



ACT

Government

Environment, Planning and
Sustainable Development

Waterways: Water Sensitive Urban Design General Code

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Contents

1. INTRODUCTION.....	1
2. DEVELOPMENT CODES AND GENERAL CODES	2
3. CODE REQUIREMENTS.....	3
ELEMENT 1: MAINS WATER USE REDUCTION	3
1.1 Mains Water Use Reduction Target	3
ELEMENT 2: STORMWATER QUANTITY.....	4
2.1 On-site stormwater retention.....	4
2.2 On-site stormwater detention	5
2.3 Stormwater quantity for major road on sites over 2000m².....	6
2.4 On-site stormwater detention for estate development plans	6
ELEMENT 3: STORMWATER QUALITY	7
3.1 Stormwater Quality Target – sites greater than 2000m².....	7
3.2 Stormwater quality target – major roads.....	8
ELEMENT 4 CLIMATE CHANGE ADAPTATION.....	8
4.1 Nuisance flooding – sites greater than 2000m².....	8
4.2 Green/living infrastructure	9
ELEMENT 5: ENTITY (GOVERNMENT AGENCY) ENDORSEMENT	9
5.1 Water infrastructure	9

1. Introduction

Name

The name of this code is **Waterways: Water Sensitive Urban Design General Code**

Application of the code

This code applies to development and redevelopment on sites across all zones of the Territory Plan that:

- are currently connected or intended to be connected to the mains water supply; or
- are likely to alter the stormwater regime of the site.

This code does not apply to any of the following:

- single dwellings and secondary residences subject to the single dwelling housing development code; and
- as excepted within the provisions of this code.

This code stipulates the outcomes sought in relation to water sensitive urban design primarily through a series of targets for mains water reduction, water quality and stormwater quantity. The ACT Practice Guidelines for Water Sensitive Urban Design provides guidance and options for compliance with this code for both private and public developments.

While the ACT Practice Guidelines for Water Sensitive Urban Design is external to the Territory Plan, it is called up in the various rules and criteria of this code. In this way a key element of the Guidelines is to provide information on the 'online assessment tools' and other contemporary methods for proponents to demonstrate compliance with the relevant code requirements. The ACT Government also has design standards for municipal infrastructure which is external to the Territory Plan.

Purpose

Water sensitive urban design (WSUD) is an approach to urban planning and design that aims to integrate the management of the water cycle including stormwater into the urban development process which considers integrated water cycle management. The importance of WSUD is acknowledged in the statement of strategic directions of the Territory Plan, which states that "land and water resources will be planned in accordance with the principles of integrated catchment management and water sensitive urban design".

In conjunction with other relevant codes, the ACT Practice Guidelines for Water Sensitive Urban Design will be used to assess development applications and outline the relevant requirements to intending applicants in designing development proposals and preparing development applications.

The WSUD general code aims to provide the necessary WSUD targets and strategies to be implemented to ensure improved environmental sustainability.

Structure

The code requirements contain a number of elements. Each element has one or more rules and, unless the rule is mandatory, an associated criterion is provided. Rules provide quantitative, or definitive, controls. In contrast, criteria are chiefly qualitative in nature.

In some instances rules are mandatory. Such rules are accompanied by the words "This is a mandatory requirement. There is no applicable criterion." Non-compliance with a mandatory rule will result in the refusal of the development application. Conversely, the words "There is no applicable rule" is found where a criterion only is applicable.

Assessment tracks

Assessment tracks for particular developments are specified in the relevant zone development table.

Proposals in the **code track** must comply with all rules relevant to the development.

Proposals in the **merit track** or **impact track** must comply with a rule or its associated criterion, unless the rule is mandatory (ie. it has no related criterion). Where a rule is fully met, no reference to the related criterion needs to be made. Where there is a departure from a rule, or where a criterion only applies, the onus is on the applicant to demonstrate **compliance with the criterion**.

Code Hierarchy

Where more than one type of code applies to a development, the order of precedence when there is inconsistency of provisions between codes as defined in the *Planning and Development Act 2007* is

1. precinct code
2. development code
3. general code.

