MONASH University
Engineering

Postgraduate Program in Infrastructure Engineering and Management

# CIV5262: Planning and Design of Urban Stormwater Management Measures

## Background and Aims

This unit is an introduction to the structural methods available to improve stormwater quality discharging to downstream receiving waters that achieve standards acceptable for a range of active and passive recreational activities.

*After completing this unit participants will be:*

- able to apply strategic planning principles for stormwater management.
- capable of stormwater solutions that are consistent with existing legislation.
- able to develop urban drainage designs which employ “test management” principles.
- able to select and design treatment sequences that produce acceptable outflows.

*Details of the structure of the unit are provided over the page*

## Enrolment Options

Enrol as a single unit or as part of either the Graduate Certificate in Infrastructure Engineering and Management, Postgraduate Diploma in Infrastructure Engineering and Management, or Master in Infrastructure Engineering and Management.

## Off-Campus Study Mode

This unit is offered by Off-Campus (distance education) and there is no requirement for participants to attend lectures. Study guides, comprising a comprehensive set of course notes, are sent following enrolment. Further support is provided through a unit web site and via e-mail. The lecturer is available to answer questions and to provide assistance as necessary throughout the semester. Assistance can be arranged by email, facsimile, mail, telephone or through the discussion groups on the unit web site. Assessment comprises two assignments and an examination (worldwide exam venues are available).

## Unit Co-ordinator

To be advised in Semester 1 2009.

**Enrolment or General Course Enquiries:**

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**Offered through Department of Civil Engineering, Faculty of Engineering, Monash University**

**ABN 12 377 614 012 CRICOS provider number 00008C**

# Structure

***The unit is structured around 12 topics which are generally associated with one week of study***

| Topic | *After completing this topic, participants will:* |
|---|---|
| **1. Administrative and Legislative Framework for Stormwater Management in Victoria** | • Understand the Legislative Framework in Victoria covering Urban Water Quality.<br>• Appreciate the "Stormwater Agreement" established by Water Authorities and the use of Stormwater Management Plans. |
| **2. Effects of Catchment Urbanisation on Stormwater** | • Understand the effects of Urbanisation on catchments and the environmental problems generated.<br>• Appreciate the responsibilities of organisations to manage urban stormwater. |
| **3. Ecosystem Health – Definition and Assessment** | • Understand the concepts of ecosystem health in terms of sustainability.<br>• Appreciate the factors that influence ecosystem health. |
| **4. Developing Stormwater Management Strategies** | • Understand changing community needs and attitudes to urban drainage and the consequent need to employ Best Management Practices.<br>• Understand the choices in components of a Water Sensitive Urban Design treatment train. |
| **5. Field Inspection and Reporting on Local Stormwater Treatment on Measures** | • Be aware of local sites where WSUD principles have been employed.<br>• Understand the development pressures and alternatives that are developing. |
| **6 & 7. Gross Pollutant Traps** | • Understand the operating mechanisms of different GPT's.<br>• Be capable of sizing GPT's under varying conditions of operation. |
| **8. Grass Swales and Buffer Strips** | • Understand the operating mechanisms of swales and buffer strips and their design. |
| **9 & 10. Stormwater "Source Control" Using Infiltration: Some Design Procedures** | • Understand the operating mechanisms of On-Site Retention systems.<br>• Appreciate the environmental improvements associated with On-Site Retention Systems. |
| **11 & 12. Constructed Ponds and Wetlands** | • Understand the operating mechanisms of Ponds and Wetlands and the use of different methods zones to achieve improved water quality.<br>• Able to design effective wetland system treatment trains. |