

Who are we?

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Planning Skills

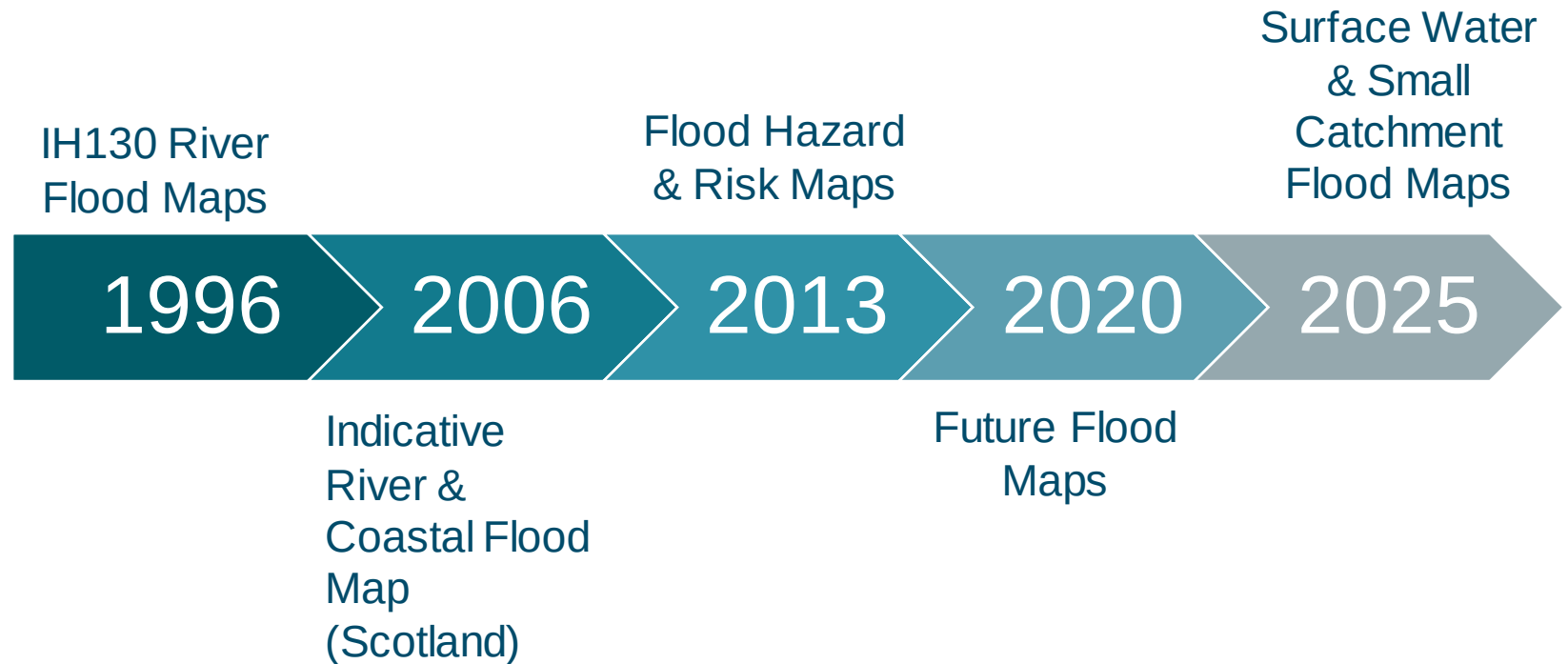
SEPA's new surface water and small watercourses flood maps

For the future of our environment

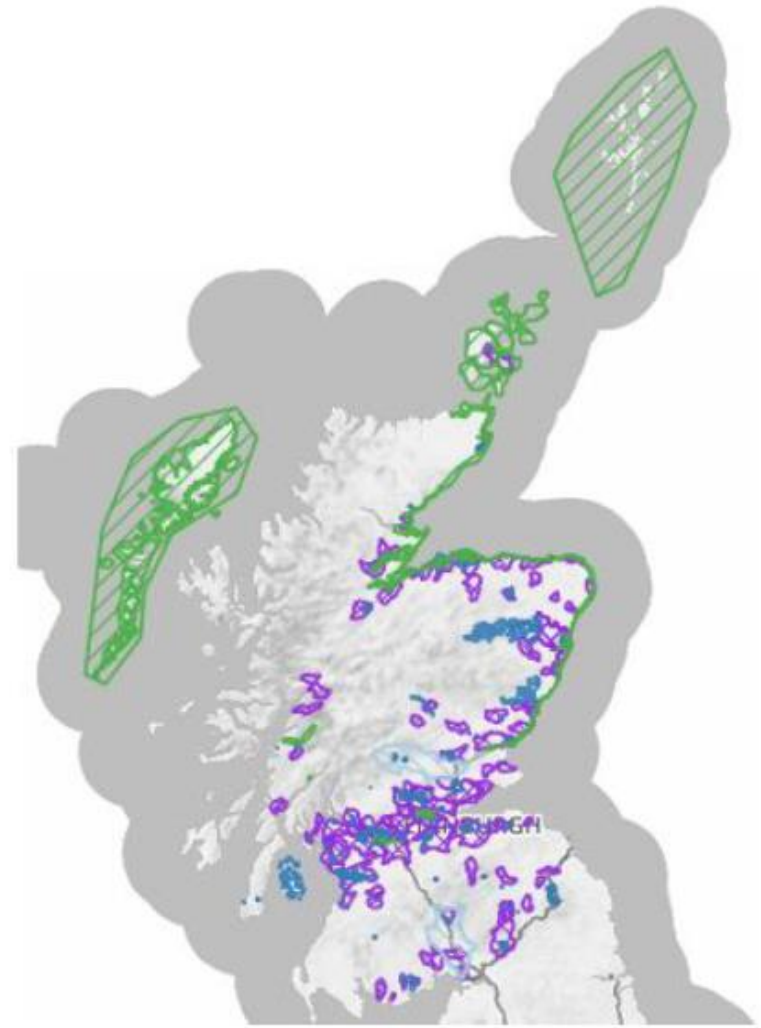
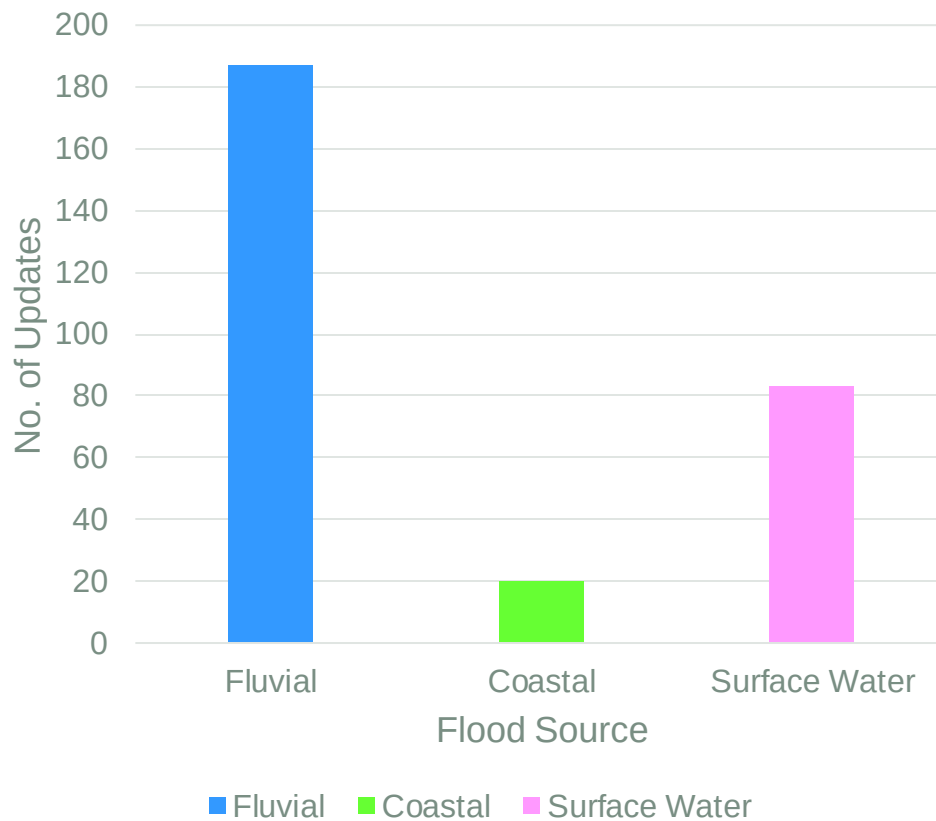
Background to SEPA's flood hazard maps



A History Of SEPA Flood Hazard Maps



Flood Map Updates



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Accessing SEPA Flood Map Data



Partner Organisations

- Majority of our flooding data has restrictions on its use due to third party data licensing
- Access provided to organisations with statutory FRM / civil contingencies under licence
- Sub Licensing process for partner contractors



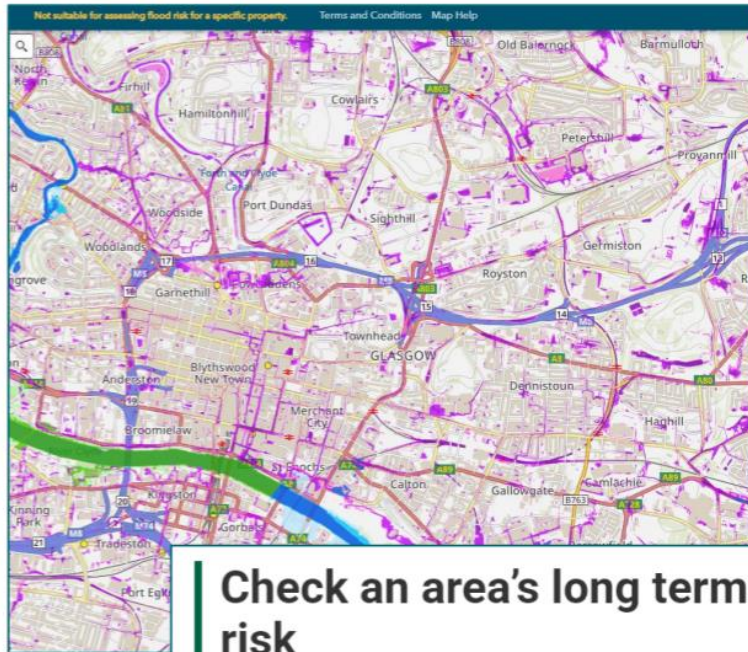
Flooding Open Datasets



- **Tranche 1 (November 2022):**
 - Published Flood Hazard Maps (v2.0 onwards)
 - FRM Local Plan Districts (v2 onwards)
 - Potential Vulnerable Areas (PVA) (v2 onwards)
 - FRM Target Areas
- **Tranche 2 (March 2023):**
 - Flood Warning Areas
 - Flood Alert Areas

SW&SW: Reflections, lessons learned and the road ahead

Where to access the maps



Check an area's long term flood risk

i This service tells you about long term flood risk for an area, not live flooding. To find out about the flood situation right now, visit our [live flood updates](#).

