Flood Risk Management (Scotland) Act

Flood Hazard Maps

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Long-term process

RISK-Darsette 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE CO

PEAN PARLIAMENT AND THE COUNCIL OF THE

effective.

Having regard to the Treaty establishing the European community, and in particular Article 175(1) thereof,

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (*) requires n'er basin management plans to be developed for each river basin district in order to achieve good ecological and chemical status, and it will contribute to mitigating the effects of floods. However, reducing the risk of floods is not one of the principal objectives of that Directive, nor does it take into account the future changes in the risk of flooding as a result of

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risk manageme

prevented. However, some human activities (such as

Suspensed. However, some human activities (such as prevented. However, some human activities (such as increasing human settlements and economic assets in the reduction of the natural water for the reduction of the prevented to the reduction of the reduction of

management

Effective flood prevention and mitigation require addition to coordination between Member States, eration with third countries. This is in line with Din 2000/60/EC and international principles of floo management as developed notably under the Nations Convention on the protection and use boundary water courses and international lakes, by Council Decision 95/308/EC (4), and any

> ventions (6) mobilises support and a Member States in the event of major including floods. Civil protection can i response to affected populations and redness and resilience.

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Flood Risk Management (Scotland) Act 2009 (asp 6)



Flood Risk Management (Scotland) Act 2009
Wider beine fits

more enabled istic

approach to managing

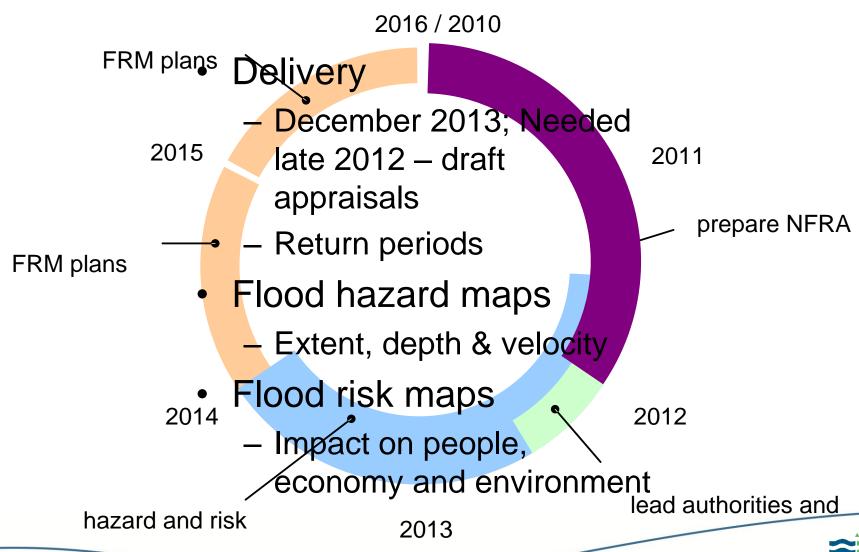
- Respons to Cood risk

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relationships between

- SEPA to prepare flood risk assess
- Flood risk assessments Consider the Consideration of the Consideration o
- Identification of potentially vulnerable areas and local plan districts SEPA to identify potentially vulnerable areas and local plan districts Potentially vulnerable areas and local plan districts: review Potentially vulnerable areas and local plan districts: regulations







FLOOD HAZARD MAPS

SOURCES:

FLUVIAL

COASTAL

SURFACE WATER

METHODS:

2D

DTM Projection (still water)

2D

RESOLUTION:

5m, 10m, 20m

n/a

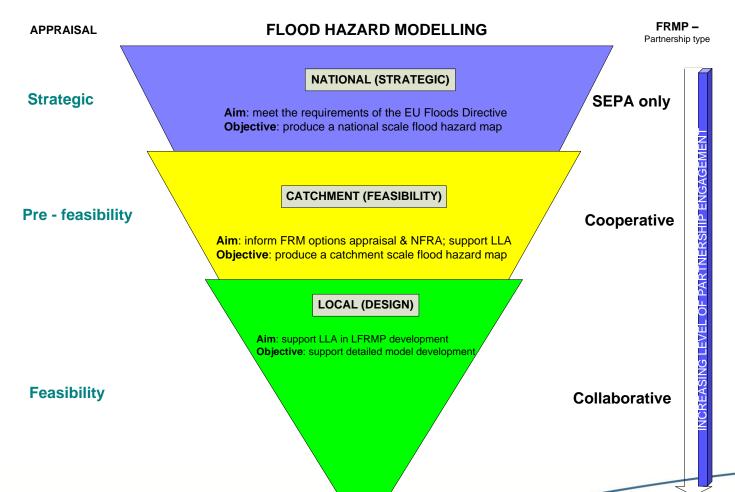
5m, 2m

SCENARIOS:

2, 5, 10, 30, 50, 100, 200, 1000, climate change, defended/undefended, sensitivity

