip levels on all kerb returns, pavement contours and channelisation works; and

  (ii) the plans should also include relevant information as listed for standard cross section.

(ee) longitudinal sections of roads

  the longitudinal section of each road includes:

  (i) chainages;

(ii) datum RL, existing surface, and peg levels;

(iii) design road centreline and lip of kerb levels and grades;

(iv) cut or fill depths and earthwork quantities;

(v) design grades, length, and radii of vertical curves;

(vi) chainage and level of grade intersection points and tangent points of vertical curves;

(vii) sight distance diagram for each direction of travel for collector or higher order roads only;

(viii) line marking (where applicable);

(ix) details of superelevation (where possible);

(x) drainage lines and manholes intersecting centre line;

(xi) table drain grading and levels where no kerb and channel;

(xii) sight distance diagram for each direction of travel;

(xiii) horizontal curve details;

(xiv) existing and proposed services; and

(xv) pavement design and design speed.

(ff) type cross sections of road

A standard cross section is shown for each road, including:

(i) road reserve width;

(ii) pavement widths (lip to lip dimension);

(iii) road verge widths;

(iv) concrete pathways and cycleways including bicycle lanes (trunk, neighbourhood/local);

(v) crossfalls of pavement and road verges;

(vi) pavement depth (including subsoil drainage);

(vii) type of kerb and channel;

(viii) type of pavement surfacing;

(ix) batter slopes; and

(x) pegged or shift centre line.

(gg) cross sections of roads

a cross section is shown for each chainage on each road.

(i) a cross section should be shown at a minimum spacing of 20 m. Where roads are in steep terrain, cross sections may be required at closer intervals. Cross sections are to be extended into the allotments for the limit of batters. The cross-section plans are to include:

1. road reserve boundaries;

2. pavement centreline, and shift centre line or other construction lines;

3. natural surface;

4. design cross section;

5. crossfall of pavement and road verge, pavement and road verge widths, and pavement depths, wherever these differ from the standard cross section, E.g., superelevation and curve widening;

6. pavement and subsoil drainage;

7. chainages, and

8. the cross-section plans are to include pathways and/or cycleways on the nature strip, including bicycle lanes on-road.

(ii) when existing bitumen sealed roads are widened, cross sections include the full existing sealed pavement cross section at not more than 10 m intervals:

1. each cross section shows the percentage crossfall on the existing bitumen surface and the design crossfall to the lip of the proposed kerb and channel; and

2. notations on drawings also require the Supervising Engineer to check for any errors between the design and the set out of the kerb and channel before the kerb and channel is constructed.

(hh) traffic signs and pavement markings plan

all required signage and pavement markings (including temporary works) are to be provided in accordance with the current version of the MUTCD, Queensland;

(ii) longitudinal sections of drain lines

a longitudinal section of each drain line should be drawn along the centre line of the drain line and should show:

(i) chainages;

(ii) existing and proposed surface levels;

(iii) design invert levels, hydraulic grade lines, velocity, discharge;

(iv) manhole chainages, inlet and outlet invert levels, and finished surface levels of structures;

(v) distances between manholes;

(vi) grade in percent, diameter, type and class of each pipe or size of each box;

(vii) references to the Council's current standard drawings;

(viii) class of each pipe, length, and type of pipe;

(ix) existing and proposed service locations and levels;

(x) all piped drain lines and constructed or natural channels used to convey run-off as part of the development are shown on drawings;

(xi) longitudinal sections and cross sections of all channels show the calculated hydraulic grade line for the design frequency; and

(xii) piped drain lines are included either on the road longitudinal sections where applicable or detailed separately.

(jj) stormwater drainage catchment plan

the catchment plans should indicate all catchments including external catchments contributing to the stormwater drainage design and the following:

(i) full external catchment;

(ii) development layout plan showing the roads and allotment boundaries;

(iii) existing and finished surface contours (in different line types). Contour intervals are to be sufficient to enable sub-catchments to be defined;

(iv) contours must be extended external to the site to enable the limits of all external catchments to be fully defined;

(v) sub-catchment boundaries, labels and areas;

(vi) location of drain lines, manholes, inlet/gully pits, outlets, open drains etc; and

(vii) labelling of stormwater structures.

