Flood Risk Management (Scotland) Act

Flood Hazard Maps

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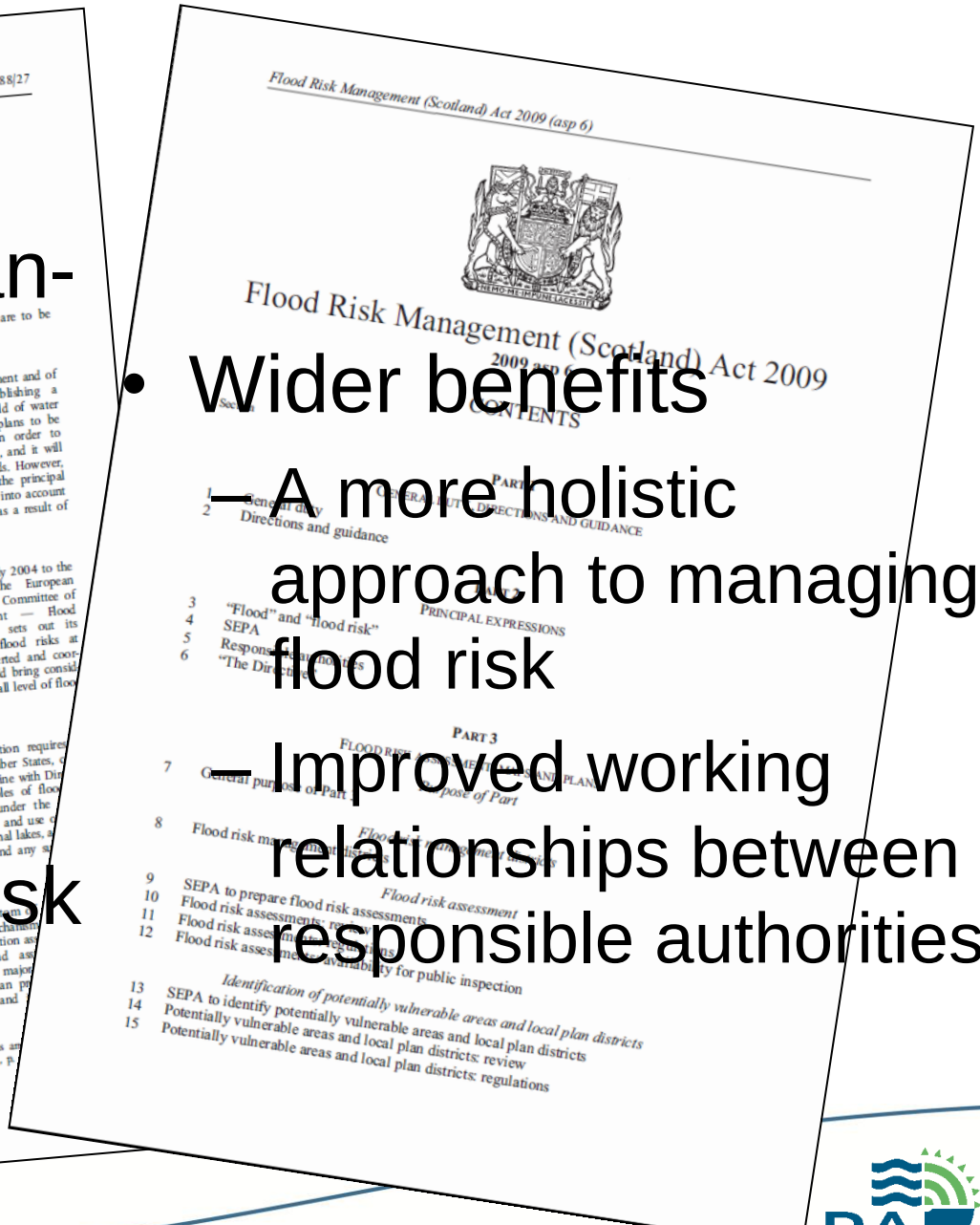
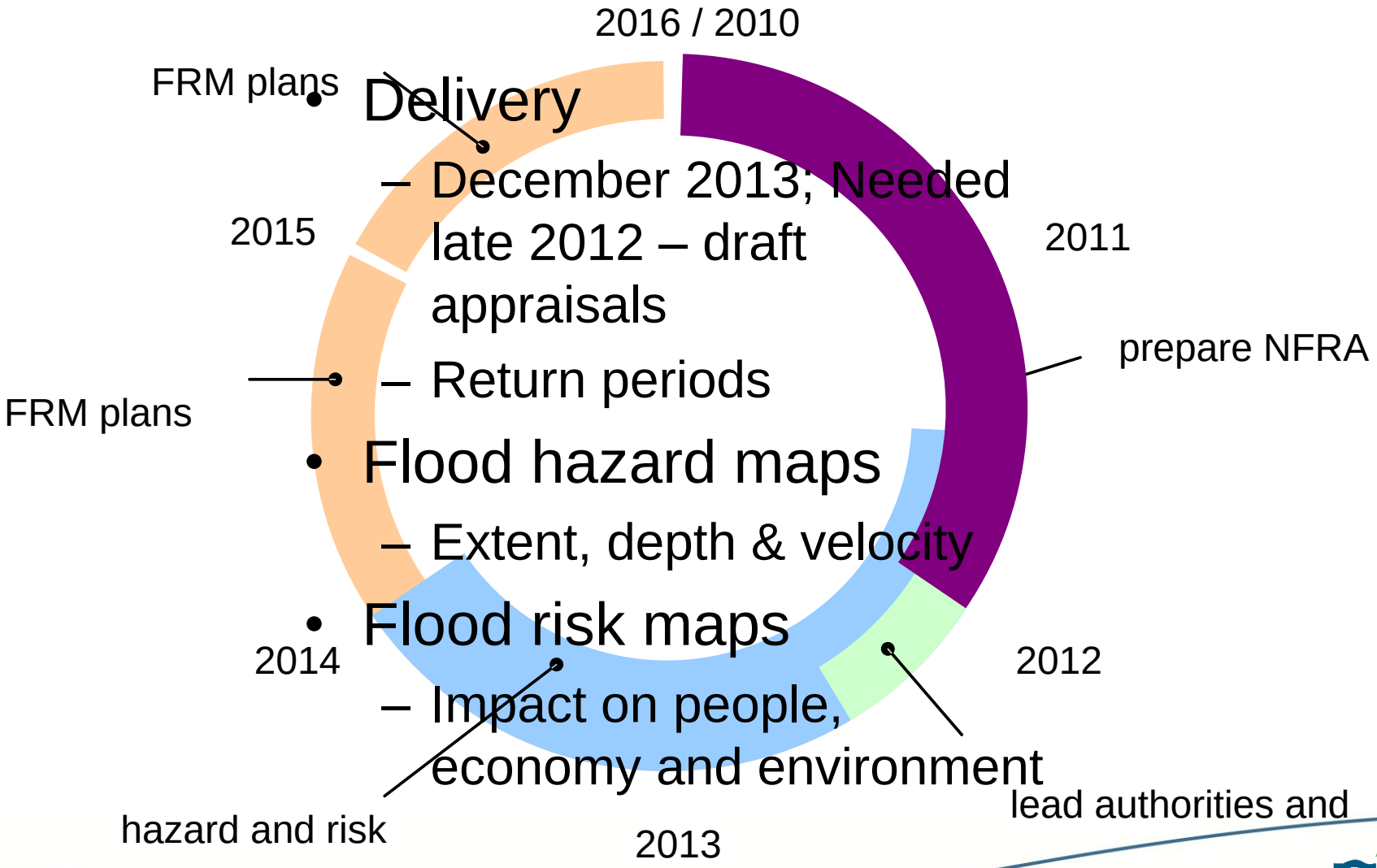
