

### 6.3 Water Sensitive Road Design (4-hour)

This course is effectively a ½-day summary of Courses 6.1 concentrating on stormwater and pollution management within road reserves and residential developments.

## 7 WATERWAY MANAGEMENT

### 7.1 Natural Channel Design (4-hour)

This course introduces the concepts of Natural Channel Design (NCD) for use in the design of drainage channels and the rehabilitation of minor watercourses within heavily modified catchments.

### 7.2 Treatment of Creek and Gully Erosion (4-hour)

A practical-based course on the various forms and causes of watercourse and gully erosion, providing detailed discussion on the selection and application of a wide range of treatment techniques.

### 7.4 Design of Fauna Sensitive Waterway Crossings (4-hour)

A course focusing on the design of various types of waterway/roadway crossings with the aim of minimising their impact on aquatic and terrestrial fauna passage. The course reviews guidelines on fish passage requirements for waterway crossings focusing primarily on the design and rehabilitation of bridges and culverts.

### 7.5 Fish Friendly Waterway Rehabilitation (4-hour)

This course focuses on the enhancement of fish habitats within modified streams, and issues relating to creek revegetation, bank erosion management, bed erosion management, pollution control devices, and channel weeding & de-silting. Several case studies are presented.

## COURSE PRESENTATION

All courses are conducted by Grant Witheridge using PowerPoint presentations. Maximum participation number per course is 35.

## COURSE TIMES

Full-day courses run for 8½ hours, typically using the following times:

08:30 session 1  
10:00 break  
10:30 session 2  
12:30 lunch  
13:00 session 3  
14:30 break  
15:00 session 4  
17:00 end

Half-day courses typically run for 4 hours. Start times are negotiable.

## OBLIGATIONS OF BOOKING AGENT

The proponent of the course is responsible for organising:

- a suitable training room, screen and white board;
- supply of a data projector suitable for use with a XGA (1024x768) notebook computer;
- all catering (if required); and
- printing of course notes (originals supplied by Catchments & Creeks Pty Ltd).

## FEE STRUCTURE

Single half-day course	\$1500.00
Full-day or two half-day courses	\$2500.00

Courses conducted outside south-east Queensland may attract a travel fee and accommodation costs. Above fees include GST.

## CONTACT DETAILS

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# Waterway & Stormwater Management

and

# Erosion & Sediment Control

# Training Courses 2011



# Catchments & Creeks

## EROSION & SEDIMENT CONTROL TRAINING

### 1. INTRODUCTORY ESC TRAINING

#### 1.1 Introduction to Erosion & Sediment Control (1-day)

The primary ESC course specifically developed for office personnel involved in the design and/or supervision of ESC measures. The course details the impacts of sedimentation, the various types of soil erosion, and the application of temporary drainage, erosion and sediment control measures to civil construction sites. (The course incorporates all aspects of Course 1.3, but not Course 1.2.)

#### 1.3 Application of Erosion & Sediment Control Measures (4-hour)

An alternative introductory course specifically developed for those site personnel not directly involved in the design or supervision of erosion and sediment control measures. The course concentrates on how to install and maintain temporary drainage, erosion and sediment control measures. (Participants that complete Course 1.1 do not need to attend this course.)

### 2. ADVANCED ESC TRAINING

#### 2.2 Development of Erosion & Sediment Control Plans (4-hour)

An advanced erosion and sediment control course focussing on the preparation of Erosion and Sediment Control Plans (ESCPs) for construction sites. A significant amount of the course is spent in workshops preparing ESCPs for various sites. Participants are required to have completed an introductory ESC course before attending this course.

#### 2.3 Sizing Drainage and Sediment Control Measures (4-hour)

An advanced ESC design course usually presented in partnership with Course 2.2. The course discusses the hydraulic design (sizing) of various drainage and sediment control measures, including detailed

discussion on sediment basin design. Participants are assumed to have a fundamental knowledge of hydraulics and the principles of erosion and sediment control.

### 3. SPECIALIST ESC TOPICS

#### 3.2 Instream Work Practices (3-hour)

A stand-alone training course on instream work practices and temporary instream sediment control measures. The course provides information on the legal aspects (Queensland), the impacts of instream sedimentation, and the selection and application of various instream drainage, erosion and sediment control measures, including sediment control techniques used during site and material de-watering operations, and stream rehabilitation techniques.

## WATERWAY & STORMWATER MANAGEMENT

### 4. HYDROLOGY

#### 4.1 Application of the Rational Method – Queensland only (4-hour)

Introduction to the various hydrological methods used to determine design discharge for small to medium catchments. Detailed discussion is provided on the application of the Rational Method and the various procedures as presented within the Queensland Urban Drainage Manual (QUDM-2007) for the determination of time of concentration.

### 5. HYDRAULICS

#### 5.1 Aspects of Piped Drainage Design (2-hour)

This course has been developed for people with past experience in stormwater drainage design. Discussion is provided on the reasoning behind many of the design rules for pipe drainage. The course reviews hydraulic gradeline (HGL) analysis, structure losses, methods to achieve a reduction in pit losses, and the hydraulics of inlet structures.

#### 5.2 Design of Stormwater Outlets (4-hour)

This course reviews the design of stormwater outlets and their integration into various receiving environments, including discussion on aesthetics, headwall design, public safety, inlet and outlet screens, erosion control, maintenance and water quality issues.

#### 5.3 Energy Dissipater and Drop Structure Design (4-hour)

An advanced course detailing the principles of energy dissipater design as used on stormwater outlets, culverts and detention basin. This course discusses a design procedure for sizing impact column energy dissipaters. Various forms of open channel drop structures are discussed including their hydraulics, usage and preferred geometry.

#### 5.5 Aspects of Culvert Design (4-hour)

This course reviews various social, hydraulic and environmental issues associated with the design of waterway culverts. The course investigates flooding issues, drop-inlet design, debris control, siltation management, outlet erosion, and fauna passage requirements.

### 6 STORMWATER MANAGEMENT

#### 6.1 Stormwater Pollution Management and Treatment (1-day)

A medium-level course discussing the impacts of stormwater pollution, the common types of pollutants, and the potential impacts on various receiving waters. Discussion is provided on various treatment techniques and methods for selecting an appropriate treatment system for various catchment conditions. The course concludes with a discussion on Water Sensitive Urban Design with reference to several case studies.

#### 6.2 An Overview of the Queensland Urban Drainage Manual (1-day)

This course presents an overview of the 2007 edition of the Queensland Urban Drainage Manual (QUDM). Discussion is provided on each chapter, and includes most of the information provided in Course 5.1.