(4) Pathways and cycleways drawings guidelines

(a) All plans for pathways and/or cycleways on the nature strip, including bicycle lanes on-road (trunk and neighbourhood/local) networks are to be presented at the reduction ratio 1:500 minimum or 1:200 preferable. The plans are to include details of the signs and pavement markings to be used and any barriers, fences, holding rails, ramps, etc. The landscaping treatment should also be included in the plans.

(b) The cycleways on the nature strip, including bicycle lanes on-road plan sheet to be provided, can be incorporated into the road plan where clarity permits. Specific details are to be provided at reduction ratio 1:200.

(c) Longitudinal sections will be required for all off-road pathways where grades are greater than or equal to 3%.

(d) Longitudinal sections will have reduction ratios of 1:500 horizontal and 1:50 vertical.

(e) Cross sections will be presented at 1:100 reduction ratio (natural) and transition tables will be required where cross falls vary, or superelevation is provided.

(f) A typical cross section will be detailed to indicate pavement materials and layer depths.

(5) Sewerage drawings guidelines

(a) Sewerage layout plan

The sewerage layout plan includes:

For development consisting of two or more stages, a preliminary master layout plan showing boundaries of all stages. The plan shows proposed locations and sizes of all trunk mains, pumping stations and sewage treatment plants, where relevant.

In addition, the sewerage layout includes:

(i) boundary of the development, lot layout and numbers, easements (if required), finished surface contours;

(ii) non-sewered areas;

(iii) references to the Council's current standard drawings;

(iv) location, grades of all sewer lines, manholes (numbered) and other services where they cross;

(v) indicate trunk mains;

(vi) pumping stations, maintenance structure numbers and sewer diameters;

(vii) site plan for sewerage pump stations; and

(viii) details of water and electricity supply, landscaping, access and control buildings, if applicable.

(b) Sewerage longitudinal sections

The longitudinal section of each sewer line includes:

(i) upstream and downstream invert levels;

(ii) existing and finished surface levels, depth to invert;

(iii) grade expressed as 1 in XX;

(iv) diameter, type and class of pipe;

(v) chainage;

(vi) distance between maintenance structures;

(vii) concrete stops, where required;

(viii) manhole and/or shaft number;

(ix) manhole type and drop type;

(x) location and depth of all underground services; and

(xi) the design invert level of each house connection branch, type, and invert level of the branch.

(6) Water drawings guidelines

(a) Water reticulation layout plan for developments consisting of two or more stages, a master layout plan showing stage boundaries should be provided. Locations of existing or proposed trunk mains, treatment plants or reservoirs are to be shown on plan.

In addition, a water reticulation layout plan showing:

(i) pipe location;

(ii) pipe material, diameter, type, class, and joints, including fittings;

(iii) fire hydrant, valve, bends, junction locations;

(iv) size and location of all concrete anchor blocks, thrust blocks, and diaphragm walls;

(v) cut-in details;

(vi) crossroad conduit locations;

(vii) specific notes and instructions;

(viii) boundary of the development, lot layout and numbers, including easements;

(ix) proposed location for any pump stations, showing access details;

(x) references to Council's current standard drawings (Section SC6.4.3 Standard drawings);

(xi) dimension from road alignment boundary/property boundary;

(xii) minimum clearances to other services;

(xiii) pipe and fitting, internal and external protection details including at road pavement crossings;

(xiv) trench cross section detail showing the pipes as well as bedding and filling materials for each size and type of pipe;

(xv) pump curves if appropriate;

(xvi) complete pipe work and structural details of any pump stations, including complete details of valves and other fittings and electrical details; and

(xvii) technical specifications for pumps and pump stations.

(7) Landscape drawings guidelines

(a) Applications including landscape works, detailed plans and documentation containing the following minimum amount of information to be provided, as applicable and in support of the proposal:

(i) Demonstration of design preparation and certification by qualified personnel (refer to Clause SC6.4.2.4).