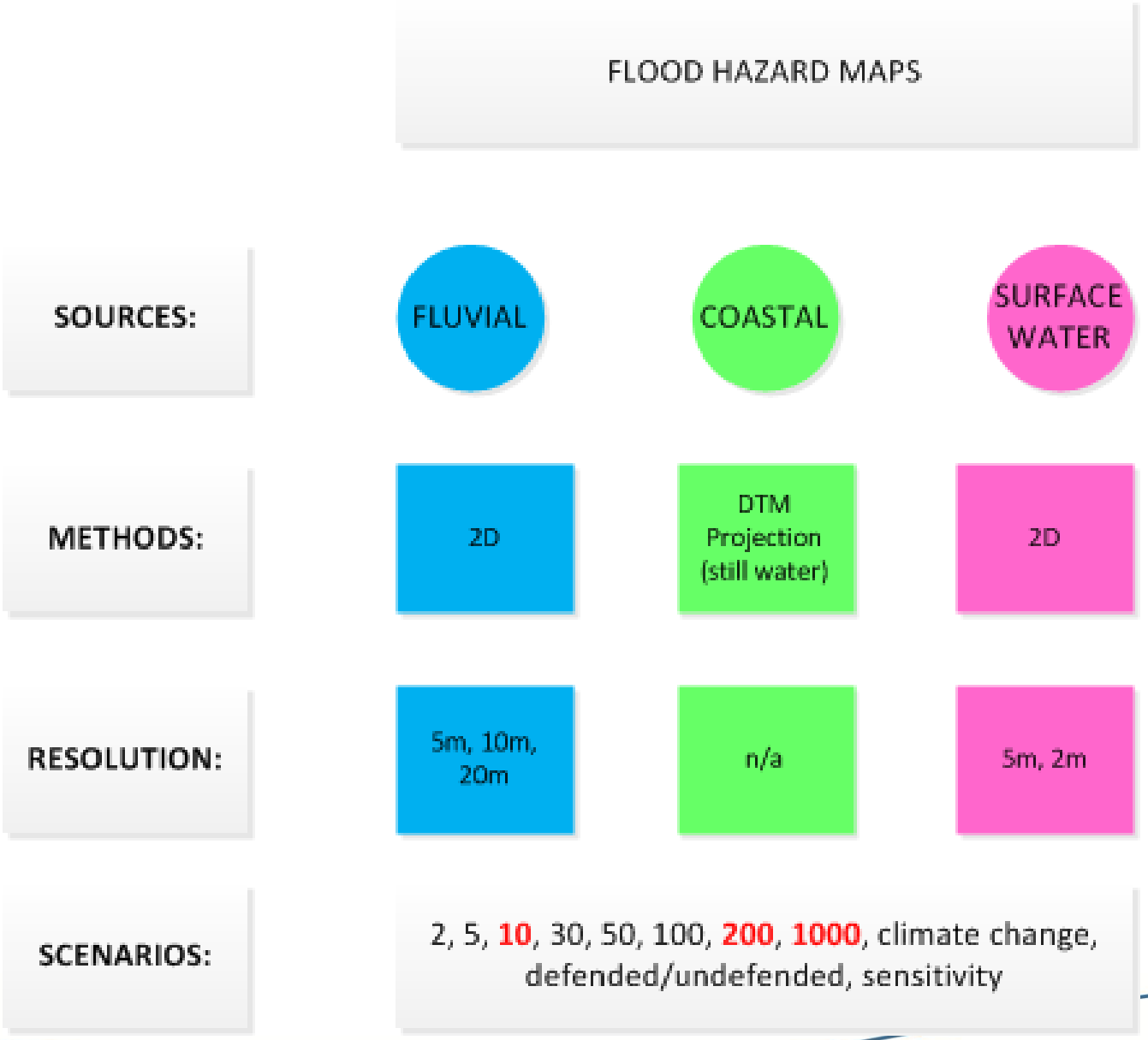
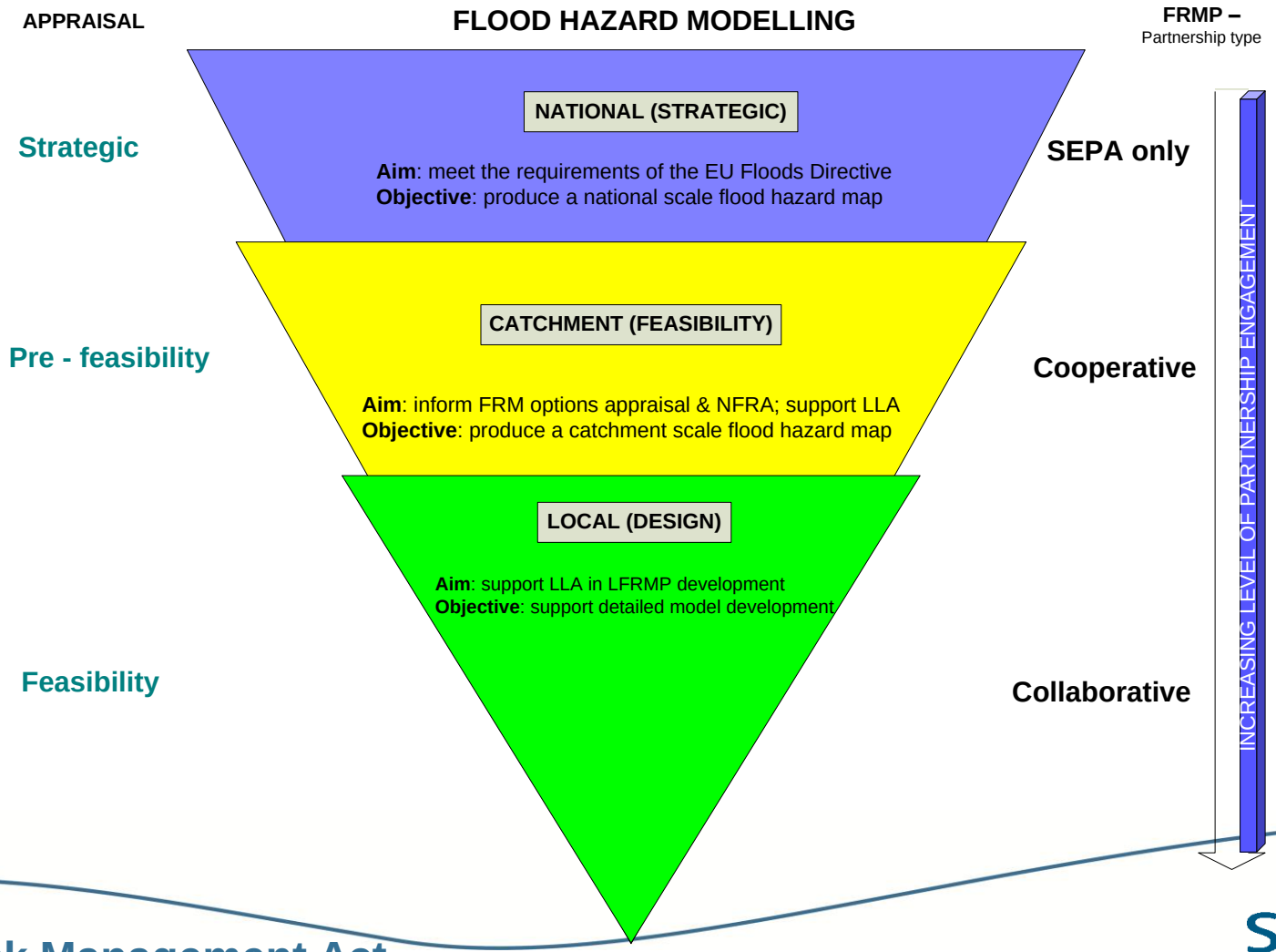
- Long-term process
- Risk-based and plan-led
- Improve the application of flood risk management functions
- Sustainable flood risk management
  - Catchment-based
- Wider benefits
  - A more holistic approach to managing flood risk
  - Improved working relationships between responsible authorities