Definitions

Defined terms and references to legislation and other documents are italicized throughout this code. Definitions of terms used in this code are either listed in part 13 of the Territory Plan or, for terms that are only applicable to this code, the meaning of the terms are spelt out within the respective rule or referred to in the ACT Practice Guidelines for Water Sensitive Urban Design.

2. Development codes and general codes

Development must comply with all relevant codes (including precinct codes and other general codes), subject to the code hierarchy outlined in the introduction to this code. General codes are found in part 11 of the Territory Plan.

3. Code requirements

This part applies to all assessable development subject to this code, except where stated in the relevant provisions.

Element 1: Mains water use reduction

Rules	Criteria
1.1 Mains Water Use Reduction Target	
<p>R1</p> <p>This rule applies to all development currently connected or intended to be connected to mains water supply except any of the following:</p> <ul style="list-style-type: none">a) development subject to the estate development codeb) development for minor alterations or extensions involving 50% or less of the existing floor area. <p>Development achieves a minimum 40% reduction in mains water consumption compared to an equivalent development constructed in 2003.</p> <p>Note: Compliance with this rule is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>	<p>This is a mandatory requirement. There is no applicable criterion.</p>

Element 2: Stormwater Quantity

Rules	Criteria
2.1 On-site stormwater retention	
<p>R2</p> <p>This rule applies to development for at least one of the following:</p> <ul style="list-style-type: none"> a) development on sites greater than 2,000m² involving works that have the potential to alter the stormwater regime of the site, including sites subject to the estate development code b) development within existing urban areas which increases impervious area by 100m². <p>This rule does not apply to any of the following:</p> <ul style="list-style-type: none"> a) development of major roads b) sites identified in a precinct code that stormwater retention requirements for the site have been fully dealt with through an estate development plan. <p>Development complies with at least one of the following:</p> <ul style="list-style-type: none"> a) stormwater retention management measures are provided and achieve all of the following: <ul style="list-style-type: none"> i) Stormwater storage capacity of 1.4kL per 100m² of the total impervious area of the site is provided specifically to retain and reuse stormwater generated on site as a whole ii) Retained stormwater is used on site b) development captures, stores and uses the first 15mm of rainfall falling on the site. <p>For this rule, on-site stormwater retention is defined as the storage and use of stormwater on site.</p> <p>Note: Compliance with this rule is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: ACT Practice Guidelines for Water Sensitive Urban Design defines acceptable uses of stormwater on site.</p> <p>Note: Any site specific stormwater retention requirements for new estates must be nominated on planning control plans submitted with the estate development plan.</p>	<p>C2</p> <p>Development complies with all of the following:</p> <ul style="list-style-type: none"> a) It is demonstrated that stormwater retention measures can be more successfully met offsite b) development complies with at least one of the following stormwater retention management measures: <ul style="list-style-type: none"> i) An equivalent volume of stormwater is stored and used at an offsite location within the same catchment or a catchment in proximity to the site as part of a stormwater offset agreement ii) If it is demonstrated that the above stormwater retention measures are unable to be provided, then a contribution to the construction of offsite measures within the same catchment or a catchment in proximity to the site as a means of offset may be approved by the Planning and Land Authority. <p>For this criterion, the meaning of a stormwater offset agreement as defined and detailed in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>

Rules	Criteria
2.2 On-site stormwater detention	
<p>R3</p> <p>This rule applies to development for at least one of the following:</p> <ul style="list-style-type: none"> a) development on sites greater than 2,000m² involving works that have the potential to alter the stormwater regime of the site, including sites subject to the estate development code b) development within existing urban areas which increases impervious area by 100m² <p>This rule does not apply to any of the following:</p> <ul style="list-style-type: none"> a) development of major roads b) sites identified in a precinct code indicating that stormwater detention requirements have been fully met. <p>Stormwater detention measures are provided and achieve all of the following:</p> <ul style="list-style-type: none"> a) capture and direct runoff from the entire site b) Stormwater storage capacity of 1kL per 100m² of impervious area is provided to specifically detain stormwater generated on site c) The detained stormwater is designed to be released over a period of 6 hours after the storm event. <p>For this rule on-site stormwater detention is defined as the short term storage and release downstream of stormwater runoff.</p> <p>Note: Compliance with this rule is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: Calculating on-site detention can include 50% of the volume of rainwater tanks where stormwater is used on-site.</p> <p>Note: For new estates any stormwater detention must be nominated on planning control plans submitted with the estate development plan. In particular, where an estate development plan has partially achieved the stormwater detention measures, this can be taken into account for the detention measures on individual sites.</p>	<p>C3</p> <p>Stormwater detention measures are provided and achieve all of the following:</p> <ul style="list-style-type: none"> a) ensure that the peak rate of stormwater runoff from the site does not exceed the peak rate of runoff from an unmitigated (rural) site of the same area for the 1 Exceedance per Year (1EY) b) A maximum of 30% of the runoff from the site may bypass the onsite stormwater detention system where it can be demonstrated that at least one of the following circumstances applies: <ul style="list-style-type: none"> i) Difficult ground levels ii) The nature of the receiving drainage system cannot receive runoff from the entire site iii) The need to retain significant trees or vegetation iv) other demonstrated circumstances. <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: where an estate development plan has partially achieved the stormwater detention measures, this can be taken into account for the detention measures on individual sites.</p>

