

PLANNING SCHEME POLICY

SITE REGRADING



Mackay Region
PLANNING SCHEME

Planning scheme policy – site regrading

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Amendment history

This planning scheme policy commenced on 24 July 2017 as part of the Mackay Region Planning Scheme 2017. Amendments since this date are listed in the below table.

Version number	Amendment title	Summary of amendment	Date adopted and commenced
1.1	Planning scheme policy amendment 3	This amendment updated references, standards, and requirements to reflect modern practice.	Adopted 10 February 2021 Commenced 1 March 2021
1.0	Planning scheme administrative amendment 6, and Planning scheme policy administrative amendment 1	This amendment removed the planning scheme policies from Schedule 6 of the Mackay Region Planning Scheme 2017 and placed them in individual PDFs on Council's website. This amendment introduced standardised formatting, introductory sections and explanatory information regarding intent and legislative relationship for this planning scheme policy. It also updated numbering and cross references.	Adopted 11 December 2019 Commenced 3 February 2020

1 Introduction

1.1 Application

This planning scheme policy supports the Mackay Region Planning Scheme 2017 by providing information on: how to achieve compliance with assessment benchmarks; supporting information/studies required; and/or actions required under the development assessment process. This planning scheme policy has been made by Mackay Regional Council in accordance with Chapter 2, Part 3, Division 2 of the *Planning Act 2016*.

1.2 Relationship with planning scheme

Mackay Region Planning Scheme 2017 refers to this planning scheme policy in assessment benchmarks in the following code/s or any other relevant part of the scheme:

- (a) Table 9.4.1.3.A – General development requirements code

1.3 Purpose

The purpose of this planning scheme policy is to:

1. Set out requirements for site regrading in Council works and land development and subdivision works to be approved by Council.
2. Assist the Designer in achieving:
 - (a) efficient and economical design;
 - (b) enhancement of the environmental character of the site whilst maintaining the natural features of the site;
 - (c) provision of safe conditions for construction commensurate with the proposed purpose of the works; and
 - (d) minimal impact on adjoining properties and other works.

The scope of this planning scheme policy assumes that the Designer is familiar with requirements cited in the various construction specifications, specifically those related to earthworks, clearing and grubbing, erosion and sedimentation.

Additionally, the Designer will need to make reference to Planning scheme policy – geometric road design, Planning scheme policy – healthy waters and Planning scheme policy – stormwater drainage design.

1.4 Referenced documents

- (a) Design specifications:
 - (i) Planning scheme policy – geometric road design;
 - (ii) Planning scheme policy – healthy waters;
 - (iii) Planning scheme policy – stormwater drainage design;
 - (iv) Planning scheme policy – landscape;
 - (v) Standard drawings – various;
 - (vi) Construction specification C211 – Control of erosion and sedimentation
 - (vii) Construction specification C212 – Clearing and grubbing
 - (viii) Construction specification C213 – Earthworks
 - (ix) Construction specification C273 – Landscaping
- (b) DTMR Specifications
 - MRTS03 Drainage, Retaining Structures and Protective Treatments
 - MRTS04 General Earthworks

MRTS06 Reinforced Soil Structures
MRTS15 Noise Fences
MRTS16 Landscape and Revegetation Works
MRTS27 Geotextiles (Separation and Filtration)
MRTS28 Contractor's Site Facilities and Camp
MRTS51 Environmental Management
MRTS52 Erosion and Sediment Control
MRTS100 High Strength Geosynthetic Reinforcement in Road Embankments
DTMR Standard Drawings

- (c) MRC Supplementary Specifications -
https://www.mackay.qld.gov.au/business/planning_and_development/design_and_construction_requirements/design_guidelines2
- (d) Australian Standards:
 - (i) AS3798 – Guidelines on earthworks for commercial and residential developments
 - (ii) AS4970 – The protection of trees on development sites
 - (iii) AS4373 – Pruning of Amenity trees
 - (iv) AS4678 - Earth Retaining structures
- (e) Queensland authorities:
 - (i) State Planning Policy
- (f) Council documents
 - (i) External Documents Register -
https://www.mackay.qld.gov.au/_data/assets/pdf_file/0003/253380/External_Document_Registry_for_Technical_Services_2019_002.pdf
 - (ii) Drawings -
https://www.mackay.qld.gov.au/business/planning_and_development/design_and_construction_requirements/standard_drawings/drainage

1.5 Site regrading concept

Areas of a site proposed for building or recreational purposes may not be suitable in their natural state for their intended function without improvement works to:

- (a) address flooding and drainage issues;
- (b) fill gullies or create emergency flow paths after underground stormwater piping has been installed;
- (c) allow improved runoff from flat ground; and
- (d) allow effective recreational use or give reasonable access.