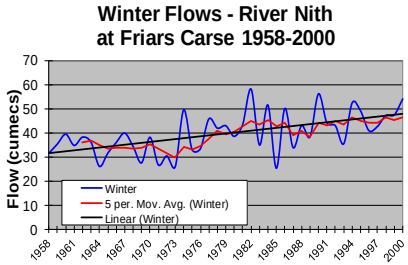

2016 / 2010
FRM plans
Delivery
– December 2013; Needed late 2012 – draft appraisals
2015
2011
prepare NFRA
FRM plans
– Return periods
Flood hazard maps
– Extent, depth & velocity
Flood risk maps
2014
2012
– Impact on people, economy and environment
hazard and risk
lead authorities and
2013

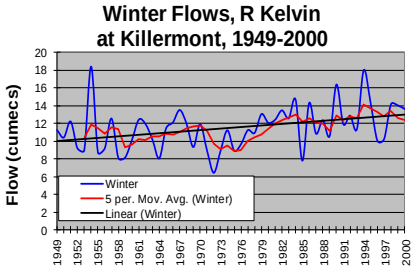

FLOOD HAZARD MAPS
SOURCES:
FLUVIAL
COASTAL
SURFACE WATER
METHODS:
2D
DTM Projection (still water)
2D
RESOLUTION:
5m, 10m, 20m
n/a
5m, 2m
SCENARIOS:
2, 5, 10, 30, 50, 100, 200, 1000, climate change, defended/undefended, sensitivity