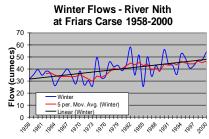


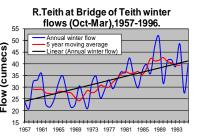
Modelling Strategy

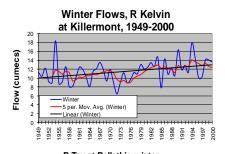




Inherent uncertainty



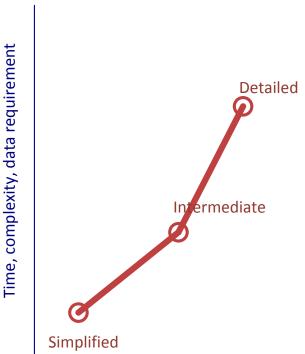








- Natural variability
- Necessary assumptions
- Data availability



Model Characteristics

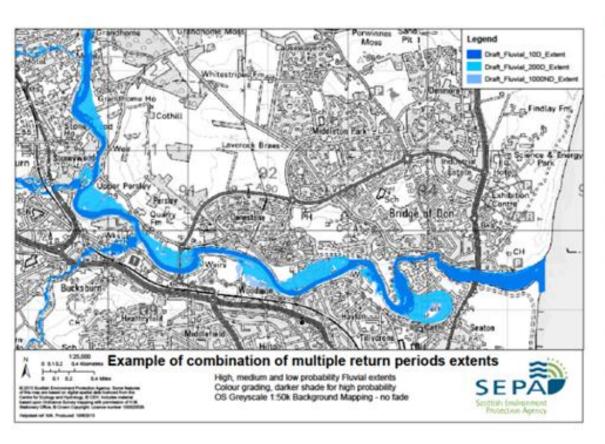


Fluvial Flood Hazard Map

- 2D Hydraulic Modelling
 - c. 5000 domains covering all catchments > 3km²
- Hydrology;
 - National Design Flow Dataset updated with SEPA hydrometric data
- DTM LiDAR/ NEXTMap mixed resolution grid
- Structures
 - Defences SFDAD
- Multiple runs



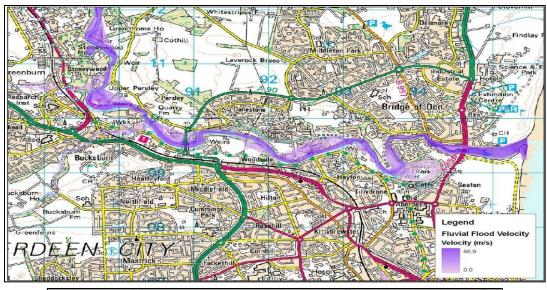
Fluvial Outputs: Extents & Depths







Fluvial Outputs: Velocity & Hazard



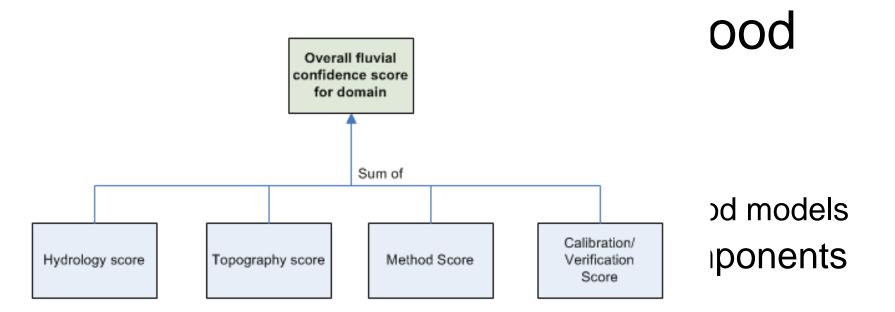




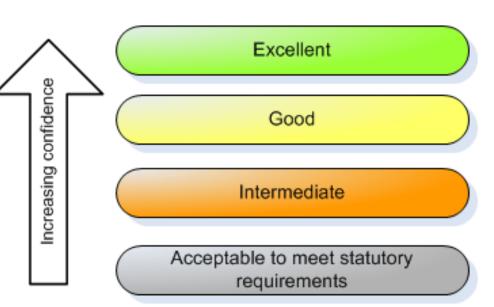
Fluvial Hazard Map: Limitations

- National strategic level modelling
- Hydrology based on CEH Flow Grid, implications of frequent return periods, i.e. Q10
- No bathymetric considerations
- Mixed resolution modelling grids due to availability of LiDAR
- Simplified representation of structures such as bridges, culverts, defences





- hydrology, topography, method.
- Considers model pe data, other accepted information.
- Confidence tracking and coastal hazard



Flood Risk Management Act www.sepa.org.uk/flooding.aspx

Future Development

- Prioritised development
 - Confidence, risk, benefit accrued
- Calibration
 - Gauged data
 - Flood event data capture
 - Historic event data
- Model guidance
 - Consistency