Earthworks, with the exception of those considered acceptable development under section 5.8 of the MRPS 2017, are not permitted until a full assessment has been carried out by a suitably qualified Registered Professional Engineer of Queensland (RPEQ) to determine the effect of the work and the control measures required to mitigate disruptions to the following:

- a) local drainage patterns;
- b) existing drainage systems;
- c) effect on adjacent properties;
- d) retaining wall requirements;
- e) existing soil/land stability;
- f) effect on existing vegetation; and
- g) changes to existing groundwater levels and patterns.

Where natural surface levels are above the Defined Flood Event (DFE) or the Defined Storm Tide Event (DSTE) excavation to lower levels will not be permitted unless evidence can be provided that the excavated area remains free draining..

Filling of land below the DFE or DSTE will only be permitted where justification is provided to Council that:

- (a) the filling will not have a detrimental effect on other land;
- (b) the filling will not affect overland flow paths for stormwater; or
- (c) that the proposed filling is in the public interest to an extent that outweighs any detrimental effects on other lands.

The Designer shall review the natural surface contours and where necessary design finished surface levels that ensure the land levels comply with Council's specifications.

Where practical, areas should be regraded to minimise the necessity for interallotment drainage systems and allow overland water to flow naturally to roads or drainage reserves without excessive concentration.

Care shall be taken to provide depressions for overland flow from low points and over major drainage lines, to direct water runoff for storms up to the DFE to a positive outfall location.

The Designer shall ensure the proposed regrading works does not result in diversion and ponding of stormwater from the development onto adjoining land. Stormwater shall not be diverted from one adjoining land onto another.

The design of site regrading areas, in conjunction with the design of roadworks, shall be considered with the objective of balancing cut to fill volumes and achieving both an economical works and to minimise the haulage of imported fill or spoil to and from the works site.

The Designer shall consider the implications of site regrading in relation to the existing natural environment. Generally, site regrading shall be minimised in dense vegetation areas.

1.6 Special treatment of particular areas

In the event that an area is known to be affected by or inundated by local stormwater flows, the Designer shall investigate the existing conditions and detail how they relate to the proposed works. The Designer shall provide a preliminary report to Council detailing all data obtained in the investigation and recommend appropriate contour adjustments. The report shall be accompanied by sketch plans to clarify recommendations.

The Designer shall take into account all constraints either natural or otherwise that are to be identified as a burden on the site. The property may ultimately be affected by a "*restriction as to user*", which may be controlled by a legal instrument placed on title to the land advising prospective purchasers of any restrictions affecting the land.

The proposed finished surface or filled area shall be designed to accommodate sufficient cover over stormwater drainage lines and permitting surface stormwater flow to be guided to field inlet pits if depressions are retained in the finished surface contouring.

A geotechnical report is required to be submitted to Council and shall detail the following:

- (a) the site specific preparation and compaction requirements;

- (b) the suitability of the site for the proposed earthworks and any constraints that the earthworks would create for further development; and
- (c) the consequences of the proposed earthworks.

A description of the minimum acceptable quality of fill shall also be specified on project plans, supported by geotechnical recommendations.

The finished surface of any allotment or project site shall be designed to comply with Council's standard drawings and specifications.

Development in areas containing natural ground slopes of an excessively steep nature, i.e. greater than 15%, shall conform to the requirements of the State Planning Policy.

1.7 General standard of site preparation

Generally, clearing shall be kept to a minimum; however, the site is to be cleared of fallen timber, debris, stumps, large rocks and/or any trees which in the opinion of Council's arborist are approaching the end of their lifecycle or are diseased and dying and therefore pose a danger to the public or assets.

Trees and vegetation of significance shall be identified prior to design so that disturbance may be minimised through appropriate design.

All trees and vegetation to be retained should be protected in accordance with AS4970 – *The protection of trees on development sites* and relevant standard drawings.

The basic premise of site works should be that clearing is to be confined to the minimum area required to safely construct services, structures and the limits of approved extent of works areas. Additional clearing can be approved to ensure that the works are not interfered with by trees or other vegetation.