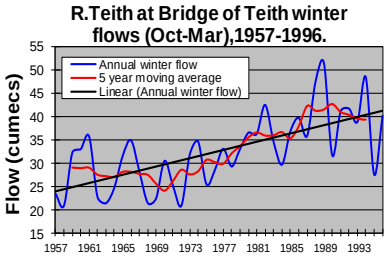
Modelling Strategy

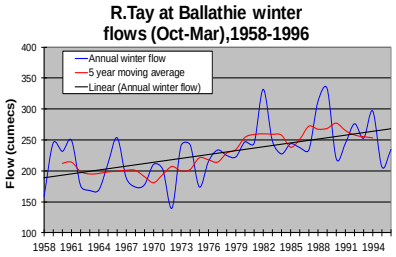


Inherent uncertainty

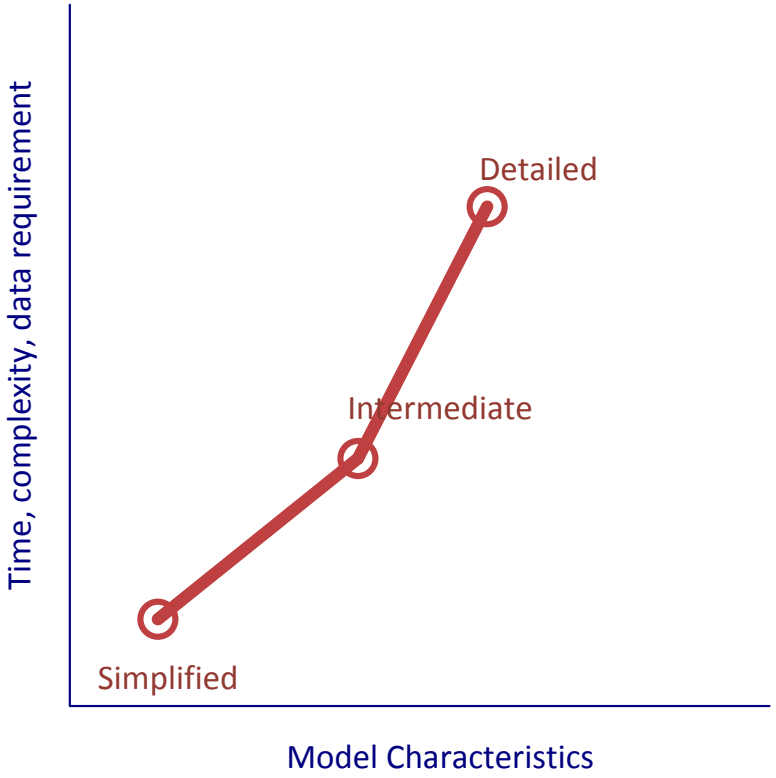






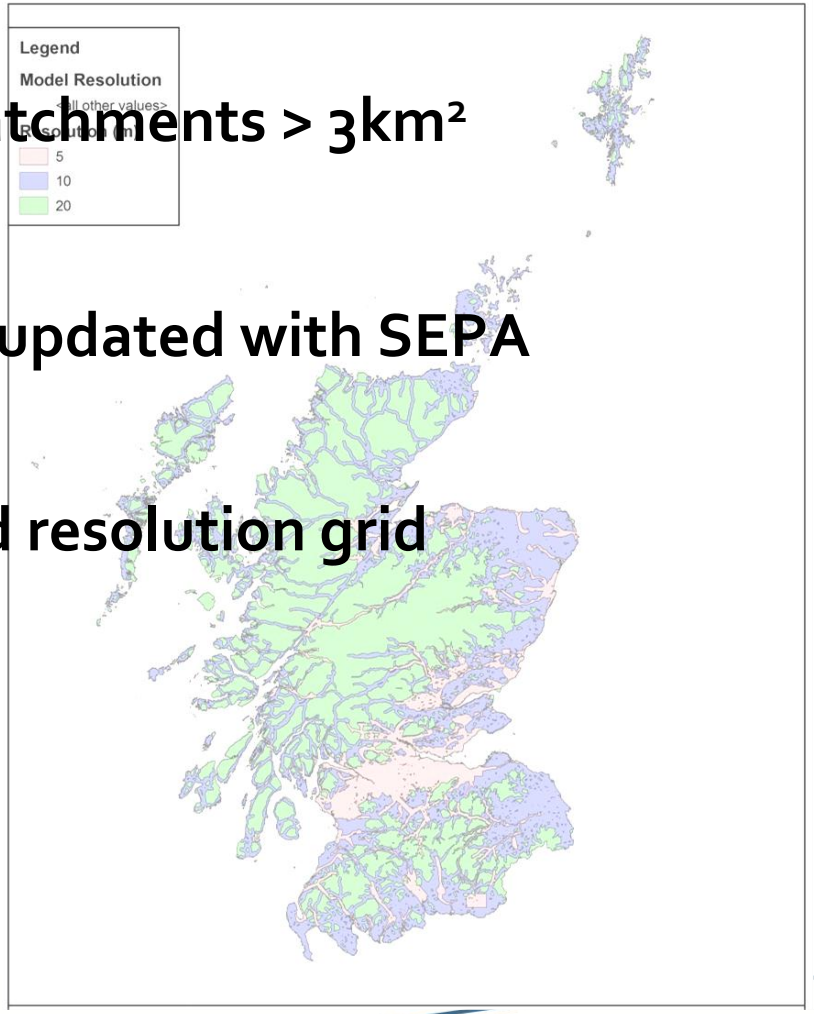


- Complex natural systems
  - Natural variability
- Necessary assumptions
- Data availability