(ii) Landscape plans, providing the following minimum amount of information, as applicable:

1. specification notes for plant establishment period and maintenance;
2. existing site information, boundaries, contours, underground/overhead services, easements, drainage lines, or the like;
3. adjoining structures that overshadow the site;
4. details of protected vegetation, significant trees that are proposed for retention and trees proposed for removal due to the development;
5. the canopy height and spread of any major tree or building footprint on adjoining property which the proposed development may affect in any way. The incorporation of a qualified arborist's findings may be relevant where adjoining tree root zones or canopy extends into the development site;
6. specification notes either on the drawings or in an associated report that adequately outlines the quality of construction materials, and all other relevant information;
7. proposed location of buildings/structures including finished floor levels;
8. roadways, car parks, footpaths, driveways with description of materials and finishes;
9. all areas and their proposed treatment such as surface treatments, planting layout, planting schedule, including botanical names, stock sizes, quantities, staking and planting details;
10. fences and screens indicating materials, heights, and construction details;
11. location and details of street or park furniture, fixtures, and lighting;
12. indicative cross-sections of important features or areas of the site such as entrances, waterways and retaining walls;
13. details of irrigation system;
14. proposed design levels and original ground levels/contours;
15. design details and materials of all surfaces, retaining walls, edging, embankments, furniture, planting, lighting, and other structures including entry statements;
16. typical cross sections through the site;
17. construction details for planting, paving, edging and retaining structures, and
18. design details of vehicle/pedestrian/cyclist line of sight, CPTED, and correct placement of vegetation at intersections, including consideration of clear zones, shared areas, and *Dividing Fences Act*.

(iii) Landscape statement of intent, describing:

1. how the proposed landscaping meets the intent of the (Section SC6.4.12 Landscaping and open space policy);
2. how the proposed landscaping addresses the sites opportunities and constraints; and
3. the underpinning concepts incorporated into the landscape design and how these relate to and deliver cost-effective sustainable outcomes.

(iv) Locality map illustrating surrounding reserves/natural areas, roads and local features.

(v) Existing site conditions and base information including:

1. site boundaries, levels, and contours;
2. description and location of built elements, including “off street carparking”;
3. site analysis identifying opportunities and constraints;
4. description of all remnant vegetation present and any landforms (for example dunes, gullies, wetlands, waterways, rock formations);
5. location of existing trees and identified vegetation to be retained including Vegetation Protection Zone/s and protection and management provisions as per Clause SC6.4.23.1 (4)(s) Work adjacent to trees and protection of environmentally significant vegetation;
6. canopy height and spread of any major tree or building footprint on adjoining property which the proposed development may affect in any way. The incorporation of a qualified arborist’s findings and implementation Vegetation Protection Zone of may be relevant where adjoining tree root zones or canopy extends into the development site;
7. location of existing trees and identified vegetation for removal;
8. existing driveways, footpaths, adjoining driveways etc. including finished surface/s;
9. adjoining structures that overshadow the site;
10. significant features pertaining to the application E.g., the location of waste collection areas;
11. existing grading and drainage in relation to the landscaping (overland flows to be identified) with inlet and discharge points clearly shown; and
12. underground and overhead services (water, power, telecom and gas) easements and drainage lines.

(vi) Landscape details and schedules including:

1. proposed design levels and original ground levels/contours;
2. typical cross sections through the site including surface grades;
3. method of erosion control for slopes steeper than 1:4;
4. grading and drainage in relation to the landscaping (overland flows to be identified) including surface and subsurface drainage, collection points, and discharge points clearly shown;
5. surface treatment for hardscape areas including accurate location, dimensions, construction notes, details and finishes of concrete footpaths, paving, roadways, car parks, driveways, boardwalks and the like;
6. existing and proposed levels of building slab, hard surfaces, drainage grates and landscaped areas, especially adjacent to trees to be retained;
7. indicative cross-sections of important features or areas of the site such as entrances, waterways and retaining walls;
8. location and details of furniture, fixtures, and lighting, where applicable;
9. fencing and screening locations including height, material, and finish, to boundaries and pool area (if applicable);
10. details and soil depth of planter boxes and podiums including inlet and discharge points for drainage;
11. location, dimensions and construction details for any other proposed works or structures or external elements;