You can use this service to:

- Check for long term flood risk in an area in Scotland and view it on a map
- Check a [planning proposal](#) for flood risk against our Future Flood Maps


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Download SEPA Flood Data

[Back SEPA Data publication](#)

SEPA Flood Maps

SEPA Coastal Flood Maps v3.0 – ESRI Geodatabase

156 MB Zip file (1.07 GB uncompressed) contains:

- 1 x .GDB file
- 1 x Dataset guidance document (PDF)
- 2 x Dataset attribution statements (PDF)
- 1 x Release Notes (PDF)

[Download](#)

SEPA River Flood Maps v3.0 – ESRI Geodatabase

1.15 GB Zip file (8.12 GB uncompressed) contains:

- 1 x .GDB file
- 1 x Dataset guidance document (PDF)
- 2 x Dataset attribution statements (PDF)
- 1 x Release Notes (PDF)

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SEPA Surface Water & Small Watercourses Flood Maps (Extent) v3.0 – ESRI Geodatabase

1.94 GB Zip file (7.1 GB uncompressed) contains:

- 1 x .GDB file
- 1 x Dataset guidance document (PDF)
- 2 x Dataset attribution statements (PDF)
- 1 x Release Notes (PDF)

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SEPA Surface Water & Small Watercourses Flood Maps (Depth High Prob) v3.0 – ESRI Geodatabase

651 MB Zip file (4.74 GB uncompressed) contains:

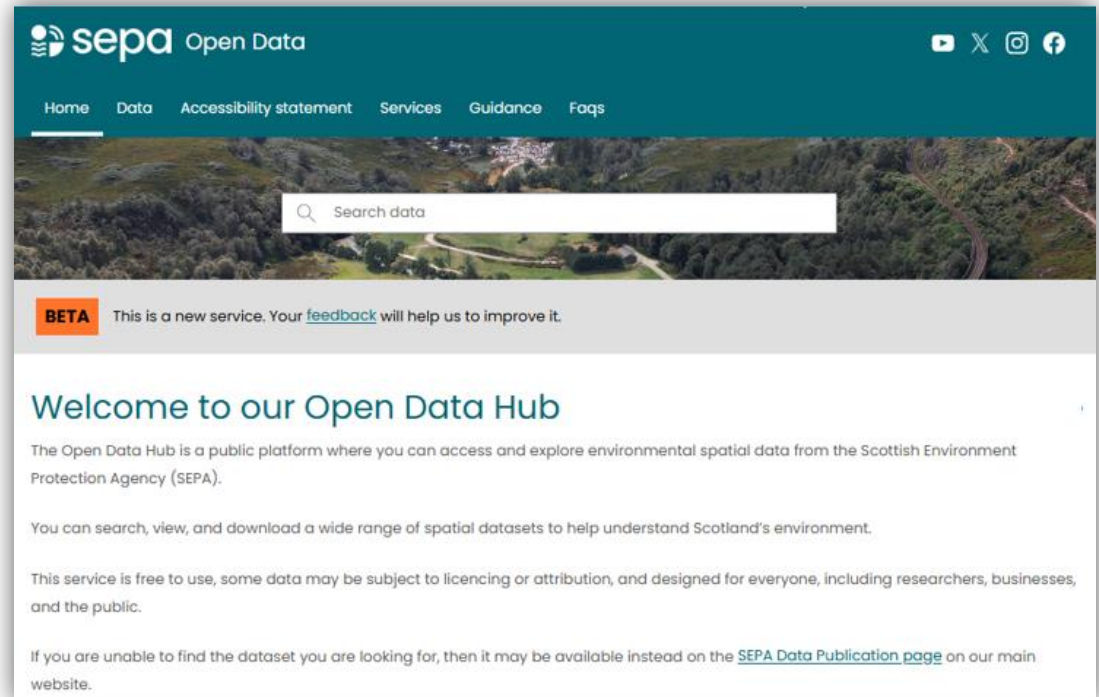
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Planning Skills - SEPA's new surface water and small watercourses flood maps

SEPA Open Data Hub

- New spatial data platform for Open Government Licence data published by SEPA.
- Free to use
- No sign-up required
- Will be accessed through SEPA's website
- Public Beta Spring 2025



Who is the Spatial Hub for?

- Anyone that uses our data.
- Anticipate mainly professional users, local authorities and partner agencies, but other organisations, researchers, students, journalists, charities and communities can have an interest in using and analysing our data.

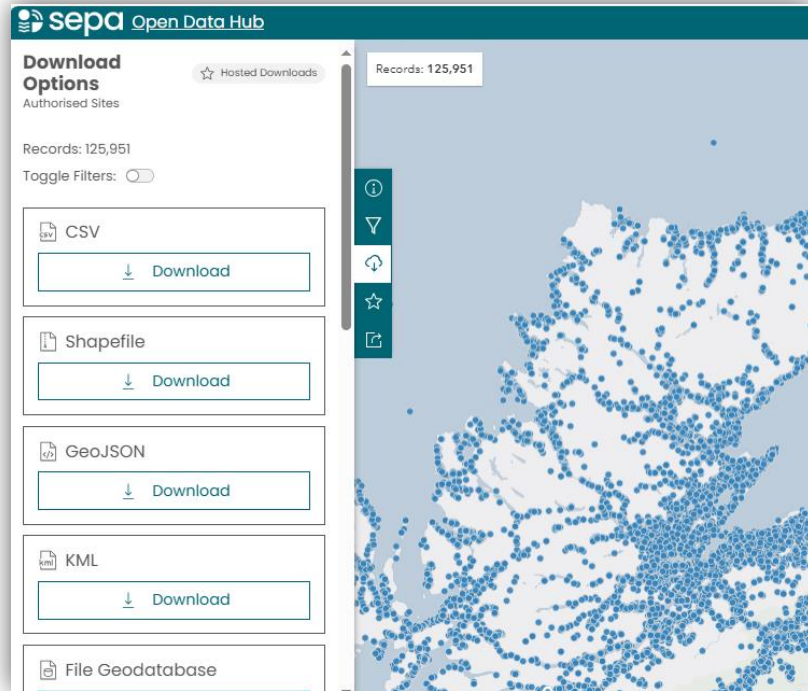
How will they use it?

- Anyone with access to the internet can view the data on the Hub itself or download it.
- GIS system users and developers can link to the web services and use the data in their own systems.

Planning Skills - SEPA's new surface water and small watercourses flood maps

SEPA Open Data Hub - Briefing

What does it offer?



Users can:

- Search for data in a catalogue (INSPIRE-compliant metadata)
- Explore it in a map viewer and interrogate features
- View as a table where relevant
- Filter data to their needs
- Download a local copy in a choice of formats
- Access web service APIs to use in GIS and analysis tools and their own applications (shapes and features)

For the future of our environment

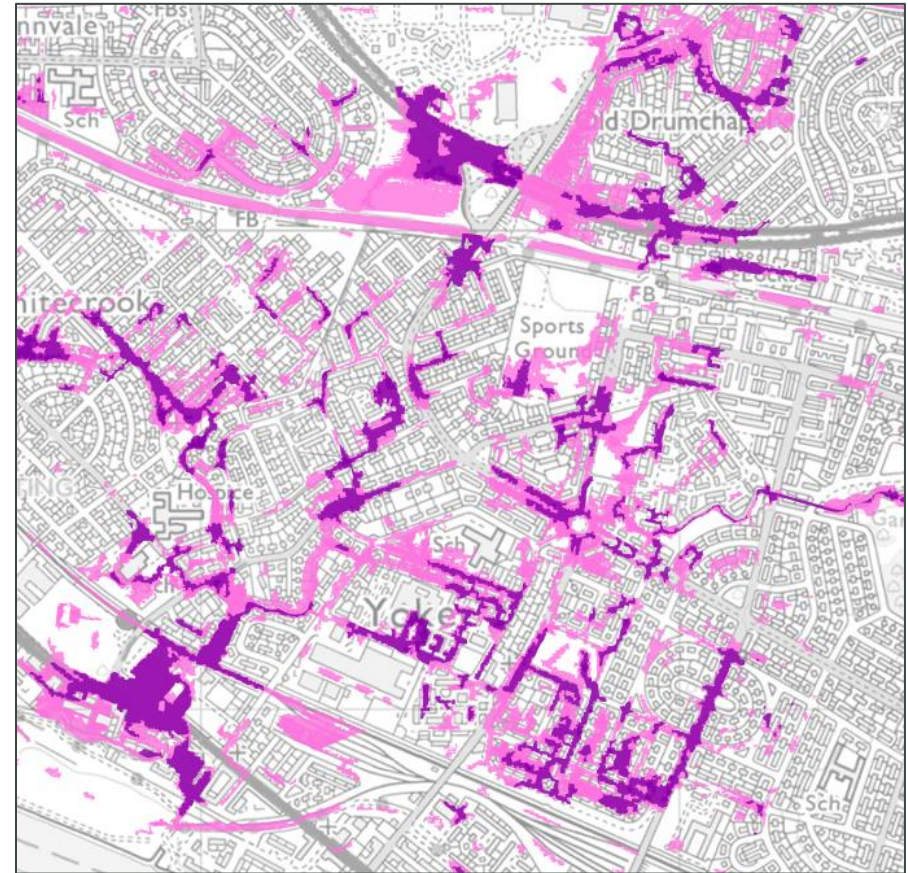
Our new surface water and small watercourse flood hazard maps



Why new flood maps?

