

Planning Scheme Policy Stormwater Management



Planning scheme policy – Stormwater management

Adoption

Moreton Bay Regional Council adopted this planning scheme policy on 24 November 2015.

Commencement

This planning scheme policy will take effect from 1 February 2016.

1. Introduction

This policy supports the Moreton Bay Regional Council Planning Scheme and has been made by Council in accordance with Chapter 3, Part 4, Division 2 and Part 5, Division 1 of the *Sustainable Planning Act 2009*.

1.1 Purpose

The purpose of this planning scheme policy is to provide guidance for the preparation of a Stormwater Management Plan that addresses stormwater quantity and quality.

1.2 Application

This planning scheme policy applies to assessable development where subject to Stormwater assessment criteria.

1.3 Interpretation

Terms used in this planning scheme policy are defined in Schedule 1 – Definitions of the planning scheme. Where a term is not defined in Schedule 1, section 1.3 Interpretation of the planning scheme applies.

2. Site Based Stormwater Management Plan

A Site Based Stormwater Management Plan (SBSMP) is a broad outline for planning, design, management and maintenance of stormwater **quantity and quality** management measures during construction, 'on' and 'off' maintenance and operational phases of a development.

A SBSMP is to be used as a standalone manual for site managers, engineers, landscape professionals and others conducting detailed design. A SBSMP may form part of an Environmental Management Plan for the development. Where a development is required to submit another management plan such as an Acid Sulphate Soils Management Plan or an Ecological Assessment Report these should be submitted together.

Site Based Stormwater Management Plan requirements

A Site Based Stormwater Management Plan is to be prepared by a suitably qualified individual such as a Civil Engineer or an Environmental Professional and is to be certified by a Registered Professional Engineer (RPEQ) (Civil or Environmental). Such a plan may be required as a result of development being assessed against assessment criteria relating to stormwater quantity and quality management.

2.1 Stormwater Quantity

The following information is to be provided in a Site Based Stormwater Management Plan or in a Downstream Drainage Discharge Report to assist in the assessment process for all developments regarding stormwater quantity:

a. Site assessment information

A site analysis and description of the site, surrounds and catchment detailing:

- i. existing and proposed land use;
- ii. topography;
- iii. catchment area and sub catchments;
- iv. any site-specific issues;
- v. existing stormwater drainage system;
- vi. major and minor flow paths; and
- vii. all discharge points from the site and any local flooding issues.

b. Review of existing information

- i. A review of existing downstream waterway/stormwater infrastructure that may be impacted by changes in hydrology, hydraulics; and
- ii. A review of any Catchment or Waterway Management Plans, Stormwater Management Plans or Infrastructure Charges Plans for the area or catchment.
- iii. Determine/ demonstrate the lawful point/s of stormwater discharge for the development site.
- iv. Obtain a Flood Check property report using the flood information provided by the Council.

c. Potential impacts of the development

- i. Investigate the hydraulic and the hydrological characteristics of both the undeveloped and developed scenarios;
- ii. Determine whether the development site is likely to subject to flooding and/ or overland flow;
- iii. If applicable, determine flood storage by computer model based on pre and post development field contour surveys;
- iv. Determine whether the development is likely to cause any nuisance and annoyance to upstream or downstream properties;
- v. Determine whether the cumulative impact of development in the catchment is likely to cause an adverse impact on other properties; and
- vi. Indicate whether any flood risks associated with the development are fully known, quantifiable and capable of being addressed without any uncertainty.

The information to be provided should be based on the following data:

- i. Mapping and topographic survey data;
- ii. Stream flow data;
- iii. Rainfall data; and
- iv. Flood height data (up to and including a 100 year ARI storm event).

d. Stormwater management strategy - Construction Phase

Provide a description of the overall strategy for the management of stormwater quantity for achieving adopted stormwater quantity design objectives during construction phase as defined in PSP Integrated Design.

e. Stormwater management strategy – Operational Phase

Provide a description of the overall strategy for the management of stormwater quantity for achieving adopted stormwater quantity management design objectives during operational phase as defined in PSP Integrated Design.