Rules	Criteria
2.3 Stormwater quantity for major road on sites over 2000m²	
<p>R4</p> <p>This rules applies to development of major roads involving sites greater than 2000m².</p> <p>Development complies will all of the following:</p> <ul style="list-style-type: none"> a) The capacity of existing pipe (minor) stormwater connection to the site is not exceeded in the 1 in 10 year storm event b) The capacity of the existing overland (major) stormwater system to the site is not exceeded in the 1 in 100 year storm event. 	<p>C4</p> <p>Development for major roads on sites greater than 2000m² complies with at least one of the following:</p> <ul style="list-style-type: none"> a) A reduction of the 1 in 5 year and 1 in 100 year stormwater peak run off flow to pre-development levels b) The capacity of the downstream piped stormwater system to its outlet with an open channel is not exceeded in the 1 in 10 year storm event. <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>
2.4 On-site stormwater detention for estate development plans	
<p>There is no applicable rule.</p>	<p>C5</p> <p>This criterion applies to estate development plans. Stormwater detention measures are provided and the peak rate of stormwater runoff from the estate does not exceed the peak rate of runoff from an unmitigated (rural) site of the same area for minor and major storms.</p> <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: The Major (1% Annual Exceedance Probability (AEP)) and Minor storms are as defined by Transport Canberra and City Services Directorate (TCCS) or the agency responsible for stormwater management.</p> <p>Note: Stormwater detention measures required for each individual block may contribute toward meeting the overall detention requirements for the estate as demonstrated in an estate development plan.</p> <p>Note: Any site specific stormwater detention must be nominated on planning control plans submitted with the estate development plan.</p>

Element 3: Stormwater Quality

Rules	Criteria
3.1 Stormwater Quality Target – sites greater than 2000m²	
<p>R6</p> <p>This rule applies to development for all of the following:</p> <ul style="list-style-type: none"> a) where the development site is greater than 2,000m² b) where development involves works that have potential to alter the stormwater regime for the site. <p>This rule does not apply to development of major roads.</p> <p>The average annual stormwater pollutant export is reduced when compared with an urban catchment of the same area with no water quality management controls for all of the following:</p> <ul style="list-style-type: none"> a) gross pollutants by at least 90% b) suspended solids by at least 60% c) total phosphorous by at least 45% d) total nitrogen by at least 40%. <p>Note: Compliance with this rule is consistent with the ACT Practice Guidelines for Water Sensitive Urban Design and is demonstrated by a report by a suitably qualified person, using the MUSIC model. If a tool other than the MUSIC model is used then a report by an independent suitably qualified person must be submitted demonstrating and confirming compliance with the rule. If parameters that are non-compliant are used then a report must also be submitted by an independent suitably qualified person stating how and why the parameters are appropriate.</p>	<p>C6</p> <p>It is demonstrated that at least one of the following applies:</p> <ul style="list-style-type: none"> a) stormwater quality measures can be more successfully met offsite b) a sensitive downstream environment will be negatively impacted. <p>Development complies with at least one of the following:</p> <ul style="list-style-type: none"> a) an equivalent load of pollutants is captured at an offsite location as part of a stormwater offset agreement b) if the above stormwater quality measures are unable to be provided, then a contribution to the construction of offsite measures as a means of offset may be approved by the Planning and Land Authority. <p>For this criterion a stormwater offset agreement is defined as detailed in the ACT Practice Guidelines for Water Sensitive Urban Design.</p> <p>Note: Compliance with this criterion is consistent with the ACT Practice Guidelines for Water Sensitive Urban Design and is demonstrated by a report by a suitably qualified person, using the MUSIC model. If a tool other than the MUSIC model is used then a report by an independent suitably qualified person must be submitted demonstrating and confirming compliance with the criterion. If parameters that are non-compliant are used then a report must also be submitted by an independent suitably qualified person stating how and why the parameters are appropriate.</p>