Drivers for change

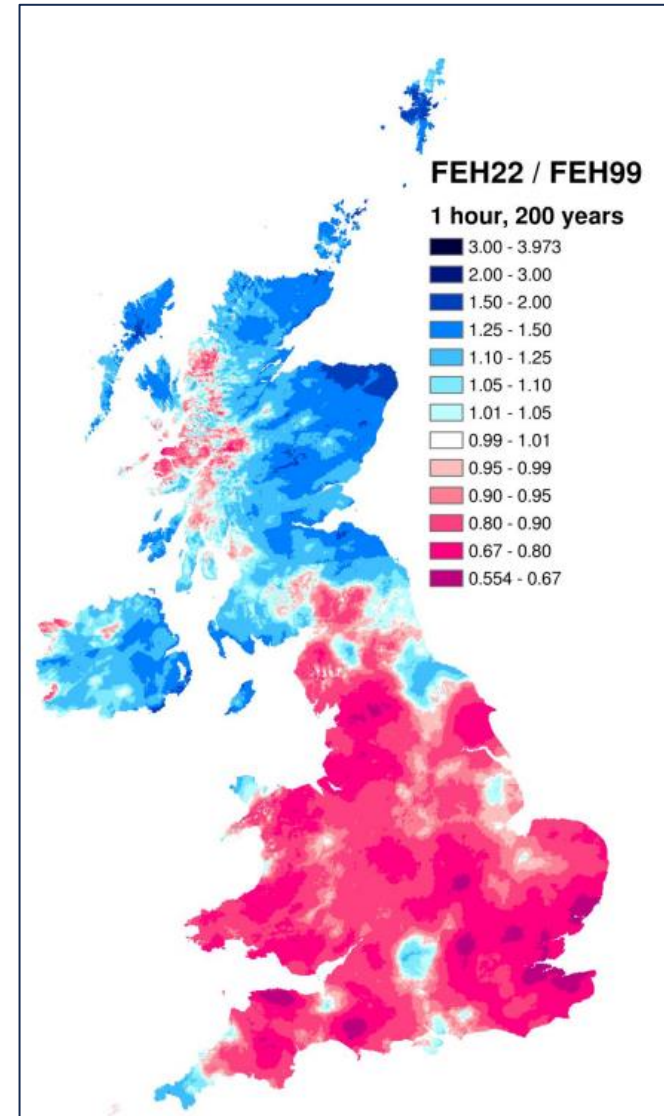
- Significant data, science & modelling changes since current maps developed (2011-13)
- Revised design rainfall estimates from the Flood Estimation Handbook (FEH)
- Revised climate projections from the Met Office
- Significant increase in available LiDAR coverage



Why new flood maps?

Drivers for change

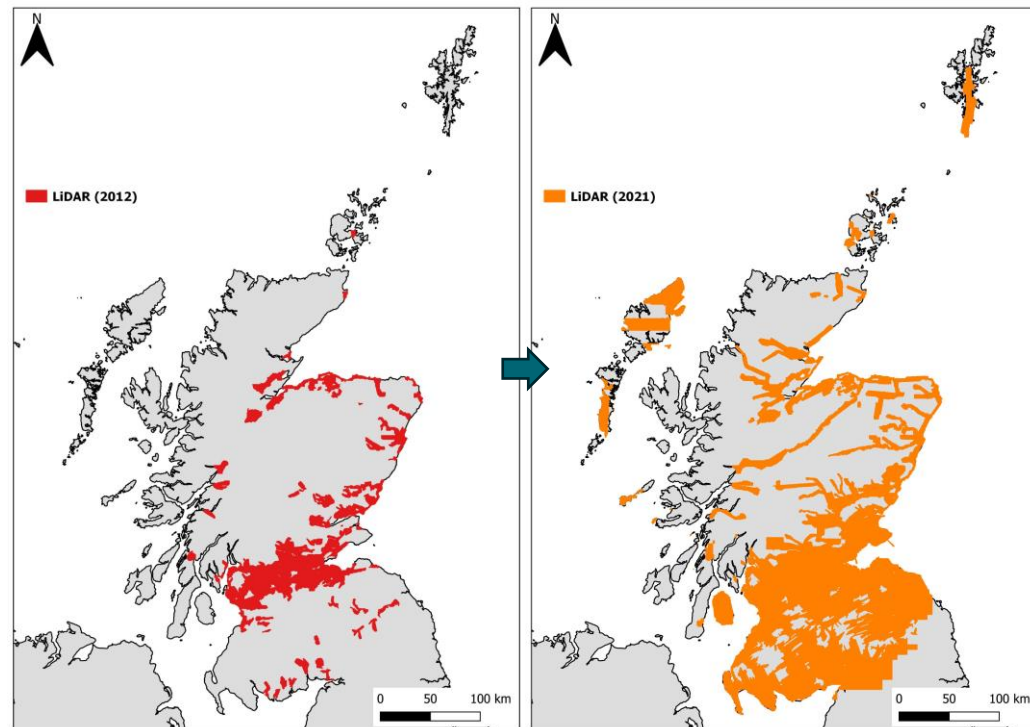
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Why new flood maps?

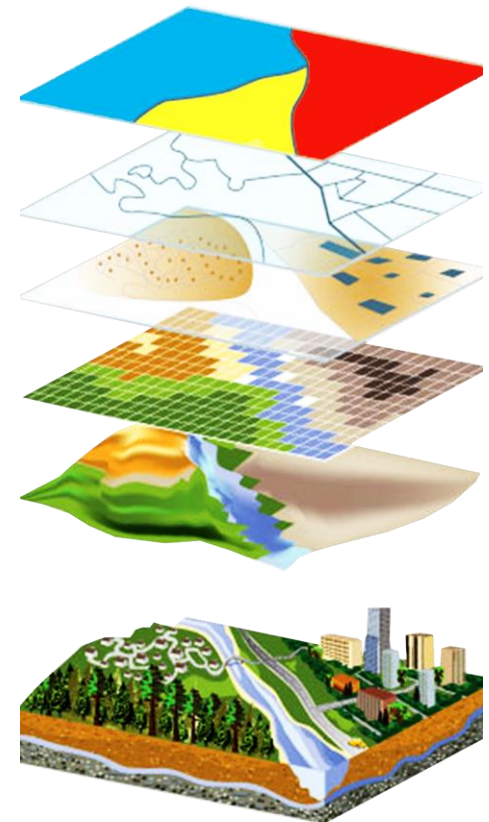
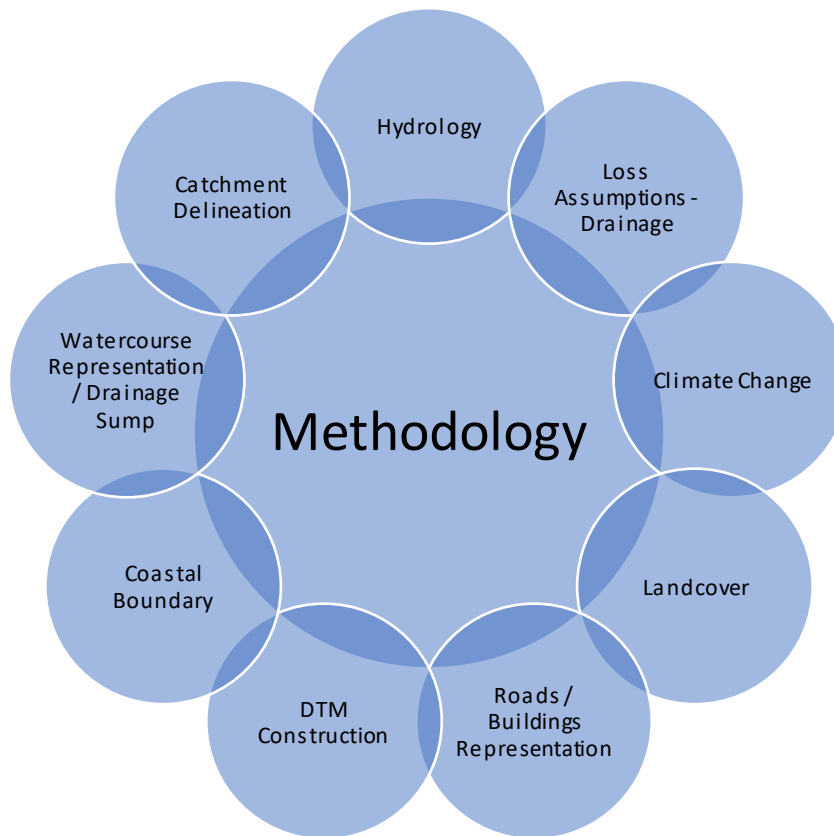
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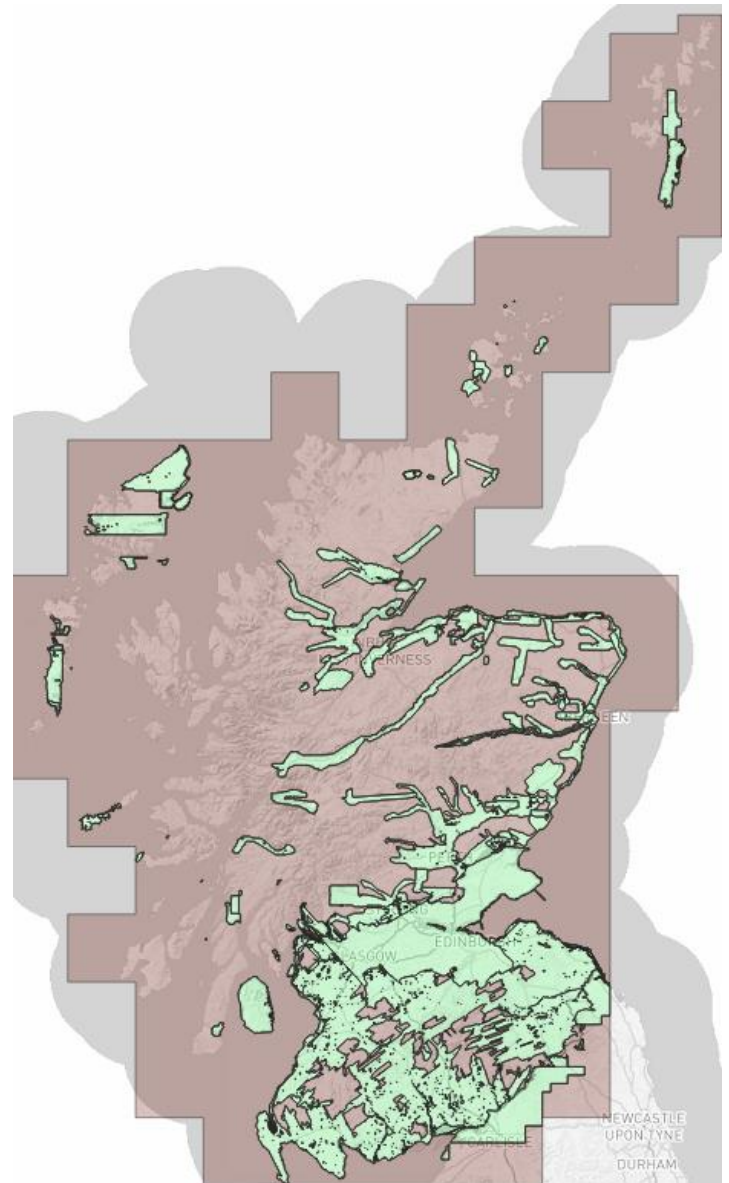
Developing the modelling approaches

