



DEVELOPMENT APPROVAL

FREQUENTLY ASKED QUESTIONS & INFORMATION ABOUT DRAINAGE REQUIREMENTS

Why is it important to appropriately design and construct a functional drainage system for your development?

Any development of land, such as housing and access way construction, brings about an increase in impervious or slow draining areas, when compared to the previous natural condition of the land. Developers are therefore required to manage runoff from the development site to a pre-development state. Any development within an existing urban environment will impose an increased demand on the City's road drainage system, which may not readily accommodate the increased peak flows of stormwater with a possible result of flooding, as the capacity of the City's system is being exceeded.

On-site infiltration and detention facilities or underground storage systems can provide temporary storage for stormwater runoff within the confines of the development area. The aim is to restrict the discharge from the site at a rate which the City's existing drainage system is capable of accommodating, mimicking the pre-development conditions or to upgrade the system to accommodate the increased flows.

Where can I find guidance on current requirements?

The Department of Water and the Western Australian Planning Commission (WAPC) provide guidance on total water cycle management and water sensitive urban design that need to be incorporated into the design and development of any new urban redevelopment areas. Please refer to the Department of Water's 'Stormwater Management Manual for Western Australia' and Section 4.8 of the WAPC's Better Urban Water Management document. Both documents are available via the following links

- [Department of Water :: Stormwater Management Manual](#)
- [PlanningWA :: Better Urban Water Management](#)

Other References and Links

- Pilgrim, DH, (ed)., Australian Rainfall & Runoff - A Guide to Flood Estimation, Institution of Engineers, Australia, Barton, ACT, 1987.
- Building Codes of Australia, Australian Building Codes Board, 2010 (or as amended)

Who is responsible for ensuring my drainage system is appropriately designed and constructed?

Design and installation of adequate lot drainage is the responsibility of the landowner/developer. The City of Gosnells is able to provide design guidance and can outline specific requirements in order to assist in the development of appropriate solutions.

What are the City's specific requirements on drainage arising from the development approval condition(s)?

From the City's perspective the drainage approach needs to demonstrate a functional drainage system that is likely to achieve a limitation of drainage flows entering the road reserve of the City's drainage system, either indirectly via overland flow or directly via a piped connection where permitted.



Based on industry best practice, the City requires the following standard conditions and requirements to be adhered to, as a minimum, when designing and constructing stormwater systems:

1. Design the development so that the amount of water flowing offsite remains unchanged before and after development or is reduced and further limited to an acceptable design level, depending on what has been prescribed within an Urban Water Management Plan or similar overarching drainage strategy
2. All excess stormwater shall be detained and/or infiltrated on-site through suitable structural and non-structural means. Guidance on suitable systems may be found in the Department of Water's Urban Stormwater Management Manual
3. To demonstrate the functionality of the proposed drainage system, the following details need to be submitted, for assessment, to the City:
 - engineering construction drawings
 - geotechnical site assessment which includes soil profile, groundwater conditions, soil permeability and how the stormwater can be disposed through retention or detention
 - hydrologic and hydraulic calculations which should include identification of likely flood event flow paths, flow rates and velocities, storage areas and include the proposed controlled groundwater levels
 - gully and manhole locations
 - pipe sizes, lengths, locations, invert levels and grades
 - sub-soil drainage requirements
 - all invert levels, including surface entry points
 - construction details of on-site stormwater compensating devices
 - falls in all paved areas
 - proposed connection to the City's system if allowed
 - site of all buildings including floor levels
 - carparking pavement levels
 - levels of any proposed fill and ground level differences at the boundary to adjoining properties
 - completed residential soakwell volume calculator as applicable to development
4. Groundwater drainage networks (subsoil drains), where required, must be designed to ensure:
 - water dependent ecosystems are protected
 - mobilisation of nutrient rich groundwater is minimised
 - free-draining outlets to the surface drainage system, and
 - adequate separation between the development surface and groundwater
5. Permanent shallow water lying in the base of any infiltration area during the drier months must be avoided



6. Bio-retention systems and/or vegetated overland flow paths shall be provided prior to the entry of all drainage systems into natural watercourses or where the risk for pollutant enrichment of stormwater is likely
7. Oil and grease pollutant separators and/or gross pollutant traps may be required at outlet points into the City's drainage system, depending on the nature of the development
8. The drainage system shall be implemented in accordance with the accepted plans and prior to any building licence being issued, or clearance of subdivision/development, whichever applies first
9. For any developments within the Canning Vale area, a maximum 10% stormwater runoff coefficient applies to calculate the critical permissible site discharge (PSD). The PSD shall not be exceeded in all storm events up to the 1 in 100 year Average Recurrence Interval
10. For all developments within the City – other than the Canning Vale area, a maximum stormwater runoff coefficient equivalent to pre-development levels and/or in accordance with an existing Urban Management Plan or similar overarching drainage strategy approved for the development area shall be applied to calculate the critical permissible site discharge (PSD). The PSD shall not be exceeded in all storm events up to the 1 in 100 year Average Recurrence Interval
11. Where municipal drainage pipes or watercourses pass through the development area, easements as required, need to be registered in favour of the City over those assets
12. Where sharing of property drainage by adjoining green title lots is proposed, reciprocal rights on drainage and access must be registered as easements/covenants on the affected properties
13. All cut and fill is to be retained within the property boundaries
14. A safe overland flood route must be provided from the development area to convey severe event flows in excess of the system capacity. This flood route has to be nominated on the plan and must not adversely affect adjoining property

What can I do if I experience difficulty in meeting the above requirements?

Variation to these standard requirements is possible, based on the specific site location, soil environmental conditions and where justified depending on individual circumstances

Where can I obtain further information?

Please contact the Technical Service Branch on 9397 3000 or visit the website www.gosnells.wa.gov.au for further information such as residential soakwell volume calculator