The stormwater management plan should identify and detail the following:

- i. existing and/or proposed regional stormwater management devices as identified in the regional Stormwater Management Plans or Catchment Management Plans or Infrastructure Charges Plans for the area or catchment;
- ii. details of the management measures proposed for the implementation;
- iii. timing of the proposed works in relation to the stage of development.

f. Computer models

Provide electronic copies of the computer models used in the stormwater quantity and flood management strategies; the computer models should be:

- i. Generally accepted in the stormwater industry in Australia;
- ii. Of the latest version.

g. Figures and plans

Include figures and plans wherever possible, with the minimum requirements including:

- i. Existing and proposed catchment and sub-catchments and flow paths;
- ii. Conceptual plans and drawings of the location, and the details of stormwater management measures including sizes/ volumes and cross sections with dimensions, levels, batter slopes, and boundary clearances, where applicable.
- iii. Proposed development levels related to AHD and flood levels where applicable.

2.2 Stormwater Quality

The following information is to be provided in a Site Based Stormwater Management Plan to assist in the assessment process for all developments regarding stormwater quality:

a. Site assessment information

A site analysis and description of the site, surrounds and catchment detailing:

- i. existing and proposed land use;
- ii. topography;
- iii. catchment area;
- iv. soil type (including dispersive potential and iron content);
- v. existing vegetation;
- vi. any site-specific issues;
- vii. existing stormwater drainage system;
- viii. major and minor flow paths; and
- ix. all discharge points from the site and any local flooding issues.

b. Review of existing information

- i. Description of the receiving environment and review of available water quality data including comparison to identified Environmental Values and receiving Water Quality Objectives.
- ii. A review of existing downstream waterway/stormwater infrastructure that may be impacted by changes in hydrology, hydraulics or water quality; and
- iii. A review of any Catchment or Waterway Management Plans, Stormwater Management Plans or Infrastructure Charges Plans, and Council's Total Water Cycle Management Plan for the area or catchment.

c. Potential impacts of the development

Identify potential impacts that the development may have on stormwater quality, including:

- i. assess risks from the impacts of development;
- ii. estimates pollutant loads from the proposed development;
- iii. identifies opportunities and constraints analysis based on the findings from Steps a) and b);
- iv. identification of key pollutants for Construction and Operational Phase;
- v. identification of discharge limits based on adopted Water Quality Objectives

d. Stormwater management strategy

Provide a description of the overall strategy for the management of stormwater and water quality issues, addressing key pollutants and major risks and methods for achieving adopted Water Quality Objectives as defined in PSP Integrated Design.

Additionally, provide a water quality assessment on how on-site water quality satisfies the Development and water quality vision, Development water quality objectives and relevant specific outcomes of the Seqwater Development Guidelines, *Development Guidelines for Water Quality Management in Drinking Water Catchments*.

e. Construction phase

Identify details of the proposed erosion and sediment control measures to be provided as part of an erosion and sediment control program, including:

- i. Identification of management issues such as highly dispersive soils, reactive soils, acid sulphate soils, Iron rich and organic rich soils and significant environmental areas on the site to be protected during construction (e.g. wetlands);
- ii. Erosion and sediment control measures to meet the relevant assessment criteria for achieving adopted design objectives in construction phase as defined in PSP Integrated Design.
- iii. Monitoring, assessment and reporting provisions;
- iv. Maintenance schedules including predicted frequency and responsibility for all treatment structures and the overall system during both the construction and operational phases of development;
- v. Timing of the proposed works; and
- vi. A contingency plan if the system or particular structures do not meet the assessment criteria that the indicators have been based on.

f. Operational phase

The following issues are to be addressed for the operational phases of the development:

- i. Modelled estimates of the hydraulic and mean annual pollutant loads (and concentrations) of stormwater pre and post development using local rainfall data, including comparisons of both (Model for Urban Stormwater Improvement Conceptualisation (MUSIC) is recommended to model loads).
- ii. Provision of measures to mitigate hydrologic/hydraulic impacts and their integration with water quality mitigation measures;
- iii. Selection of treatment devices to achieve the mean annual pollutant load reduction and/or water quality objectives for the identified target pollutants;
- iv. Specific treatment measures to target iron and organic concentrations where required (iron and organic rich soil and/or discharge to marine or estuarine waterway).