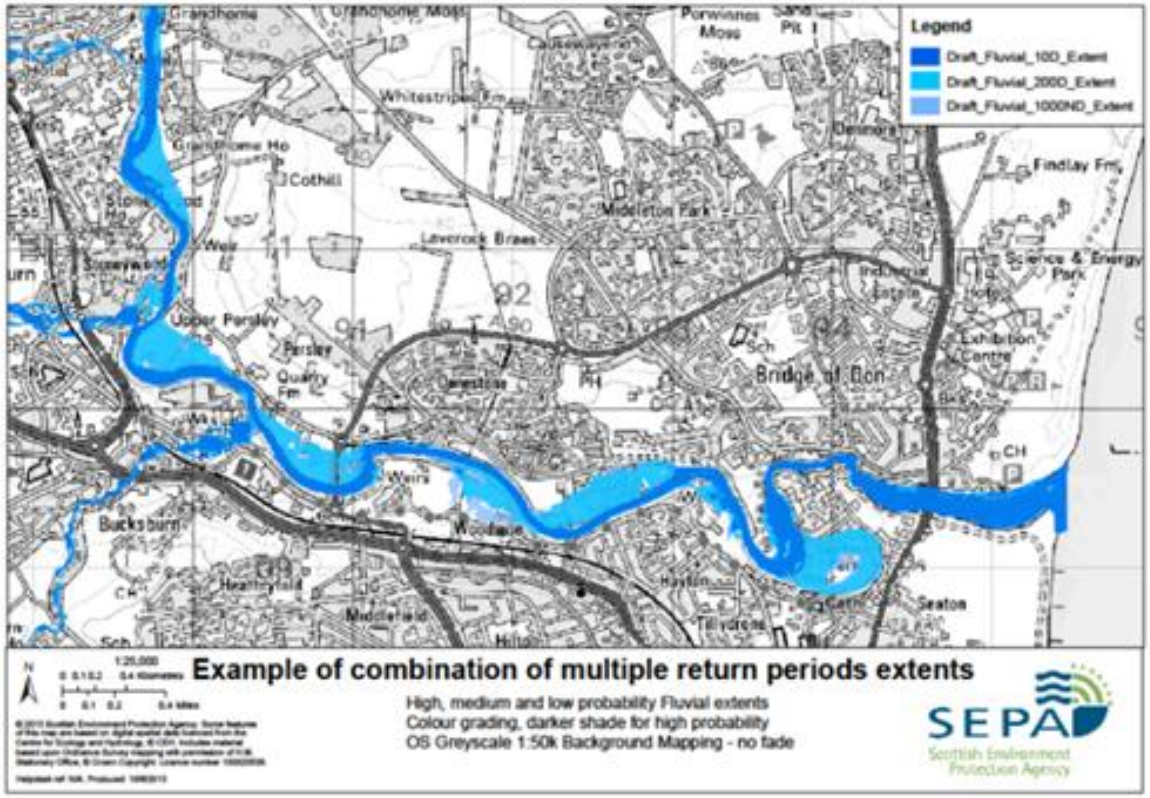


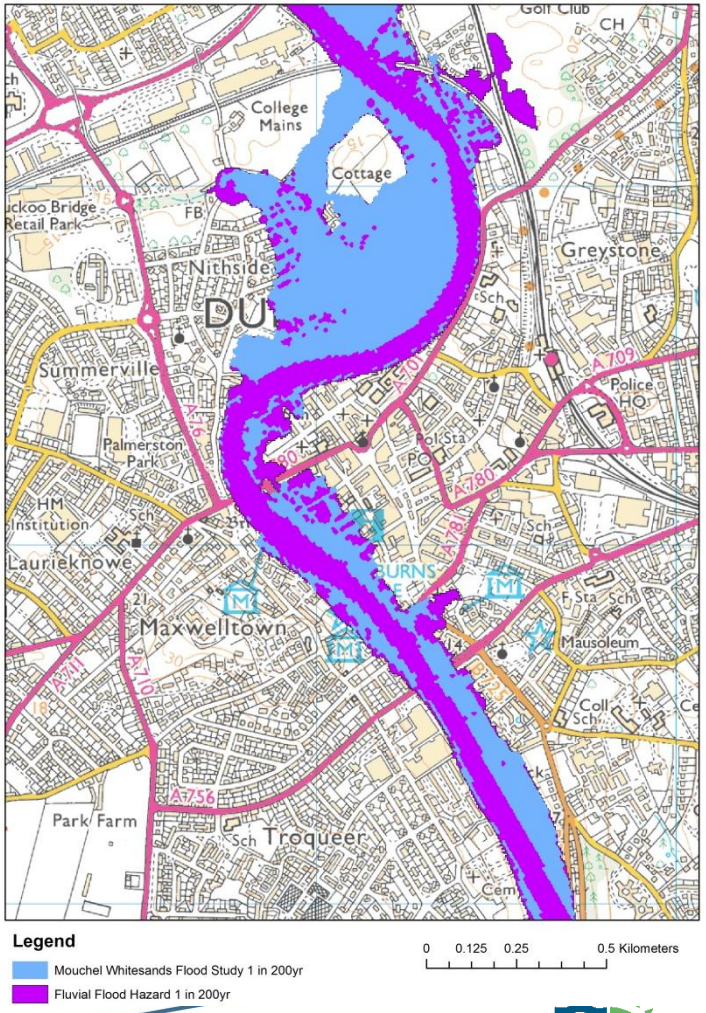
Fluvial Flood Hazard Map

- 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

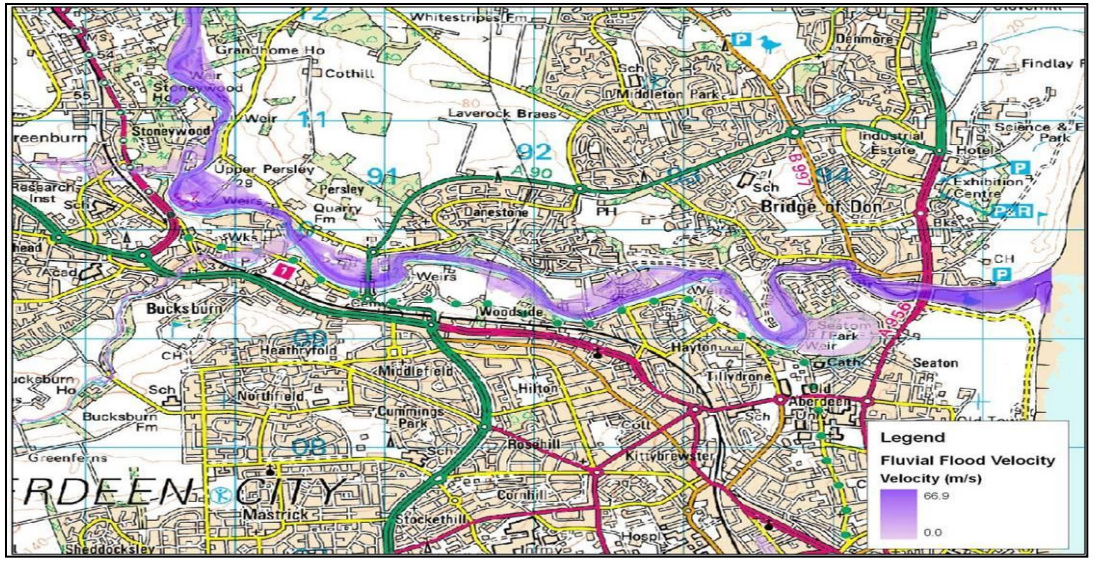


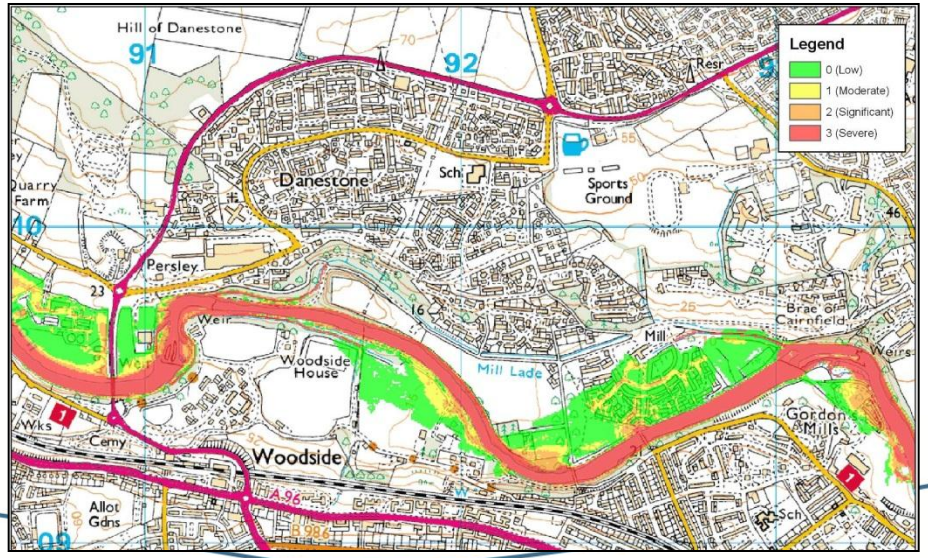