Representing Scotland in a model



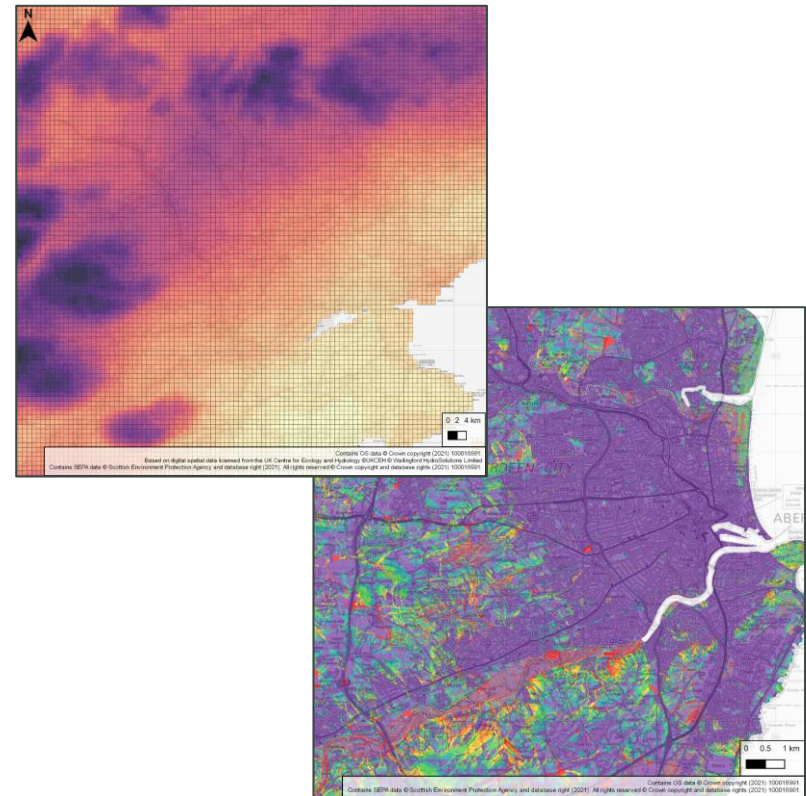
Digital Terrain Model

- New 2m LiDAR and Photogrammetry DTM
- Buildings added into the digital landscape



Rainfall

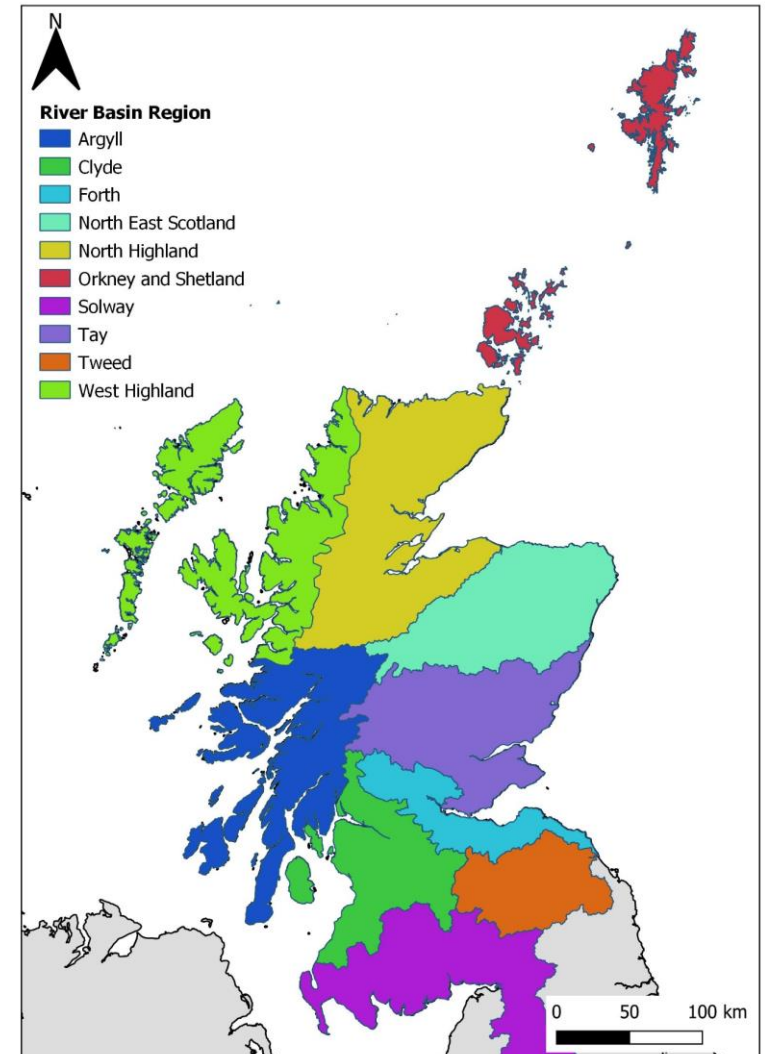
- Based on latest rainfall estimates, FEH 22
- Change to multiple storm durations:
 - 1-hour, 6-hour, 12-hour
 - Post processed storm mosaic
- 9no. present day rainfall scenarios modelled



Climate Change

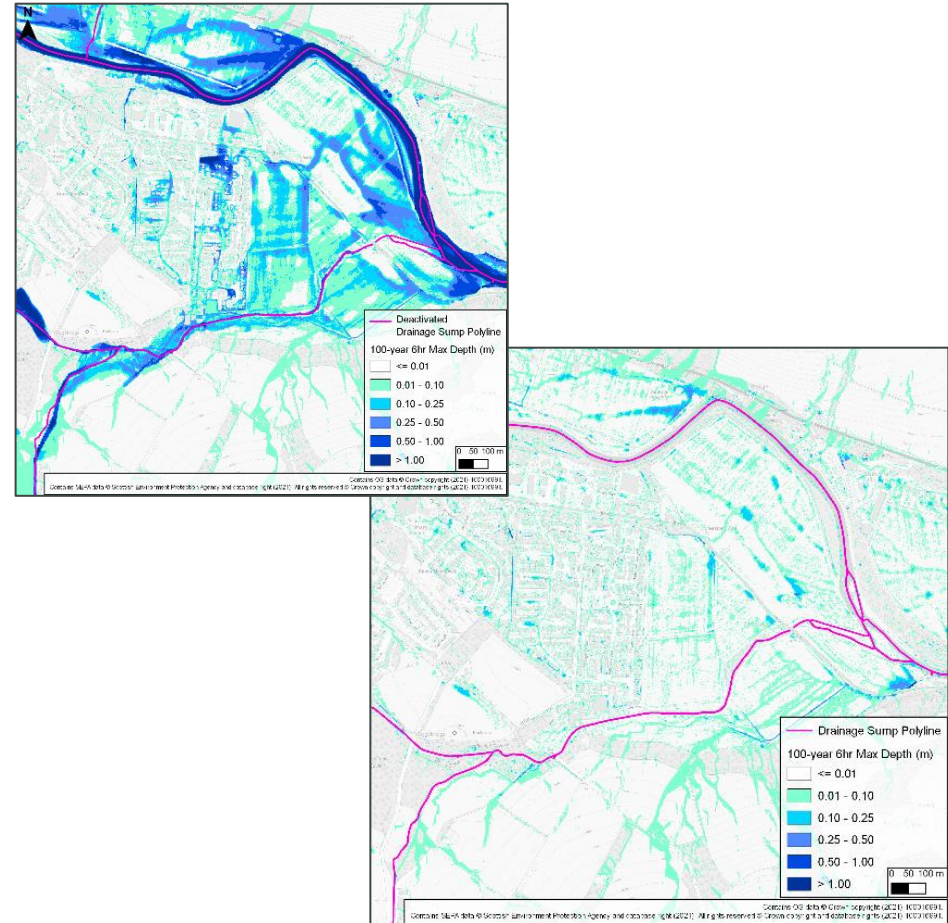
Informing climate resilient places

- Latest research from FUTURE-DRAINAGE, rainfall uplifts based on UKCP18
- Mean rainfall uplifts calculated per river basin
- Uplifts vary with storm duration, and return period
- 8no. future climate scenarios modelled

