Bellingen Shire Development Control Plan 2017

Chapter 12
Stormwater

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Table of Amendments

Amendment	Date Adopted	Date Commenced
Minor review of DCP - DCP 2017 replaces DCP 2010	22 November 2017	6 December 2017

12.1 Aims

a) To maintain the high ecological, recreational and agricultural values of waterways.

b) To ensure stormwater systems are carefully planned, designed and located to prevent the disturbance, redirection, reshaping or modification of watercourses and associated vegetation and to protect the quality of receiving waters

c) To ensure that stormwater harvesting (source controls) measures are implemented to maximise stormwater reuse and prevent increases in the quantity of stormwater discharge from the development site which can impact on downstream environments.

d) To ensure that any stormwater facilities installed on Council property are appropriate having regard to Council's ongoing ability to manage and maintain those facilities.

12.2 Where This Chapter Applies

The provisions of this chapter apply throughout all areas of Bellingen Shire unless any site specific development controls included in this chapter, or in other chapters of this DCP nominate alternative requirements. In this case, the provisions of the site specific development controls shall prevail.

12.3 When This Chapter Applies

The provisions of this chapter apply when any application for a development described in Table 12.1 is received by Council.

It does not apply in respect of development identified as complying or exempt development in an environmental planning instrument applying to the land.

Where the provisions of any environmental planning instrument conflict with those contained within this DCP, the provisions of the environmental planning instrument shall prevail.

12.4 Definitions

Annual Exceedance Probability (AEP): The probability that a given storm or flood event will be exceeded in any one year. An Average Recurrence Interval (ARI) may be calculated as the inverse of the AEP.

Integrated Watercycle Management (IWM): IWM is a philosophy of design for water supply and disposal systems which aims to minimise negative ecological effects and improve the sustainability of the overall water system. IWM includes consideration and integration of the design of stormwater conveyance and treatment systems, potable and non-potable water supply, wastewater treatment and disposal/re-use and waterway health.

Water Sensitive Urban Design (WSUD): WSUD is an alternative to the traditional conveyance approach to stormwater management. WSUD is a philosophy which aims to mitigate environmental impacts particularly on water quantity, water quality and receiving waterways, conventionally associated with urbanisation.

Stormwater: Water arising as a result of rainfall falling over a specific catchment.

Stormwater Management Plan: A report, usually submitted at Development Application stage, detailing the major stormwater conveyance and treatment systems, and demonstrating compliance with Council's stormwater treatment criteria and including all assumptions and design parameters as used in any modelling. The report should also identify the maintenance responsibility for each stormwater treatment device.

Stormwater Treatment Device: A structure designed and constructed to treat stormwater in some manner so that its post treatment characteristics differ from its pre-treatment characteristics. Examples of stormwater treatment devices are rain water tanks, infiltration basins, bioretention basins and gross pollutant traps.

12.5 Variations

1) In general, Council may consider variations to the standards required of development in this chapter when the overall aims of this chapter and any specific aims that may be detailed for that particular standard can be achieved.

2) Variations may also be considered in the following specific instances.

   i. Where Council excludes an area or type of development from full or partial compliance with this Plan on the basis of an alternative integrated water cycle management strategy or specific site characteristics appropriate to the particular circumstances applying to that land, as identified in a Schedule attached to this Plan; or

   ii. Where a masterplan has been endorsed by Council, or the Minister under SEPP 71, which adopts an integrated water cycle management plan for that land; or

   iii. Where Council is of the view that any variation is minor and that the aims of this Chapter are met.

12.6 Criteria for Compliance

Council requires that all development be designed to minimise the impact of stormwater on the natural and built environment and employ water sensitive urban design and integrated water cycle management techniques where possible.

12.6.1 Water quality

1) Council has three minimum levels of water quality treatment that are considered appropriate for different types of development. The three levels of treatment and their requirements are outlined in this section.

Table **12.1** shows the required level of treatment for particular types of development.

Table 12.1. Stormwater quality treatment levels for development types

Development Type	Treatment Required		
	Level 1	Level 2	Level 3
Individual dwellings, dual occupancy, alterations, additions, sheds or development increasing impervious areas in any non-rural zonings	✓		
Residential or large lot residential subdivision involving a new public or community title road			✓
Multiple dwelling development - 2 extra dwellings to 5 extra dwellings (excluding dual occupancy)		✓	
Multiple dwelling development - more than 5 extra dwellings			✓
New Commercial or industrial development			✓
Alterations or additions to commercial or industrial development/buildings resulting in increase of less than 50% in impervious area.		✓	
Alterations or additions to commercial or industrial development/buildings resulting in increase of 50% or more in impervious area.			✓
Non domestic rural development	Discuss with Council. Dependent upon scale of development, amount of impervious area and sensitivity of receiving environment.		

Level 1 – No mandatory stormwater requirements

There are no mandatory stormwater quality controls applying to Level 1 developments. Council may, in certain instances, require the installation of stormwater quality controls should the individual circumstances of the development warrant such controls.