Fluvial Outputs: Extents & Depths





Fluvial Outputs: Velocity & Hazard

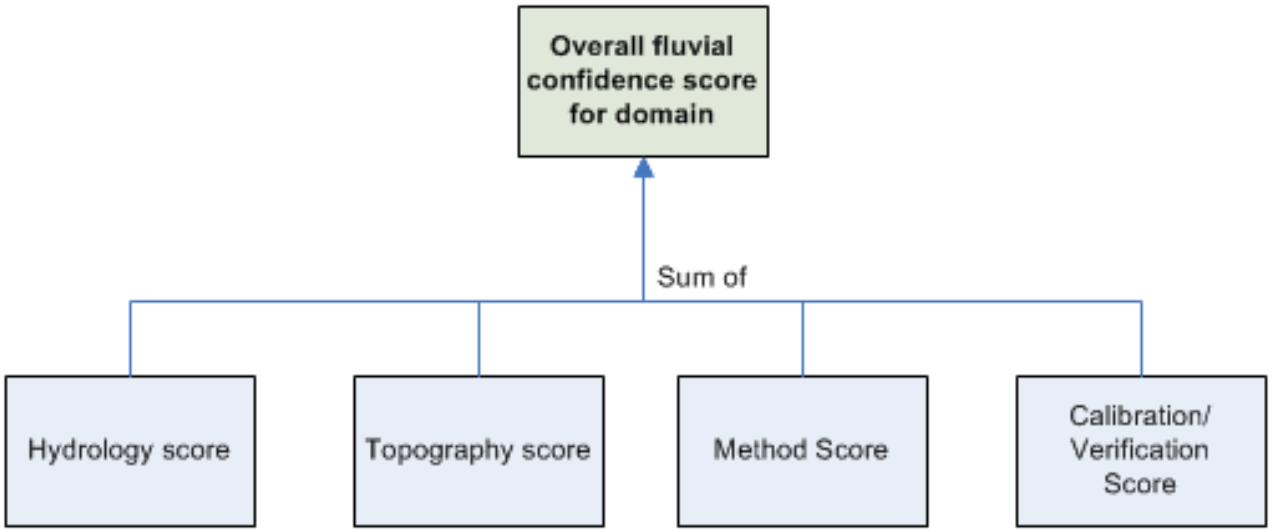




Fluvial Hazard Map: Limitations

- 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

ood

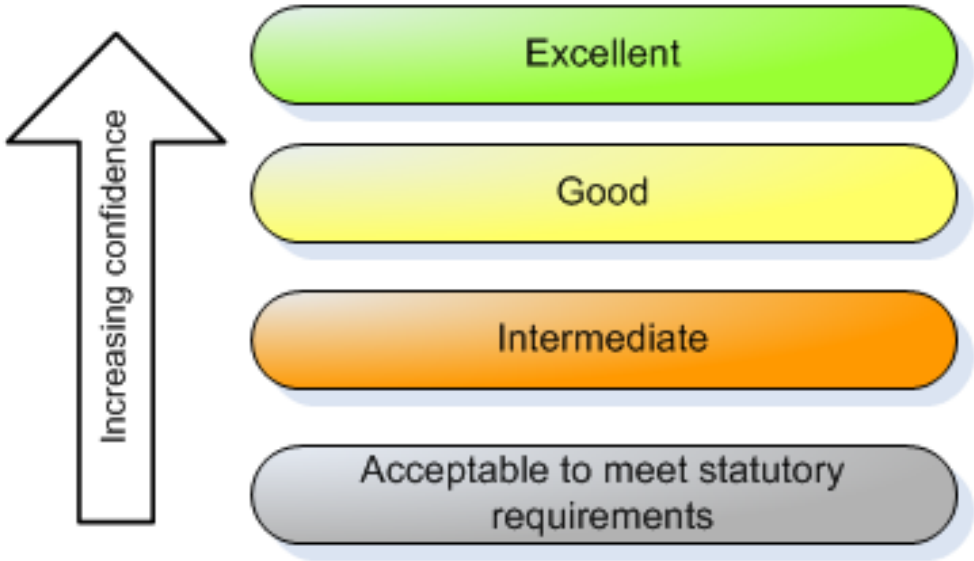


od models

ponents

  - hydrology, topography, method.

- Considers model pe
  data, other accepte
  information.
- Confidence tracking
  and coastal hazard



Future Development

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