In areas with significant trees or vegetation, the extent of clearing shall generally be limited to:

- (a) clearing roadways to the limit of approved earthworks plus a sufficient lateral clearance to ensure that the trees or vegetation do not interfere with the works; and
- (b) allotment clearing to the minimum areas required to safely construct infrastructure services such as sewers, catchment drains and the limits of approved earthworks to allotments. Additional clearing can be approved to ensure that the trees or vegetation do not interfere with the works.

All tree pruning works shall be in accordance with AS4373 – *Pruning of amenity trees*.

All timber and other materials cleared from the site shall be removed and legally disposed of. All roots, loose timber, etc which may contribute to future drain blockage shall be removed.

No incineration of cleared vegetation is permitted.

In areas to be filled over the butts of trees, Council's preference is for an allowance to be made for clearing of all trees and replanting with advanced species, the number and type of which shall be approved by Council. All replanting is to be clear of probable future building location, and not to be commenced until filling has been completed and graded, with provision for watering and maintenance for duration of the Project. These specific requirements shall be shown on the drawings.

Trees on existing roads shall not be damaged or removed without the written approval of Council.

Trees located on land under the control of Council shall not be removed or damaged without written approval. Such requirements shall be shown on the project drawings.

Appropriate precautions should be implemented to protect selected trees identified to be preserved. Details of the protection measures and/or relocation scope shall be identified and shown on project drawings and presented to Council for approval.

In rural developments, the recommendations of the Queensland Fire and Rescue Authority (Rural Fire Service) are to be sought and considered by the Designer.

Where surplus or unsuitable material is to be disposed off site the Designer shall note the requirement on the project drawings for the Contractor to obtain an Operational Works permit from Council prior to disposal of material.

Where surplus or unsuitable material is proposed to be disposed of on open space or road reserves, the Designer shall submit details and seek separate approval prior to the lodgement of an Operational Works application.

Where the surplus material is generated from works from within existing declared road reserves, Council may nominate that the spoil be placed on Council controlled land within 5 km of the project site.

The extraction of material from within existing road reserves requires the approval of the State via the Department of Agriculture and Fisheries through a development application process administered by Council, who may levee a royalty to be paid by the Contractor.

2 Design detail

2.1 Fill embankments

The Designer shall take into account the requirements of AS 3798 "*Guidelines on Earthworks for Commercial and Residential Developments*" and the State Planning Policy in the design of any filling.

All materials proposed for use in fill embankments, regardless of location, shall be suitable for the purpose.

Fill comprising natural sands, industrial waste or by-products may only be used after the material type and location for its use is approved by Council and will be subject to specific requirements determined by prevailing conditions.

All fill areas shall be subject to a geotechnical assessment to ensure their stability.

Where the volume of imported fill material exceeds 2,500m³ (loose), the Designer / Contractor shall provide details of the following information to Council and/or the Department of Transport and Main Roads dependent on the haul route chosen and seek separate approval for:

- (a) proposed source
- (b) volume of material required
- (c) proposed transport route – the route must take particular care to minimise any adverse impacts upon residents and businesses
- (d) proposed time of cartage – start and finish times and days per week.

In considering the most appropriate haul route, the Designer shall refer to Council for acceptable haul roads and details of any applicable load limits timing.

Council and/or the Department of Transport and Main Roads may require contributions toward the cost of any accelerated pavement degradation along the haul route via an Infrastructure Agreement and will additionally request a bond to cover the cost of any pavement repairs to the approved route.

Where embankments require maintenance by conventional machinery, then the maximum transverse slope shall be 1:5, with the absolute maximum being 1:4 over short sections.

The grading of allotments shall be in accordance with the requirements detailed in Council's standard drawings. Unless stated otherwise, the following principles are to apply:

- (a) allotments should preferably drain to the street, where practicable;
- (b) where significant allotment areas drain to the rear, or other adjoining allotment, then interallotment drainage shall be provided;
- (c) the following minimum allotment grades are to apply:
 - (i) residential – 1:200
 - (ii) commercial / industrial – 1:300

2.2 Batter treatments

The Designer shall ensure that no cut or fill batters extend into an existing or proposed road, open space or adjoining allotment, without specific prior approval.