12. calculation of the square metre area of landscape and recreation area;
13. surface treatment for all softscape areas including accurate location, dimensions, planting notes, details and methods of establishment or transplanting for garden beds, lawn areas, and other softscape elements;
14. planting bed preparation details/notes including excavation, cultivation, imported topsoil depths, mulch type and depth, fertiliser or soil additive type and application rate where the Council specification is not being applied;
15. planting plan including planting layout, plant code, stock sizes, quantities, staking and planting details;
16. plant schedule containing plant code, plant species, location, quantity and spacing and size of container (and approximate size of the plant if requested as part of a condition) as per Table SC6.4.2.2 below;

Table SC6.4.2.2 - Example of Plant Schedule

Plant code	Plant name	Location	Qty	Spacing	Container size
1	Rhoeo spathacea	Garden 1	30	500mm centres	140mm
2	Carpentaria acuminata	Garden 2	3	As per plan	25 Litre
3	Callistemon Capt Cook	Garden 1 & 2	10	1 metre centres	150mm

17. specification notes (either on the drawings or in an associated report) that adequately outline the quality of construction materials, and all other relevant information; and
18. specification notes for the plant establishment period and maintenance including responsibility for plant replacement and maintenance.

(b) For public open space, streetscaping or works that will become Council assets, Council may request more detailed information including:

(i) general details such as:

1. demonstration of design preparation and certification by qualified personnel (see Clause SC6.4.2.5);
2. designer’s name and/or company;
3. drafter’s name and/or company; and
4. surveyor’s name and/or company.

(ii) additional details pertaining to open space or streetscaping (existing and proposed) including but not limited to:

1. geotechnical and soil test results;
2. site plan, including relationship to existing infrastructure and details and responsibilities relating to removal or modification of Council assets;
3. details of type, manufacturer, materiality, and warranty of furniture, equipment, and structures (such as play equipment, park furniture, shade shelters) including compliance with relevant standards where applicable;
4. the location and details of any stormwater quality management infrastructure to be constructed including maintenance access to the infrastructure;
5. calculation of the square metre area of landscaping to be planted, broken down into turfed and mulched and planted areas;

6. other works proposed in the location/public open space, which do not form part of the detailed landscape plan, but may impact the landscape works or Council assets (such as vegetation management, rehabilitation, and environmental management plans);

7. the location and details of any stormwater discharge through or into a public open space or waterway; and

8. where plantings are proposed in the road reserve, the provision of a plan showing an accurate footprint, including trunk diameter (at 1.2 m from ground level) and canopy spread of all existing trees and expected diameter at maturity for proposed street trees adjacent to the property and roads concerned, including any trees that are proposed to be removed.

(iii) maintenance plan pertaining to ongoing maintenance of public open space infrastructure or streetscaping, including but not limited to:

1. schedule that lists the assets and associated maintenance activities, including locations, season of visit, schedule frequency and number of visits per year;

2. statement demonstrating alignment with Council public open space management specifications;

3. Bill of Quantities (BOQ) that identifies the relevant types and quantities of each asset;

4. detailed specifications for specialist activities and/or infrastructure including, but not limited to, playground and fitness equipment, public art, ablution facilities, water features, stormwater quality infrastructure, bridges, and revegetation areas;

5. that the landscape maintenance plan has been prepared by a suitably qualified horticulturist or landscape designer (or irrigation designer for any irrigation system component of the landscape management plan); and

6. an approved traffic management plan relating to all ongoing maintenance activities that will be required within the road reserve or require ongoing traffic management.

(iv) other applicable (written) approvals, including but not limited to:

1. asset owner approval of works, including buildings and structure, where the works are within a designated parkland or affecting other Council assets; and

2. all other approvals or certifications necessary for the completion of works in accordance with the Laws of Australia, Laws of the State of Queensland, Townsville City Council Local Laws and Ordinances.

(8) Irrigation drawings guidelines

(a) For all irrigation works, detailed plans and documentation containing the following minimum amount of information are to be provided, as applicable:

(i) standard plan legend as shown in Section SC6.4.3 Standard drawings (Irrigation drawings);

Editor's Note - The symbols and line types shown in the legend are the acceptable convention for design plans to be used to represent the components of the design. Additional symbols and line types may be introduced provided they are shown in the legend on the drawing.