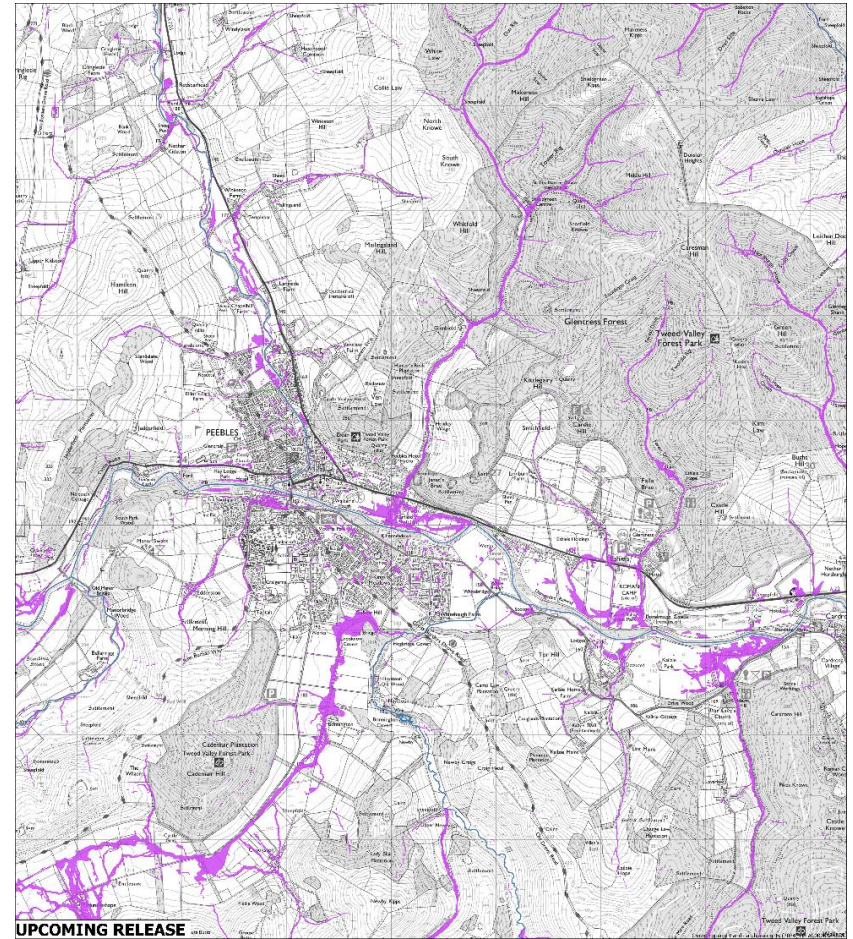
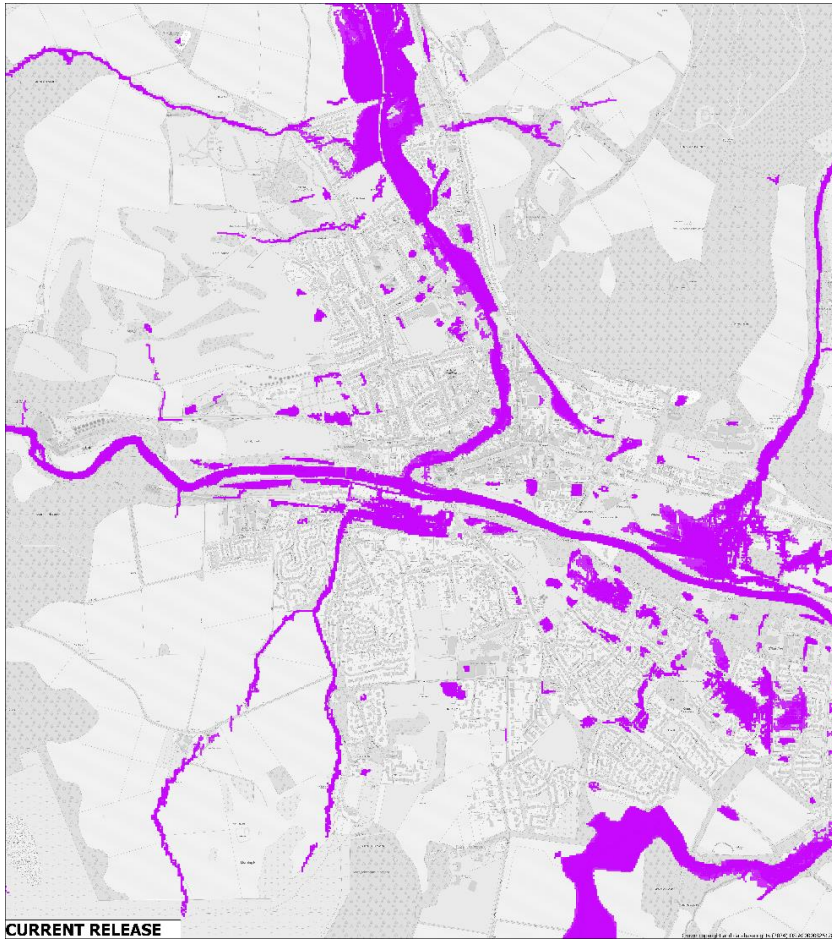


Removal of fluvial influence

- Adoption of a 'drainage sump' tested in piloting
- Drains surface water reaching major watercourses with a catchment area $>10\text{km}^2$
- Aims to reduce double counting of flood risk from both surface water and river flooding

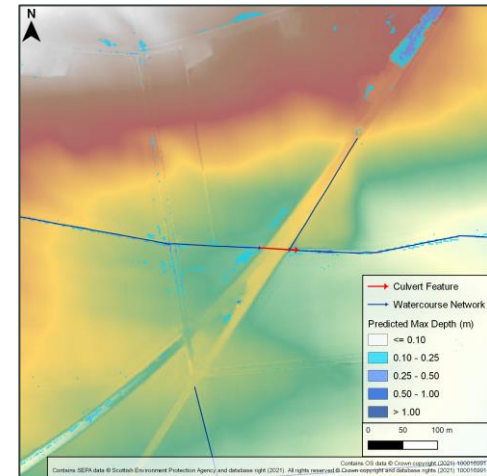
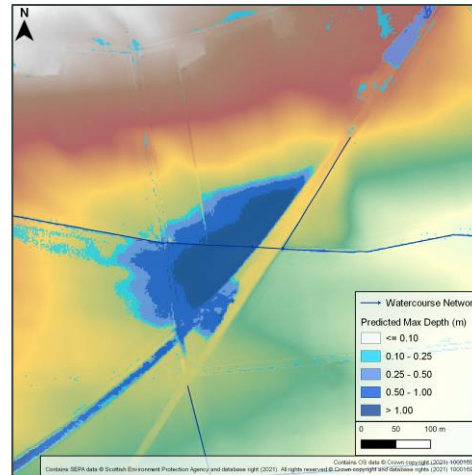


Planning Skills - SEPA's new surface water and small watercourses flood maps

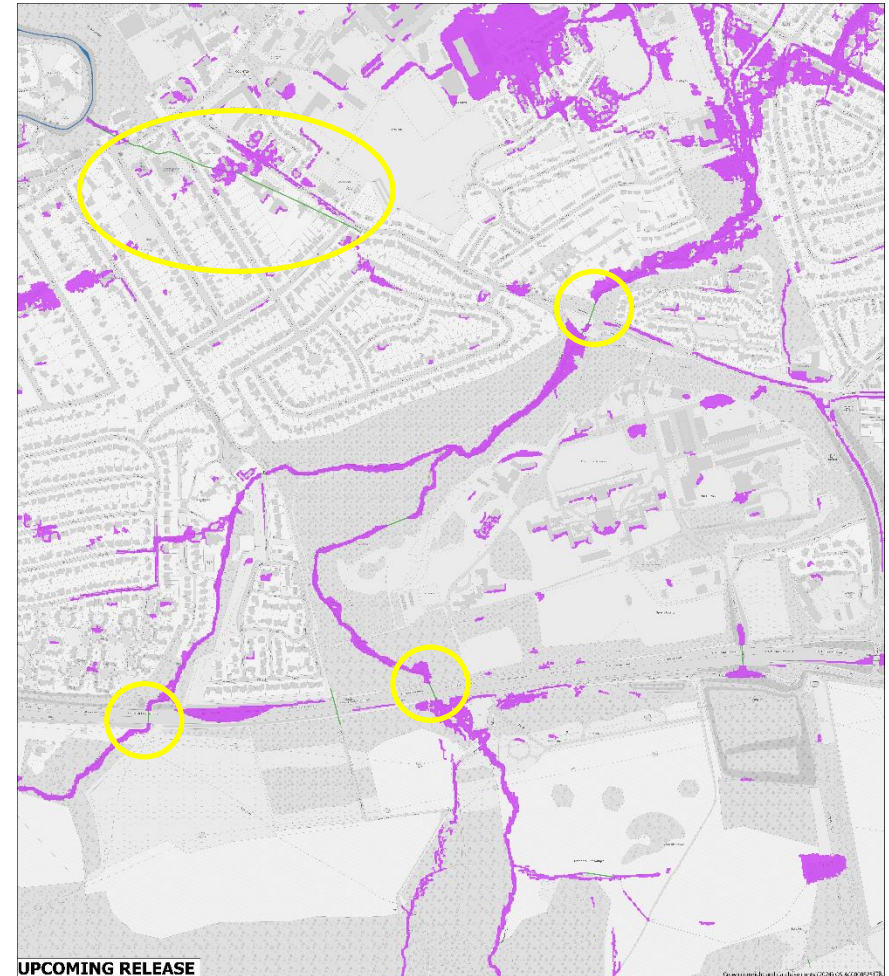
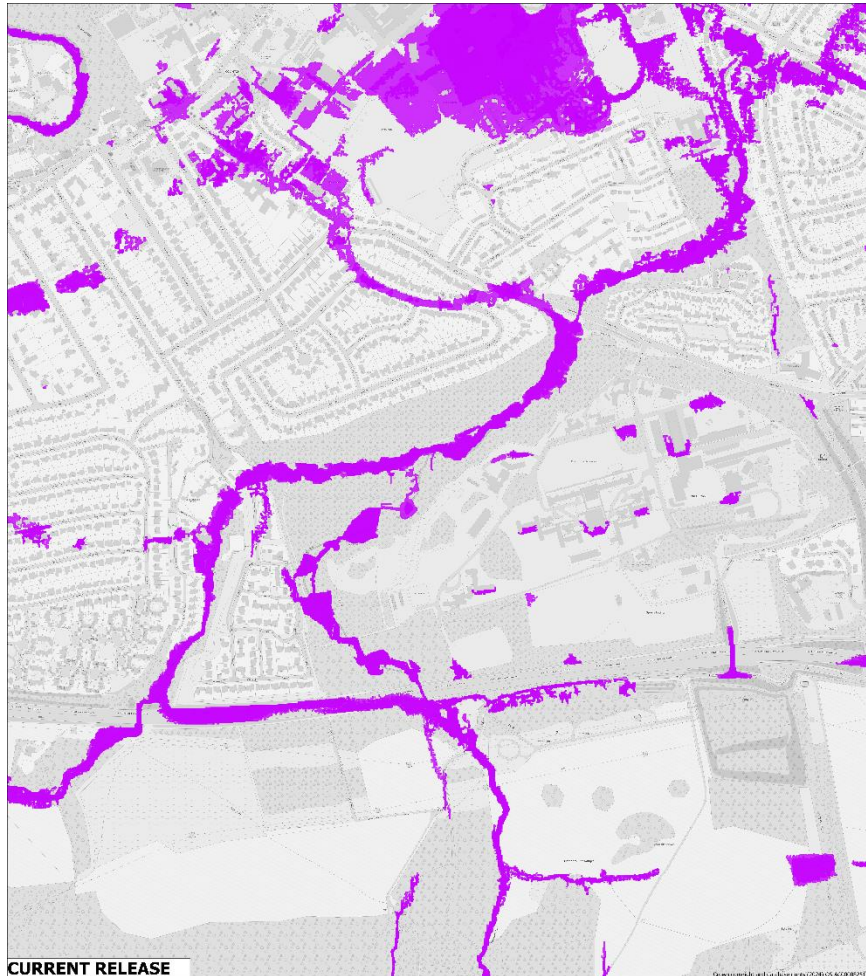