Information should be submitted demonstrating that a range of treatment options have been considered and the optimal treatment train has been selected to achieve maximum pollutant removal effectiveness and minimum maintenance cost to the Council.

If the proposed stormwater network is proposed to discharge into marine or estuarine waterways effective control of iron and organics (Total Organic Carbon) must be specifically demonstrated.

A conceptual design of the proposed stormwater treatment devices should be included. Planning Scheme Policy – Integrated Design should be consulted when applying for the installation of treatment devices. The *Healthy Waterways Water Sensitive Urban Design – Technical Design Guidelines for South East Queensland and other Technical Guidelines by Water by Design* should also be referred to when designing treatment trains.

The plan should identify and detail the following:

- iv. description of the water quality objectives to be met by the proposed system;
- v. details of mean annual loads for specific pollutants and the reduction in load as a result of the proposed treatment train;
- vi. details of anticipated iron and organic concentrations and the reduction in concentration as a result of the proposed treatment measures (where relevant);
- vii. specifications of design for each treatment device and a site layout of the treatment train;
- viii. details of the management measures proposed for the implementation;
- ix. monitoring, assessment and reporting provisions;
- x. maintenance schedules including predicted frequency and responsibility for all treatment structures and the overall system during both the operational and construction phases of the development;
- xi. cost estimation for maintenance required on stormwater treatment devices including on and off maintenance costs and life cost for the replacement of infrastructure;

- xii. timing of the proposed works in relation to the stage of development and describe the maintenance regime to be undertaken during 'on' and 'off' maintenance and the proposed length of both; and
- xiii. a contingency plan if the system or particular structures do not meet the water quality objectives that the indicators have been based on.

h. Computer models

Provide electronic copies of the MUSIC models used in the stormwater quality management strategies; the MUSIC models should be of the latest version.

g. Figures and plans

Include figures and plans wherever possible, with the minimum requirements including:

- i. Existing and proposed catchment and sub-catchments and flow paths;
- ii. The locations of stormwater treatment and management areas (at appropriate scale for comparison with other development plans);
- iii. Conceptual plans and drawings of the location, size and type of stormwater treatment measures; and
- iv. Descriptions and diagrams of the type of treatment measures to be provided.

3. Flood Impact Assessment

A Flood Impact Assessment Report will be required to assist in the assessment process for developments if the development site is located adjacent to a waterway or a waterway is traversing through the site and:

- i. The site is likely to be significantly affected by flooding or;
- ii. The development proposal is likely affect the waterway characteristics including changes to the waterway that may affect the hydraulic capacity and realignment of the waterway.

Flood Impact Assessment Report is to be prepared by a suitably qualified Hydraulic Engineer and should be certified a Registered Professional Engineer (REPE) (Civil) and the following information is to be provided:

- i. Investigate the hydraulic characteristics of the waterway for the undeveloped and developed scenarios;
- ii. Determine the flood storage by computer model based on pre and post development field contour surveys;
- iii. Determine whether the development is likely to cause any nuisance or annoyance to upstream or downstream properties;
- iv. Determine whether the cumulative impact of development is likely to cause an adverse impact on other properties; and
- v. Indicate whether any flood risks associated with the development are fully known, quantifiable and capable of being addressed without any uncertainty.

The flood study should be based on the following data:

- i. Mapping and topographic survey data;
- ii. Stream flow data;
- iii. Rainfall data; and
- iv. Flood height data (up to and including a 100 year ARI storm event).

Provide electronic copies of the computer models used in the flood impact assessment; the computer models should be:

- i. Generally accepted in the stormwater industry in Australia;
- ii. Of the latest version.