As a minimum unless adjoining land approvals have been granted all embankments and cuttings must be outside the road reserve. The top of any cut batter is to be 300mm inside the property boundary; the toe of any fill batter is to be 300mm inside the property boundary.

Where Council approval to fill adjoining lands has been given, the Designer shall ensure that the filling complies with the following criteria:

- (a) provision of a 1m minimum wide strip of land inside the adjoining allotment, having a slope between 1:20 and 1:200; and
- (b) the batter slope shall be a maximum of 1:4. The Designer must provide written approval of the adjoining property owner to Council.
- (c) Where site specific bank stabilisation measures are proposed the following criteria shall apply:
 - (i) Cut – 1:2.5 maximum; 1:4 desirable and
 - (ii) Fill – 1:2.5 maximum; 1:4 desirable.

Any batters higher than 1.0m shall require certification as to stability by an RPEQ and batters higher than 2.0m shall require certification by an RPEQ Geotechnical Engineer.

2.3 Levels

The final level of any filling on an allotment shall be in accordance with the requirements of the Planning Scheme. The development level will make allowances for:

Habitable Floor Level

The current required minimum habitable floor level is the higher of:

300 mm above the 100 year ARI flood level.

300 mm above the top of kerb.

300 mm above the crown of the road.

225 mm above ground level.

A level which allows the connection of all sanitary fixtures to the designated

connection point by means of sanitary drainage which complies with AS3500.
RL 5.40 m AHD (formerly 5.95 m AHD) for Mackay and environs.
RL 5.30 m AHD (formerly 5.80 m AHD) for Ball Bay/ Halliday Bay/ Seaforth.
RL 5.00 m AHD (formerly 5.80 m AHD) for Midge Point.
RL 5.30 m AHD (formerly 6.10 m AHD) for Sarina Beaches.

Note: The minimum level is to be raised a further 0.60m when the site is located within 100m of the foreshore.

Hospitals, schools and emergency services buildings are to be constructed to higher levels (200 year ARI and 500 year ARI's) pending on the specific development type.

Development Level

The minimum ground level shall be the higher of:

RL 5.00 m AHD for Mackay and environs.
RL 4.90 m AHD for Ball Bay/ Halliday Bay/ Seaforth.
RL 4.60 m AHD for Midge Point.
RL 4.90 m AHD for Sarina Beaches.

Note: The minimum level is to be raised a further 0.60m when the site is located within 100m of the foreshore.

2.4 Access

To enable appropriate vehicle access to each allotment, the Designer shall ensure that the footpath crossfall and batter grades comply with the following requirements:

- (a) the first 3m from kerb and channel to be 2%;
- (b) balance of verge – maximum 1:6 (17%), minimum 1:50 (2%);
- (c) within allotment:
 - (i) residential and rural residential – maximum 1:6 (16.6%) for at least the first 6m from the front boundary, 1:6 (16.6%) desirable and 1:5 (20%) absolute thereafter;
 - (ii) rural – desirable 1:6 (16.6%), absolute 1:5 (20%); and
 - (iii) industrial – desirable 1:10 (10%), absolute 1:6 (16.6%);
 - (iv) Maximum change in driveway grades – all areas desirable 8%; maximum 10%
- (d) accesses to 'hatchet' allotments are to be connected to the kerb and channel for the full length of the access 'handle' with 3m (minimum) wide paved driveway; and
- (e) any concrete inverts are to be built in accordance with Council's standard drawings.

The Designer shall ensure that an access is provided to all rural allotments. The access shall be built in accordance with Council's standard drawings.

Accesses to rural allotments that are at a slope greater than 1:10 (10%) shall be paved and sealed or concreted as indicated in Council's standard drawings.

Where accesses involve the construction of culvert crossings or causeways these shall be designed in accordance with relevant geometric road design standards and constructed in accordance with relevant TMR standards.

The Designer may be required to demonstrate to Council's satisfaction that practical access can be provided to all allotments and also to a building envelope within the allotment boundary.

2.5 Standard of fill for sites

Where fill is required, the Designer shall ensure that the materials specified are in accordance with the relevant standards.

Fill comprising natural sands, industrial waste or by-products may only be used after the material type and location for its use is approved by Council and will be subject to specific requirements determined by prevailing conditions. In general materials requirements shall comply with Section 14.2 of MRTS04.