Improved structure representation

- ~51,000 structures incorporated from local & national asset databases
- Explicit representation of culverts
- Walls & flood defences generally not included unless in the DTM due to scale of modelling

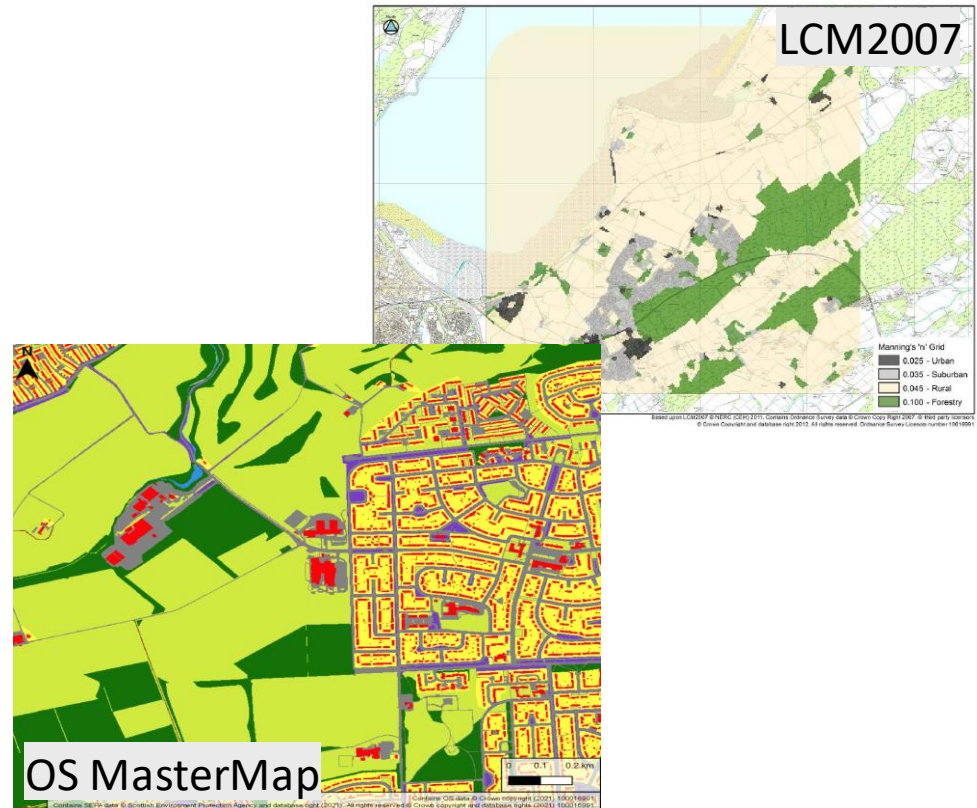


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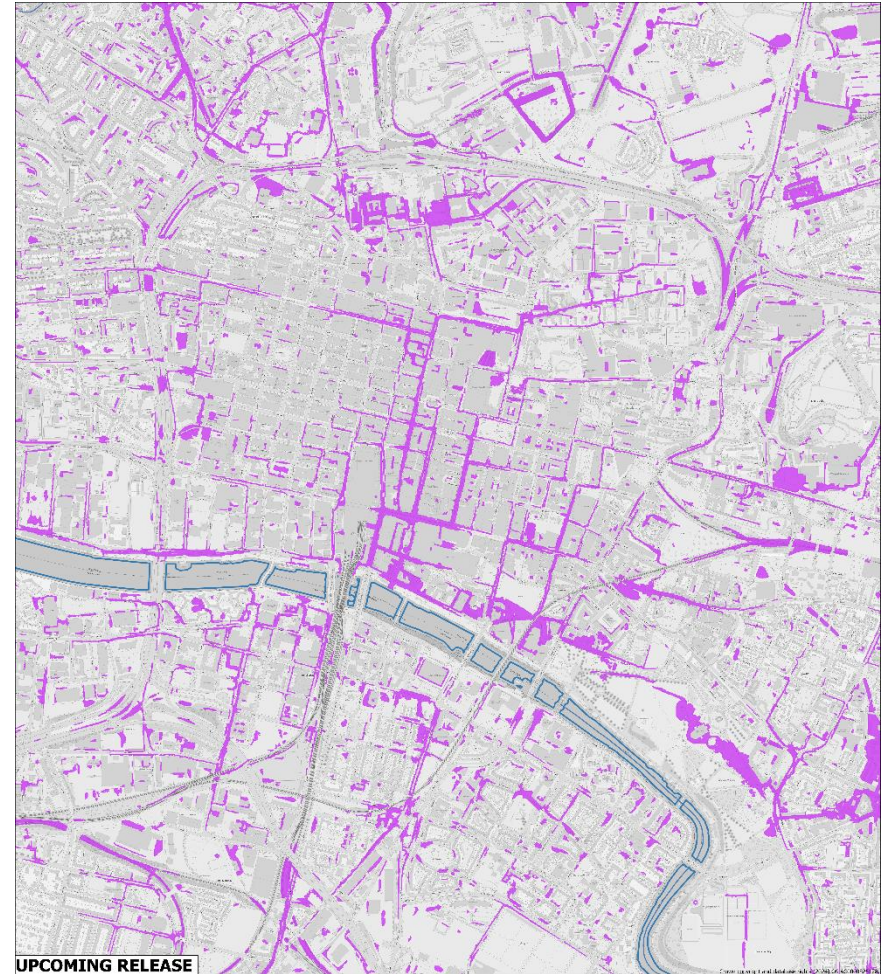
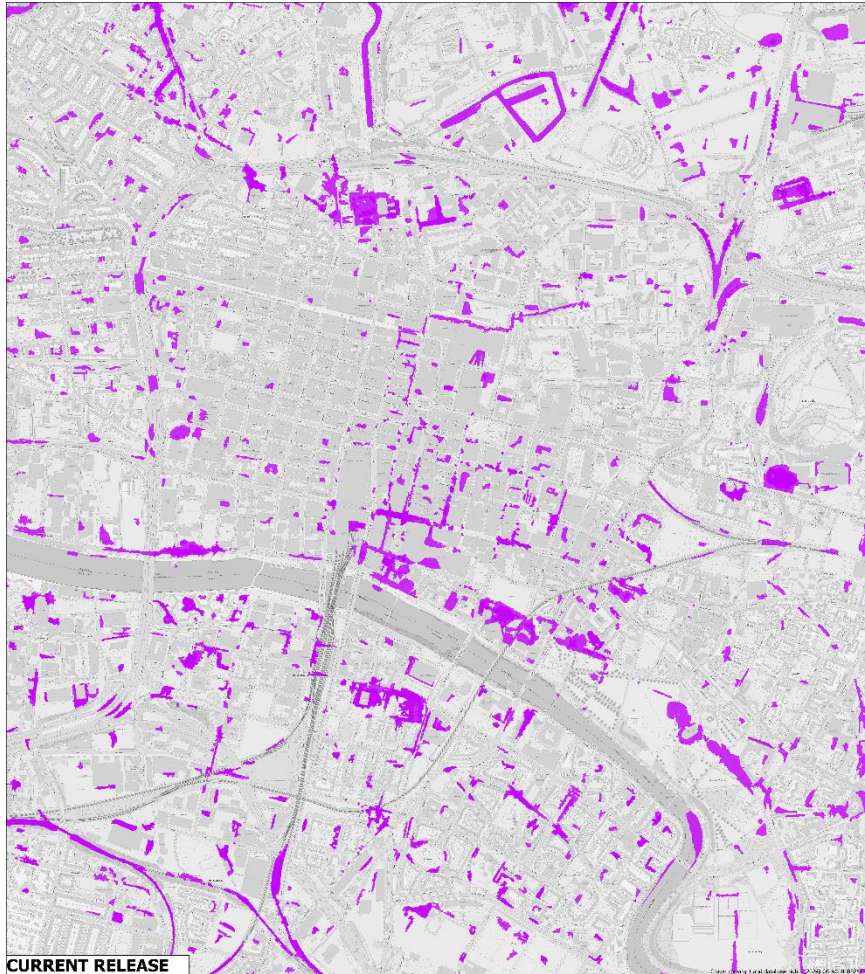


Representing Land Use

- Capturing the heterogeneity of land use especially in urban areas
- High resolution (2m) definition of land use / buildings
- Used to define friction coefficients & apply hydrological parameters

