



ENVIRONMENT AGENCY

Conveyance Estimation System

Peter Spencer

Conveyance Estimation System Environment Agency

Estimates of maximum water levels underpins much of the Flood Defence business:

- New flood alleviation schemes
- Flood Forecasting
- Flood Risk Mapping
- Operations
- Development Control



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Learning to Live with Rivers (Nov 2001)

- A lot to say about the importance of hydraulic and other modelling, linkages between different types of modelling, a catchment scale approach, etc

Strategy for Flood Risk Management (May 2003)

Flood Mapping Strategy (July 2003)

Will be a Modelling & Data Management Strategy



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**So lots of drivers for change, improvement,
delivery, etc.**

Flood Forecasting

- Increasing use of hydrodynamic models for real-time flood forecasting – yet real-time operation can reveal the uncertainties



Workshop - March 2000

Royal Academy of Engineering

**Conveyance was seen as a
significant issue**

Conveyance Estimation System 10 June 2004



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Workshop - March 2000

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- A typical Consultant's proposal will quote Chow (1959) to derive Manning's 'n'
- Results from the Flood Channel Facility haven't gone into hydraulic software
- A large gulf between researchers & modellers
- A large gulf between modellers & operations



Workshop - March 2000

Royal Academy of Engineering

Vegetation

- Increasing need to model effects
- In-channel, bankside, floodplain
- “Environmentally acceptable channels”

Habitat Enhancement

- Can we model everything by increasing ‘n’ ?



Workshop - March 2000

Royal Academy of Engineering

Modellers want methods which are:

- robust
- accurate
- accepted by academics
- usable with data which can be collected
- understandable by practitioners
- within hydraulic modelling software



Conveyance Estimation System

- Link academics and practitioners
- Conveyance network supported by EPSRC
- Project User Consultative Group



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Implementation

- New methods reviewed by expert panel
- Include in future EA specifications
- Will there be a learning curve as to how to apply new methods reliably and efficiently?
- Looked impressive at testing stage
- Will it give different levels than before?



Conveyance Estimation System

- Approx £0.5M project
- Funded by DEFRA \ EA, Scottish Executive, DARD Northern Ireland
- Example of joined-up UK initiative, funding & expertise

