FLOOD DAMAGE ECONOMIC METHOD (FDEM)

Reliable answers to tough questions:
Making smart decisions demands reliable answers to tough questions. Black & Veatch’s Information Management and Analytics (IMA) solutions empower you to cut through the data clutter and see how to improve efficiency, enhance service and streamline your operations. Whatever your function or area of responsibility, IMA solutions from Black & Veatch can help.
FDEM allows appraisers to focus in on key areas quickly using spatially oriented queries, reporting and visualisation. The method is adaptable and can be used for appraisals of small towns or entire regions – in other words, appraisals to strategies.

**VISUALISING FLOOD DAMAGES TO VALIDATE INVESTMENT DECISIONS AND SEEK CONTRIBUTIONS**

FDEM is an IMA based tool developed by Black & Veatch which has been used successfully for a number of years for flood damage calculations. It uniquely bases all the calculations at property level which means superior flexibility for assessing, visualising and understanding flood damages and identifying beneficiaries of flood defence schemes. It can be used for:

- Prioritising investment decisions through high level validation of business cases using a consistent approach to flood damage
- Visualising funding shortfall and identifying potential contributors
- Better communication/collaboration with local authorities, utilities and other stakeholders

As all the calculations in FDEM can be related back to a geographical feature additional data sources such as utility assets or planned development areas can be used to further enhance the assessment of a scheme’s future viability. Prioritisation and programming can be carried out using detailed information leading to an optimised project list based on an auditable decision making process.

Visualisation techniques can be applied to demonstrate the suitability or otherwise of a scheme, the shortfall in funding, major contributors or the regional programme itself using time series data to display works starting and completing.

FDEM’s scalability and data granularity allows any boundaries to be used to provide reports such as a count of properties benefiting from a scheme or the combined damage value in an area.

A fully flexible scalable tool allowing investigations to be carried out from scheme level right up to a region, all to the same level of accuracy and all based on individual property impacts

Programme level visualisation allows geographical level planning and reporting to be undertaken
IMA BASED FLOOD ECONOMIC ASSESSMENT

Black & Veatch’s pioneering approach to economic assessment produces results that are more accurate, IMA based, scalable, quicker and more cost-effective than traditional techniques. Information is presented visually, enabling the public to understand the impacts of flooding, and business users to make informed decisions. The process often identifies more properties than with other techniques, maximising benefit-cost ratios, and the inherent level of detail enables focus on individual properties, particularly useful for highlighting where it might be possible to seek funding contributions.

FDEM IN DETAIL

Economic analysis is at the heart of the flood risk management option appraisal process. It is vital that Black & Veatch consider the economics of all options at the best possible level of detail, in order to present a reliable business case to prioritise Environment Agency spending.

As more digital data is becoming available at a national level, it is now possible to include more detail in higher level strategic studies, as well as at a project level. To make the most of this digital data, Black & Veatch has developed the Flood Damage Economics Method (FDEM), which uses a Geographic Information System (IMA).

VISUALISING THE ECONOMICS PROCESS

The use of IMA brings accessibility and understanding to the economics process through the use of powerful visualisation techniques. Every stage of the FDEM method is stored in the IMA database and referenced against the base spatial data. This means every stage of the process can be visualised to real world data. All inputs, calculations and results are stored against an individual property as opposed to a flood cell or study area. This makes reporting extremely flexible with results ‘sliceable’ to suit any requirement. The economics process no longer takes place in Excel sheets and Access databases with numbers representing properties. FDEM bring the economics process to life using IMA.

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In everything we do, we are always looking for new ways of improving efficiency, cutting costs, providing clarity & enhancing safety standards.

Visualising and identifying flood risk is an important and significant step in protecting communities from the devastation of flood damage.
Combining multiple sources to generate a full assessment