It is essential that the Designer give prior advice to Council of any intended use of such materials. It should be noted that failure to obtain Council's approval may lead to a direction to remove any material considered by Council or other relevant authorities as unsuitable or in any way unfit for filling, with no additional cost to Council.

All work shall be in accordance with AS 3798. Fill is to be placed in layers not exceeding depths specified in Table 15.3(a) of MRTS04. All fills are to be compacted to standards as indicated in Table 5.1 of AS3798.

The area under paved areas, footpaths, batters and areas of fill shall be stripped of topsoil and any other organic materials.

Council will only accept fill as approved fill, if:

- a. The filling operation has been designed and supervised by a Practising Registered Professional Engineer (Queensland) in accordance with AS 3798-1996. Such a design is to take into account existing topography, soil and drainage conditions; and
- b. An "As Constructed" plan of fill showing property description, boundaries and surface levels prior to filling, finished surface levels after filling, and any other works as constructed or altered in the fill operation is supplied to Council; and
- c. Copies of compaction test results accompanied by an Engineer's Certificate certifying compliance with Council's requirements and compliance with AS 3798-1996 is supplied to Council.

Council as a minimum for Commercial development requires Controlled Fill – Class I certification to be provided in accordance with AS3798. For all other development it is recommended that Class I certification is preferred given that unconsolidated fill impacts subsequent foundation design and costs for any subsequent development works proposed.

2.6 Topsoiling and grassing

All areas where filling has been placed are to be top dressed with clean arable topsoil, fertilised and sown with suitable mix of grasses. This work shall be carried out in accordance with the relevant standards.

Topsoil shall be spread to a minimum depth of 75mm.

Topsoil is defined as surface soils that are high in organic matter and contaminated by residual grass seeds and grass roots.

The Drawings shall be annotated as follows: *"Where possible all topsoil shall be retained on the site and utilised effectively to encourage appropriate revegetation."*

All areas are to be seeded / turfed, watered and fertilised to obtain a minimum of 90% grass coverage before being accepted "On Maintenance" by Council.

Designers are to ensure that the full width of the verge is to be seeded / turfed.

2.7 Retaining walls and rock protected slopes

A suitably qualified and experienced professional structural engineer (RPEQ) shall design all retaining walls and rock protected slopes. Appropriate certification for the design is required to be submitted with the project drawings.

Any building restrictions within the lot which occur because of the design or construction of the retaining wall is to be identified on the Drawings. This may also result in Council requiring a covenant being placed on the lot title or requiring a building envelope being placed on the allotment. The only exceptions are walls that have no surcharge loading and are less than 1m high.

Retaining walls are to be located on the allotment which contains the earthworks which gives rise to the need for the retaining wall. Where a retaining wall is required on the boundary between a lot and a road reserve if the earthworks are part of the works required for the creation of the lot, then the retaining wall must be located within the lot. That lot benefitting from the existence of the retaining wall must be where the retaining wall is located for future liability and maintenance responsibility.

All walls retaining road or open space fill are to be located within the road or open space reserve.

The Designer shall ensure that permanent fencing (of a type approved by Council) or alternatively retaining wall extensions having a minimum height of 1.2 m shall be provided on retaining walls located on future public land and shall form of the design inputs for the retaining wall structural design or alternatively shall be subject to a risk assessment which assesses residual risk following construction.

Design for the retaining structure shall be to AS 4678 or traditional (lumped) factor of safety (FOS) approach.

Table 5.7.4-A of AS 4678 specifies the minimum Factors of Safety (FOS) to be applied for each mode of failure - Sliding 2.0; Overturning 2.0; Bearing 2.5; Global 1.5.

Structure design life shall be in accordance with Table 3.1 of AS 4678. All retaining structures supporting public infrastructure shall be considered “major public works” and the appropriate design life applied.

All materials utilised shall consider the durability of the materials to meet the design life requirement of the structure and these material properties shall be certified by the RPEQ undertaking the structural certification of the retaining structure.

2.8 Effect on adjoining properties

Where it is proposed to divert or direct piped stormwater into adjoining properties, drainage easement rights are to be created over the adjoining lots in accordance with Planning scheme policy – stormwater drainage design.

3 Special requirements

3.1 Temporary diversion drains

Where temporary drains are required to divert surface flows away from the site regrading area, the location and silt/erosion control treatment shall ensure minimal soil disturbances and material loss offsite.

The Designer shall include any requirements identified in the relevant soil and water quality management policies for any additional requirements.