Level 2– Deemed to comply solution

Level 2 developments are required to install stormwater capture and treatment/reuse or infiltration controls with a storage volume of a minimum of $2m^3$ per $100m^2$ of impervious area.

Controls are to be installed within the lot boundary of the benefitting lot and identified and protected on the title plan for the property through the s88b instrument. Suitable controls are:

- Roof water tanks,
- Formed void absorption trench,
- Gravel filled absorption trench, and
- Rain gardens or bio-retention systems.

In the event that building works will impact on the stormwater control device, Council may allow deferment of the installation of the stormwater control devices to after building is complete. In this case, the device must be installed prior to the issue of Final Occupation Certificate.

Water quality treatment features must not be shared by multiple properties unless subdivisions are designed to have common areas (eg: common property as part of a Strata Plan, Community lot as part of a Community Title subdivision) and the shared water quality features are located within the common property.

Level 3 – Performance based solution

Level 3 developments are required to develop a Stormwater Management Plan that demonstrates compliance with either Option A or Option B below, depending upon which option provides the greatest level of treatment, as demonstrated through the use of computer based water quality modelling.

For either option, where Council or an appointed expert deems the receiving water for a development to be sensitive to wetting and drying cycles, Council may require the developer to demonstrate that the existing wetting and drying regime of the receiving water is maintained for up to, and including, the 12 month recurrence interval rainfall event.

Option A

No net increase in the average annual pollutant load of stormwater entering the stormwater systems and receiving waters, above that occurring under pre-development conditions based on the following indicators:

- Total Suspended Solids
- Total Phosphorus Load
- Total Nitrogen Load
- Gross Pollutant Load

Option B

Demonstrate compliance with the following minimum treatment criteria:

- 90% reduction in Total Suspended Solids
- 65% reduction in Total Phosphorus
- 45% reduction in Total Nitrogen
- 90% reduction in Average Annual Gross Pollutant load (>5mm)

12.6.2 Water quantity

Peak Discharge

1) For any development falling within Level 2 or Level 3 of Table 1 of the water quality guidelines (with the exception of large lot residential or rural subdivision) the applicant must demonstrate, through the use of hydrologic and hydraulic modelling software and submission of a Stormwater

Management Plan, that adequate stormwater controls (such as detention basins/tanks) have been installed to ensure that the development does not create any increase in peak discharges at the downstream property boundary for the 100%, 20%, 10% and 1% Annual Exceedance Probability storm event.

2) Any habitable dwelling must be a minimum of 500mm above the 1% AEP peak water level within any major drainage structure.

Conveyance

3) Council adopts the major/minor approach for conveyance of stormwater in accordance with Australian Rainfall and Runoff: A guide to flood estimation, 2016 (ARR). Any subdivision of land resulting in greater than 2 lots must demonstrate through design calculations and drawings in accordance with ARR that adequate provision has been made to convey the peak discharge for up to and including the 1% Annual Exceedance Probability storm including allowance for pit blockage.

12.6.3 Demonstration of compliance

1) Demonstration of compliance with Level 3 requirements for water quality, or the requirements for control of water quantity must be by a qualified and practicing Civil or Environmental Engineer with qualifications suitable for admission to Engineers Australia and who is actively practicing in the field of stormwater design. Demonstration of compliance must be in the form of a Stormwater Management Plan.

2) All modelling parameters, assumptions, calculations and/or output files must be submitted as part of the development documentation

12.6.4 Assets to be dedicated to Council

Where Stormwater Controls are to be situated on Council Land and/or are to be ultimately maintained by Council, the developer must:

1) Prepare and submit to the satisfaction of the Manager of Asset Management and Design , a Stormwater Device Maintenance and Management Plan which gives a description of each device, it's function and outlines the frequencies and types of maintenance to be undertaken for the stormwater device;

2) Undertake maintenance in accordance with the Stormwater Device Maintenance and Management Plan for no less than 24 months from the date of issue of the subdivision certificate, at no cost to Council;

3) At completion of the maintenance period, ensure that the device is functioning as intended with all landscaping in good order and take action to remedy any defects; and

4) At completion of the maintenance period produce a verified maintenance costing from the preceding 24 months as well as an estimated annual maintenance costs for the future maintenance of the stormwater treatment device.

Note: Only Level 3 treatment systems will be considered for acceptance by Council.

12.6.5 Erosion and sediment control

1) Erosion and Sediment Control Measures for the construction and site stabilisation phases of Level 1 developments must be provided as necessary in accordance with the provisions of Landcom's brochure entitled "Planning for Erosion and Sediment Control on Single Residential Allotments" (2004).

2) Erosion and Sediment Control Plans that cover the extent of the construction and site stabilisation phases of Level 2 and 3 developments must be prepared in accordance with the provisions of the following publication:

3) Managing Urban Stormwater: Soils and Construction – Volume 1,4th Edition (reprinted July 2006) *Landcom.*