Rules	Criteria
3.2 Stormwater quality target – major roads	
<p>R7</p> <p>This rule applies to development of major roads, including the duplication of an existing major road in full or in part.</p> <p>The average annual stormwater pollutant export is reduced when compared with a road catchment of the same area with no water quality management controls for all of the following:</p> <ol style="list-style-type: none"> gross pollutants by at least 90% suspended solids by at least 60% total phosphorous by at least 45% total nitrogen by at least 40%. <p>Note: Compliance with this rule is consistent with the ACT Practice Guidelines for Water Sensitive Urban Design and is demonstrated by a report by a suitably qualified person, using the MUSIC model. If a tool other than the MUSIC model is used then a report by an independent suitably qualified person must be submitted demonstrating and confirming compliance with the rule. If parameters that are non-compliant are used then a report must also be submitted by an independent suitably qualified person stating how and why the parameters are appropriate.</p>	<p>C7</p> <p>If it can be demonstrated that the stormwater quality measures specified in the rule are unable to be provided, then a contribution to the construction of offsite measures as a means of offset may be approved by the Planning and Land Authority.</p> <p>Note: Compliance with this criterion is consistent with the ACT Practice Guidelines for Water Sensitive Urban Design and is demonstrated by a report by a suitably qualified person, using the MUSIC model. If a tool other than the MUSIC model is used then a report by an independent suitably qualified person must be submitted demonstrating and confirming compliance with the criterion. If parameters that are non-compliant are used then a report must also be submitted by an independent suitably qualified person stating how and why the parameters are appropriate.</p>

Element 4 Climate change adaptation

Rules	Criteria
4.1 Nuisance flooding – sites greater than 2000m²	
<p>There is no applicable rule.</p>	<p>C8</p> <p>This criterion applies to development on sites greater than 2,000m² involving works that have potential to alter the existing drainage and overland flow regime for the site.</p> <p>Overland flow paths are provided and achieve all of the following:</p> <ol style="list-style-type: none"> accommodate overland stormwater flows up to the 1%AEP reduce nuisance flooding. <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>

Rules	Criteria
4.2 Green/living infrastructure	
<p>R9</p> <p>This rule applies to at least one of the following developments:</p> <p>a) Development on sites greater than 2000m² involving works that have potential to alter the stormwater regime for the site</p> <p>b) Development within existing urban areas that increase the impervious area of the site by 100m² or more.</p> <p>Development achieves a minimum of 20% of the site area to be permeable.</p> <p>Note: Compliance with this rule is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>	<p>C9</p> <p>It is demonstrated that the development achieves all of the following:</p> <p>a) Increases permeable surfaces and living infrastructure through green spaces</p> <p>b) Plants that require irrigation are supported by sustainable water systems such as onsite stormwater harvesting to achieve microclimate benefits</p> <p>c) Promotes evapotranspiration to mitigate extreme temperatures, improve air humidity and overall human comfort.</p> <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>

Element 5: Entity (Government agency) Endorsement

Rules	Criteria
5.1 Water infrastructure	
<p>There is no applicable rule.</p>	<p>C10</p> <p>This criterion applies to development that will result in municipal water sensitive urban design infrastructure being handed to the ACT Government.</p> <p>An operation and maintenance plan is to be endorsed by the ACT Government for the water sensitive urban design assets that are to be handed to the ACT Government.</p> <p>Note: Compliance with this criterion is demonstrated through a report from a suitably qualified person consistent with the methods specified in the ACT Practice Guidelines for Water Sensitive Urban Design.</p>