Local Government Guidelines for Subdivisional Development

Drainage Module 4

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Information Revisit
Local Government Guidelines for Subdivisional development
Edition 2 for comment
Why did DPI fund this update?

• Western Australian Planning Commission is the subdivision approval agency for the State.

• Changes to *Planning & Development Act 2005* re clearance.

• Industry raising concerns about the lack of *consistency, clarity, transparency, sustainability* of requirements.

• Funding made available under the Local Government funding assistance program- expires June 2009.

• DPI approached IPWEA to update Edition 1 with WALGA involvement.
What are the issues?

- **Clarity**: what are the specific requirements needed to address the subdivision condition - tests set by SAT.

- **Transparency**: what is the source of engineering requirements and who is accountable for changes.

- **Sustainability and fairness**: Balance the cost to new home purchasers against longer term asset life and community cost.

- **Consistency**: engineering requirements changing over time and outside a formal ‘change process’
The land development process

- Zoning
- Structure Planning
  - Local Government engineers should be involved in planning at an early stage
- Subdivision approval
- Clearance of conditions
  - Guidelines operate at this stage
- House construction
Consultants’ Overview

- Edition 1 1998 has not been upgraded since its release.
- Legislation has changed since 1998.
- Policy documents such as “Liveable Neighbourhoods” were adopted October 2007.
- New innovations in materials and design procedures have been implemented. e.g. water sensitive urban design and AAPA asphalt mix – Stone Mastic Asphalt.
Module Structure

Each module, where applicable is sectioned into several parts as follows:

1. General
2. Policies and standards
3. Design
4. Materials specifications
Module 4 - Drainage

Standards and Policies:
- Stormwater Management Manual
- Better Urban Water Management
- Liveable Neighbourhoods

Design:
- Liveable Neighbourhoods – Element 5
- Water Sensitive Urban Design
- Water Quality
- Water Quantity
- Nuisance Insect Management
- Flood Protection
- Groundwater Drainage
- Stormwater Infiltration
- Flood Storage - Detention
Standards and Policies

Drainage Design Objectives for Water Sensitive Urban Design

- **Policy**
  - State Water Plan
  - State Planning Policy 2.9
  - Planning Bulletin 92
  - Better Urban Water Management
  - WSUD Local Planning Policy

- **Guidelines**
  - Stormwater Management Manual
  - UWMP guideline
  - LWMS guideline
  - LPP implementation notes

- **Assessment tools**
  - BUWM checklists
  - Music guidelines
  - LPP objectives/strategies matrix
  - DoW UWMP assessment checklist
  - DoW LWMS assessment checklist

- **Incentives**
  - Performance bonuses*
  - Developer covenants*
  - Rebates*

- **Statutory tools**
  - Scheme text provisions
  - Conditions of subdivision
  - Conditions of development*

- **Education (capacity building)**
  - New Waterways
  - BMP practice notes
  - Land use/small scale practice notes*

- **R&D**
  - Performance information
  - Cost information (life cycle)
Water Quantity Management

Principle:

- Post-development annual discharge volume and peak flow be maintained relative to predevelopment conditions, unless otherwise established through determination of ecological water requirements for sensitive environments.

- Protect the built environment from flooding and water logging, and minimise the public risk, including risk of injury or loss of life, to the community.
Water Quality Management

It is necessary to maintain surface and groundwater quality at pre-development levels (winter concentrations) and, if possible, improve the quality of water leaving the development area to maintain and restore ecological systems in the sub-catchment in which the development is located.
Disease Vector and Nuisance Insect Management

To reduce health risks from mosquitoes, retention and detention treatments should be designed to ensure that between the months of November and May, detained immobile stormwater is fully infiltrated in a time period not exceeding 96 hours.
Planning and Integrated Water Cycle Management

The consideration of water issues must be integrated with other planning and development matters, including natural resource management issues, so that land and water planning are undertaken concurrently, rather than independently and consecutively.
Key Elements for Water-Sensitive Urban Design

- Water balance, conservation, use and efficiency
- Flood Protection (Managing Storm Events)
- Frequent (up to 1 year ARI) Events
- Stormwater Drainage Design - General Principles
- Groundwater Drainage Design
Design in Urban Areas

- Drainage Systems – Water Sensitive Design
- Grated Gullies and Side Entry Pits
- Junction Pits
- Sub-soil Drainage
- Primary and District Distributor Road Drainage
- Open Access Flood Storage/Detention Facilities
- Stormwater Infiltration
Design in Rural Areas

- Open Channels
- Crossover Culverts
- Flood Storage/Detention Areas
Standard Drainage Criteria

Please remember that all the innovation does not reduce the need to assess all drainage designs using the “old” tools as well. Hydraulic grades lines in particular.

Do not forget to apply good drainage calculation to all designs!!!!
Process Since Version 2 Completed

- March 2011 – workshop at IPWEA State Conference
- Submissions made – put to Committee and many inclusions.
- WAPC intended to make document “Policy” – advertised as part of process
- Further submissions received
- Again considered by Committee.
Process Since Version 2 Completed

- Meeting held at the City of Canning and a further Committee was suggested and to be set up.

- Committee to allow those making latest submissions the ability to have a further say on some of the perceived issues.
Where is Document at Now?

- Latest revision from WAPC advertising almost completed
- IPWEA concerned that the document should not be an adopted Policy but a generic guideline!
- Director General WA Planning commission has had an independent Engineer review the document and that outcome is that it may be better to keep the document as a guideline.
Currently the document is in “flux” with decision son its role and use still to be determined.
Questions

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