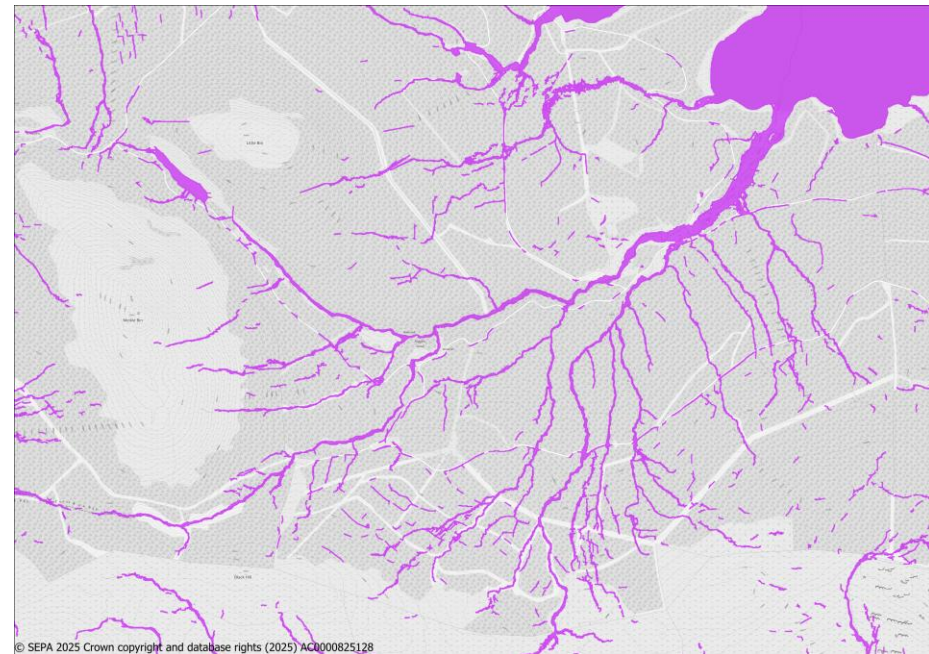
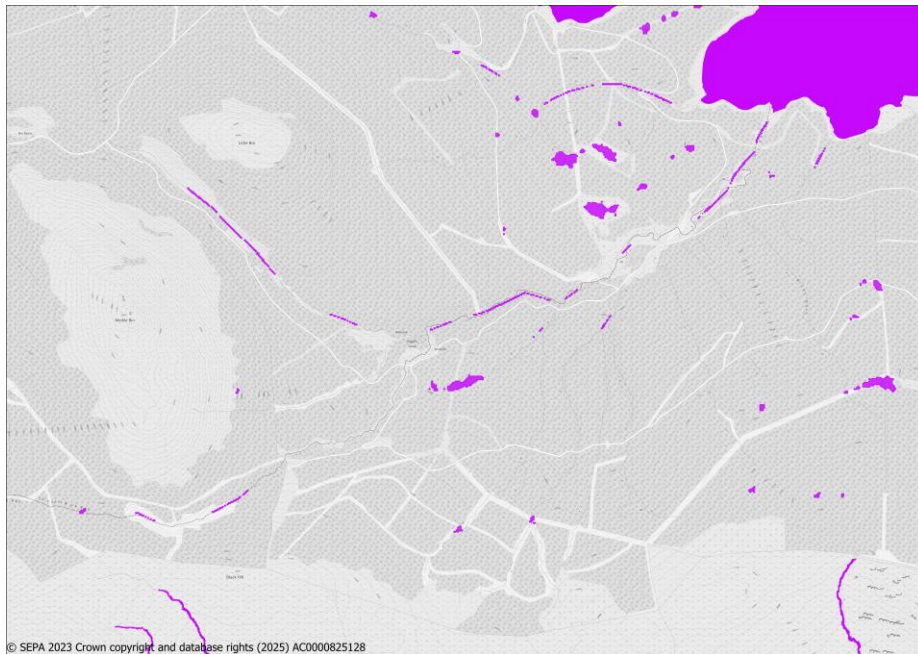


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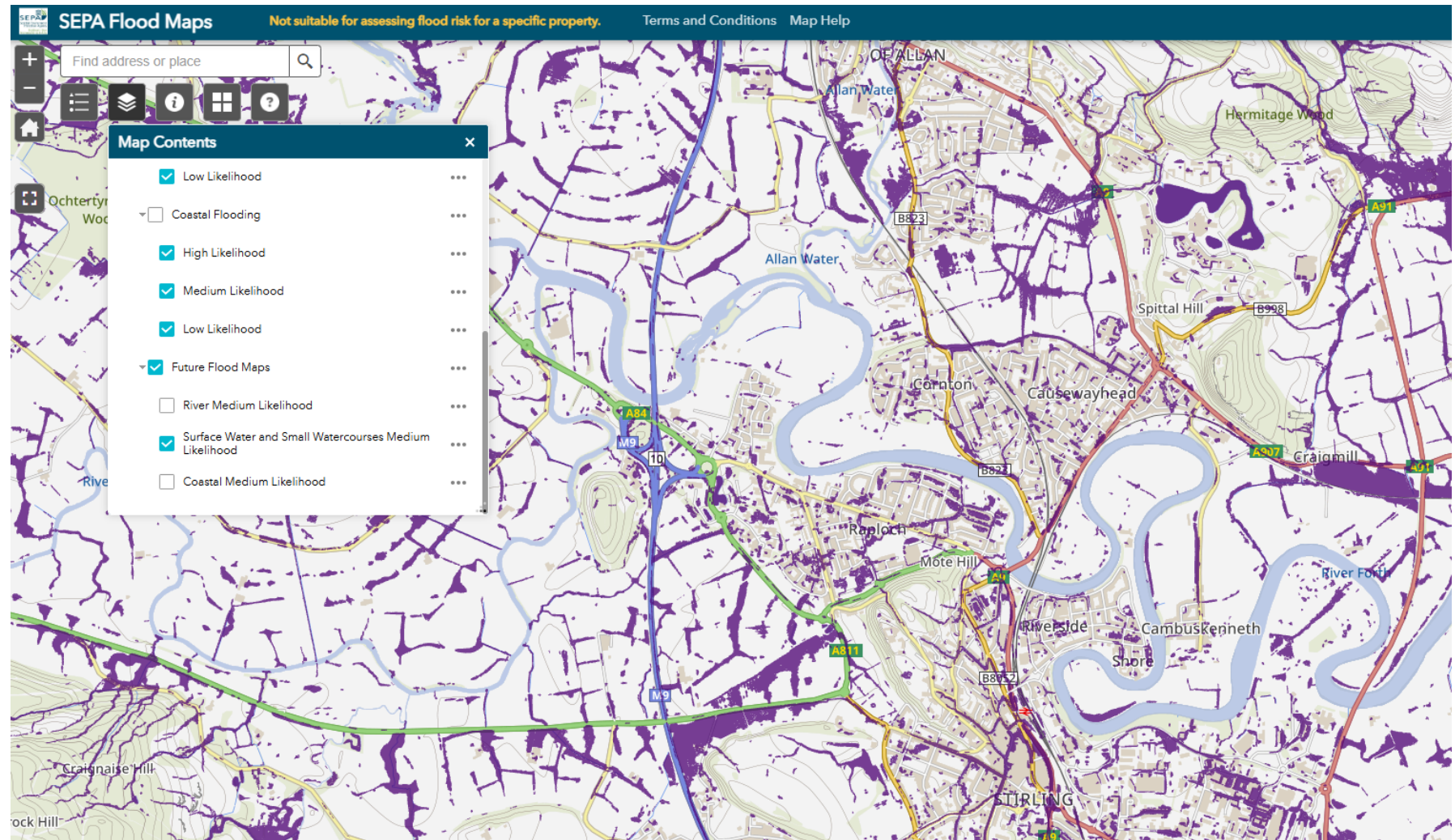
Inclusion of small watercourses

- With catchment areas $< 10\text{km}^2$



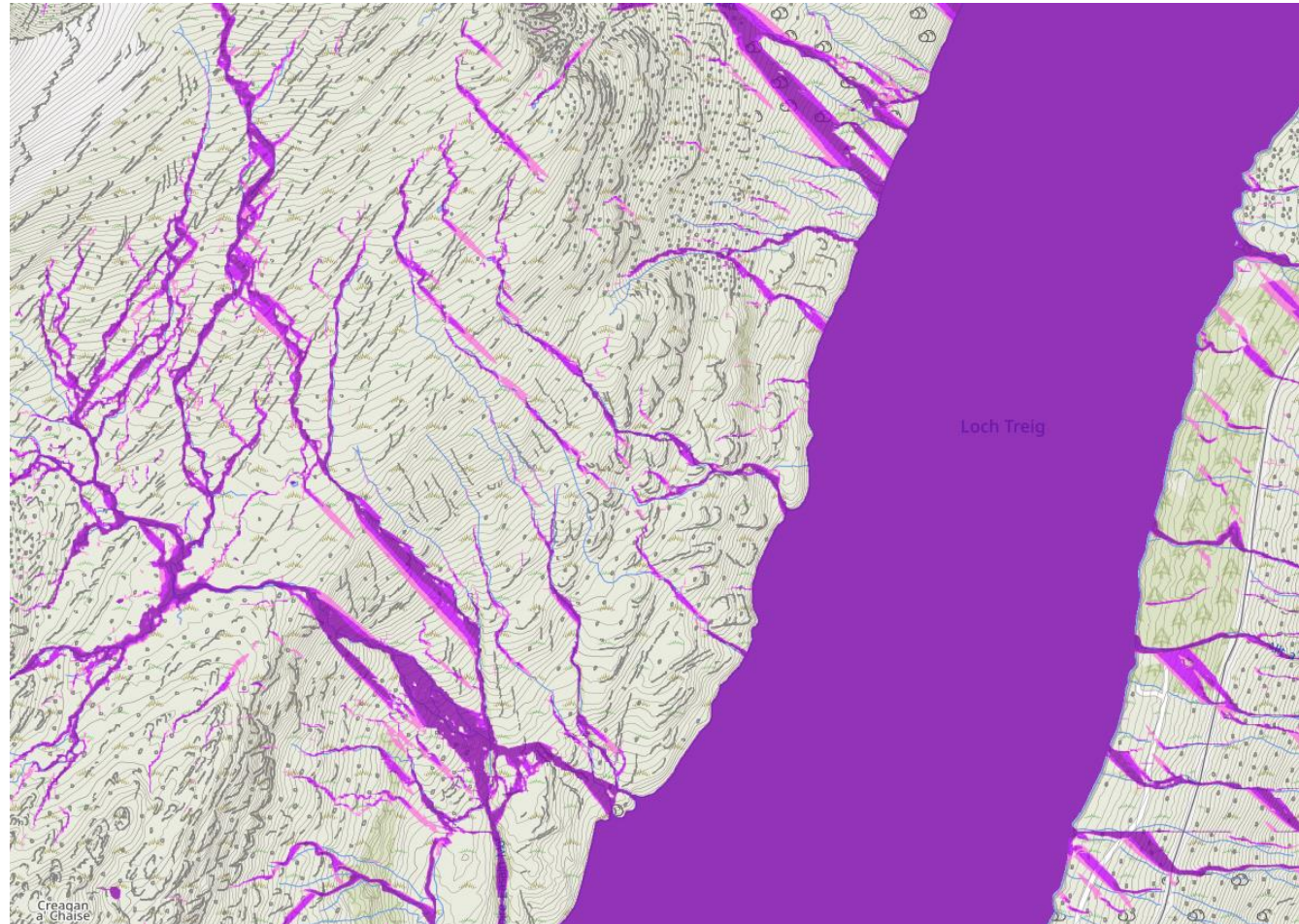
Planning Skills - SEPA's new surface water and small watercourses flood maps

