



#### OVERVIEW

The Shire of Northam encourages best practice stormwater design by setting guidance criteria for residents and developers in relation to stormwater management. These requirements are aimed at restricting the discharge from the developing site to an acceptable rate which will allow the existing drainage network to function properly.

#### GENERAL

Stormwater management can generally be categorized into the following three (3) groups:

- Protection of new buildings from flooding;
- Protecting downstream infrastructure from any adverse effects due to new construction;
- Efficiently disposing of stormwater from property.

#### PROTECTION FROM FLOODING

The developer needs to recognize that the requirement to protect against flooding is the responsibility of the developer. Generally the following requirements need to be addressed in the design:

- 100 year storm event for overland stormwater flow path;
- Invert levels of pipe network are designed for the efficient disposal of stormwater generally the absolute minimum fall is 1:200.
- The finished floor level (height) - This is the most critical part of the design, which is generally 300mm (min) above the road kerb level (height) depending on site conditions. The finished floor height needs to consider flow from adjoining properties to protect the new build from flooding.
- Certification of design by the designer/ builder for the storm water design.

Further information and requirements are outlined on the "Development Applications – Engineering Checklist" form which can be found on our website. This completed form must accompany the planning and/or building application at the time of submission.

#### PROTECTION OF INFRASTRUCTURE

The legal point of discharge for stormwater needs to be clearly identified on the stormwater drawing. The engineering department will decide if the position is acceptable to ensure all infrastructure is protected from flooding and does not cause adverse effects to the developer or existing downstream residents.

#### DISPOSAL OF STORMWATER

The developer's designer must submit a Stormwater plan for the following:

- All Dwellings and Commercial Buildings
- Infrastructure with an impervious area greater than 400m<sup>2</sup>.

The Shire reserves the right to request further information above the minimum criteria outlined in the Shire's public documents. All new development sites are required to attenuate (store) water so that the stormwater flows before development, remains unchanged from the property after development. A simple formula to calculate the storage required is provided below:

$$\text{Total Volume to Attenuate (m}^3\text{)} = \frac{\text{Impervious Area}}{80}$$

*Example:*

A house with a total impervious area of 240m<sup>2</sup> (roof, driveway and concreted areas) the attenuation volume required is:

$$\frac{240}{80} = 3 \text{ cubic meters}$$

#### FURTHER INFORMATION

For further information refer to Frequently Asked Questions on the following page and requirements are outlined on the "Development Applications - Engineering Checklist" form (to be submitted with the application) which can be found on our website. Alternatively please contact the Shire of Northam Administration Office on (08) 9622 6100 or queries can be emailed to [records@northam.wa.gov.au](mailto:records@northam.wa.gov.au) which will be forwarded to the appropriate case officer.

Refer to Engineering Checklist on our website for further stormwater plan requirements.

## FREQUENTLY ASKED QUESTIONS

### DO I HAVE TO PRODUCE A STORMWATER PLAN EVEN THOUGH MY PROPOSED DEVELOPMENT IS ON A LARGE RURAL LOT?

*Yes, the developer has to demonstrate consideration has been given to how the dwelling has been positioned on the land.*

*For example;*

- *Is the proposed dwelling to be built on a low lying area or creek line that could be affected by a large storm event?*
  - *Could building the entrance road into the property direct water towards adjoining properties?*
- These are just some of many potential issues that need to be considered in the planning and/or building application, the level of detail will be dependent on site conditions.*

### DO I NEED A DESIGN ENGINEER TO PRODUCE A STORMWATER PLAN OR DRAWING?

*The Shire of Northam strongly recommends that the developer employs a qualified person who understands stormwater and has the ability to produce a stormwater drawing that is clear and legible. This will reduce the risk of flooding and failing drainage networks.*

### WHAT STORMWATER EVENTS DO I DESIGN FOR?

*The Shire requires the developer to design for the following:*

- *1:100 year event (Overland flow paths)*
- *1:100 year event (Buildings – Valley & Box Gutters)*
- *1:20 year event (Buildings – Eave Gutters)*
- *1:20 year event for attenuation (soak wells / basins)*
- *1:5 for piped drainage systems*

*All building gutters and downpipes systems must comply with the National Construction Code Series.*

### WHERE CAN I FIND GUIDANCE ON CURRENT DESIGN STANDARDS?

*The Department of Water and Western Australian Planning Commission (WAPC) provide documented guidance criteria for storm water management which can be found on the following websites:*

Department of Water

[www.water.wa.gov.au](http://www.water.wa.gov.au)

Publication: Stormwater Management Manual

Department of Planning

[www.planning.wa.gov.au](http://www.planning.wa.gov.au)

Publication: Better Urban Water Management