(ii) valve key displaying the relevant information as shown in Section SC6.4.3 Standard drawings (Irrigation drawings);

(iii) sprinkler key displaying the relevant information as shown in Section SC6.4.3 Standard drawings (Irrigation drawings);

(iv) locality plan outlining the location of the site appropriately labelled with the suburb and street names;

(v) name of all adjacent roadways;

(vi) location of water meter, backflow device, automatic controller, valve boxes;

(vii) details of irrigation system and connection (town supply or bore water);

(viii) irrigation design data displaying the relevant information as shown in Section SC6.4.3 Standard drawings (Irrigation drawings);

(ix) irrigation cabling/wiring schedule displaying the relevant information as shown in Section SC6.4.3 Standard drawings (Irrigation drawings); and

(x) design notes detailing relevant design criteria e.g., Sprinkler Type A is to be Hunter PGP; all Solenoid valves are to be Hunter ICV; descriptions of the symbols and line types used from the plan legend.

(b) For all irrigation in public open space works, streetscapes or works that will become Council assets, Council may request more detailed information in addition to the general irrigation works requirements previously outlined, including:

(i) general details such as:

1. demonstration of irrigation design preparation and certification by qualified personnel being a Certified Irrigation Designer or Certified Irrigation Agronomist including certification number;
2. designers name and/or company;
3. drafters name and/or company; and
4. surveyors name and/or company;

(ii) additional details pertaining to irrigation within public open space or streetscapes (existing and proposed) including but not limited to:

1. details and responsibilities relating to removal or modification of Council's irrigation assets;
2. details of type, manufacturer, materiality, and warranty of irrigation system component including compliance with relevant standards where applicable;
3. the location and details of any irrigation associated with stormwater quality management infrastructure to be constructed including maintenance activities and access to the irrigation infrastructure;
4. calculation of the square metre areas of irrigation against the irrigation system type and profile levels;
5. other works proposed in the location/public open space, which do not form part of the detailed irrigation plan, but may impact the irrigation works or council's assets; and
6. where irrigation is proposed in the road reserve, the inclusion of offset details from lanes of traffic to irrigation infrastructure;

(iii) maintenance plan pertaining to ongoing maintenance of irrigation infrastructure or streetscaping, including but not limited to:

1. leak and blockage checks in irrigation lines and emitters;
2. reprogramming the irrigation controller and restationing of emitters as plants grow, die out and are replaced;
3. inspection of moisture sensors;
4. maintenance of tanks and cisterns;

5. checking of water pumps; and
6. an approved traffic management plan relating to all ongoing maintenance activities that will be required within the road reserve or require ongoing traffic management; and

(iv) other applicable (written) approvals, including but not limited to:

1. asset owner approval of works, where the works are will affect Council's irrigation systems or other Council assets; and
2. all other approvals or certifications necessary for the completion of works in accordance with the Laws of Australia, Laws of the State of Queensland, Council Local Laws.

SC6.4.2.12 Attachments, forms and checklists

Online Form A - Pre-Lodgement Meeting Request Form

Click here to view Pre-Lodgement Meeting Request Form.

Form A – Engineering Certification

Click here to view Certification Report

Properly made / well-made application checklists

List of Checklists	To obtain a copy of the form.
Checklist A - Material Change of use	Click here
Checklist B – Reconfiguring a lot	Click here
Checklist C - Operational Works	Click here
Checklist D – Compliance Assessment	Click here

Design Checklists

List of Checklists	To obtain a copy of the form.
Checklist E- Base Plot of Existing Features	Click here
Checklist F - Horizontal Road Alignment	Click here
Checklist G - Vertical Road Alignment	Click here
Checklist H - Road Cross Sections	Click here
Checklist I - Road and Inter-Allotment Drainage	Click here
Checklist J - Signs and Markings	Click here
Checklist K - Pavement Design	Click here
Checklist L - Bridge and Major Culvert Design	Click here
Checklist M - Landscape and Irrigation Plans	Click here
Checklist N - Erosion and Sedimentation Control Plans	Click here
Checklist O - QAF0476 Sewage Pump Station and Pressure Main	Click here
Checklist P - QAF0477 Sewer Reticulation	Click here
Checklist Q - QAF0478 Water Reticulation	Click here
Checklist R - QAF0479 Water and Sewer Model	Click here

Checklist S – QAF0480 Public Transport	Click here