Future Flood Map



Areas of Increased Uncertainty

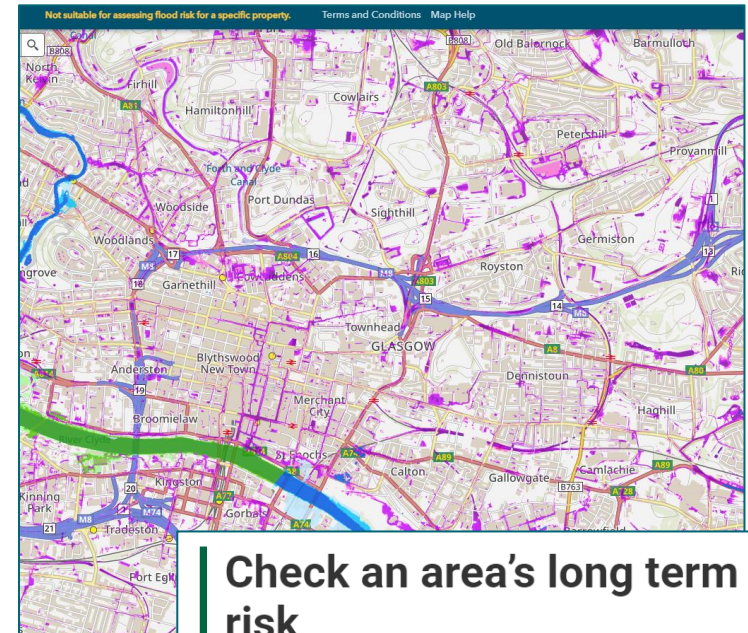
- The quality of the DTM
- Particularly steep areas
- Small watercourses in wooded areas



SEPA Flood Maps v3.0 Release

Informing decision making

- Data has been available to view and/or download from SEPA website since Wednesday 12 March
- 1st future flood map for surface water, supporting National Planning Framework 4 (NPF4)
- Updated “*Check an area’s long term flood risk*” service
- Updated Flood Map viewers
- Updates to the version of the river and coastal flood hazard maps to bring inline with v3.0 release



Check an area's long term flood risk

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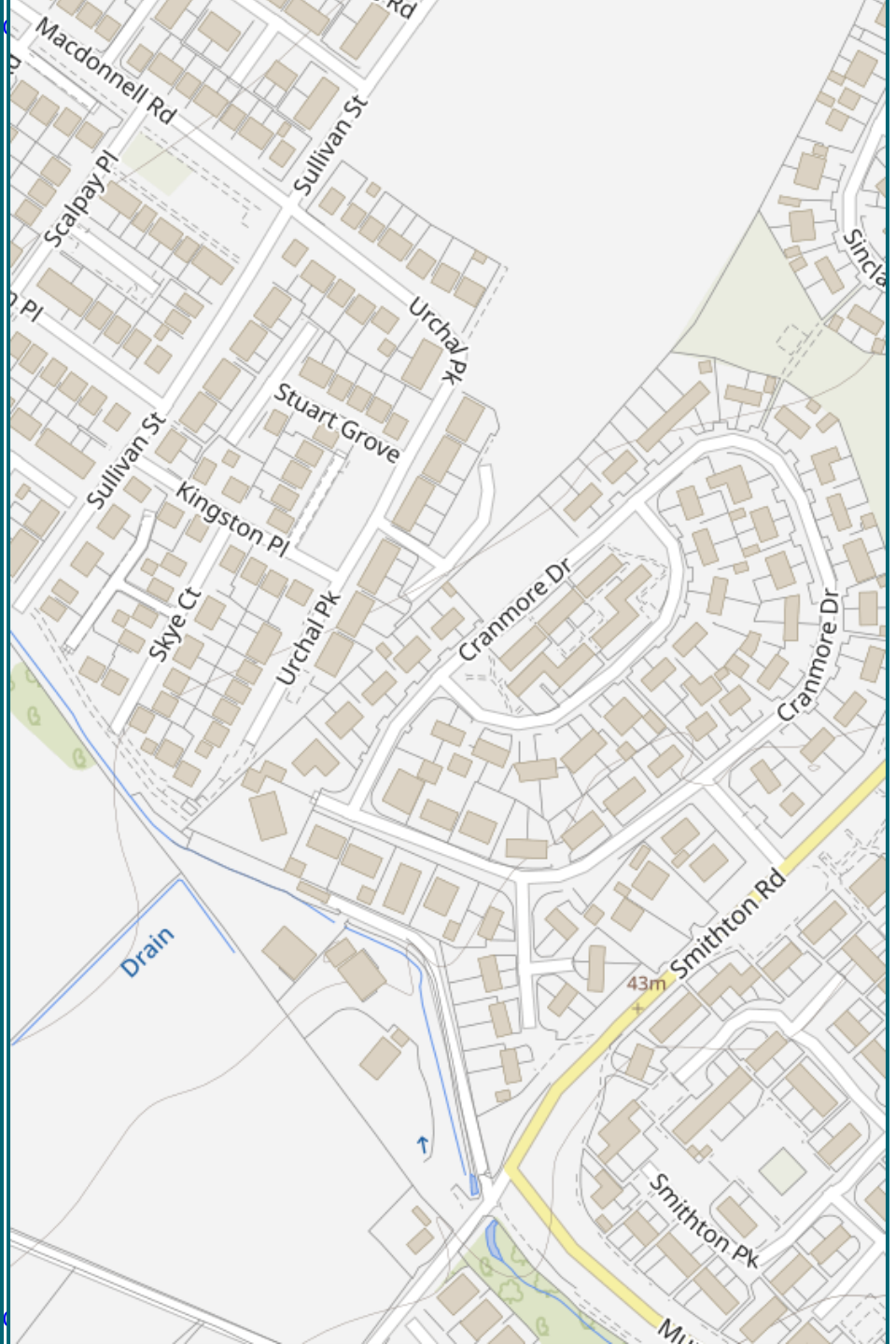
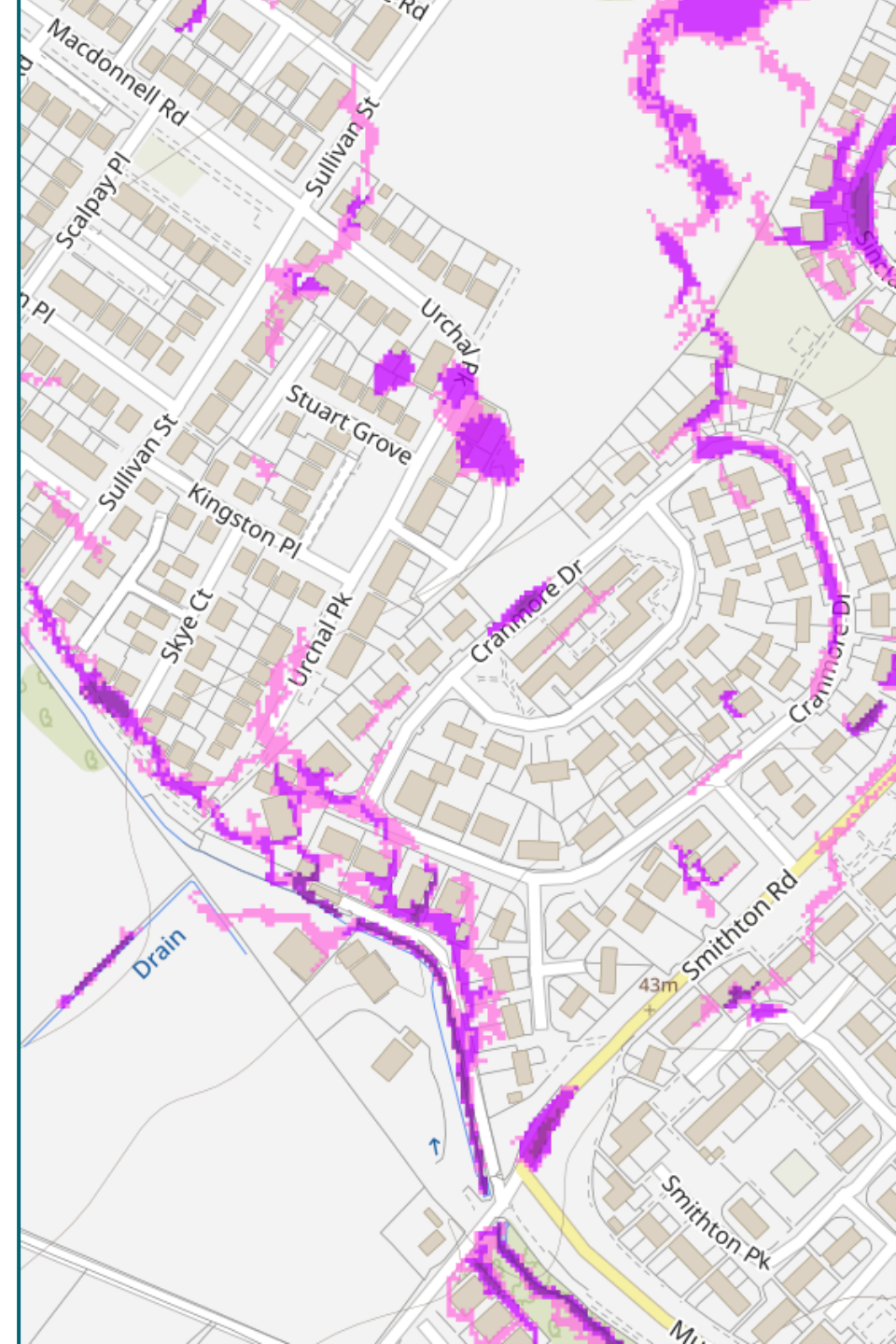
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Using the new maps in land use planning



Planning Skills - SEPA's new surface water and small watercourses flood maps

Show flooding from:	Previous SEPA surface water maps (now superseded)	2025 SEPA surface water and small watercourse maps	SEPA river maps
Directly from heavy rain	Yes	Yes	
Watercourses with catchments greater than 10km ²			Yes
Small watercourses with catchments between >3km ² and 10km ²		Yes For catchments of this size, the 2025 SEPA surface water and small watercourse maps are likely to give a better estimation of expected flooding in most areas.	
Small watercourses with catchments of 3km ² or smaller		Yes	



Using flood maps for planning consultation with SEPA:

Coastal risk

- New maps do not update information on coastal flooding
- Consult SEPA as per [Triage Guidance](#)

Fluvial risk

- Consult as per [Triage Guidance](#), including where fluvial flood risk source is from **small watercourse** shown on our new **surface water and small watercourses maps**.
- Where new map identifies potential risk:
 - ✓ check for associated watercourse channel on background map
 - ✓ seek in-house local flooding knowledge where available before consulting SEPA.

Surface water (pluvial) risk

- New maps provide enhanced information for this flooding source.
- Where risk is **solely surface water**, refer to our [standing advice](#)

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Questions

