

Appendix B - Data sources used in the SFRA

1 Historical Flooding

Telford & Wrekin Council as Lead Local Flood Authority provided details of historical flooding events in the form of internal and external flood events with a 50m buffer. Section 5.1 documents the most significant historic flooding records obtained.

2 Fluvial flooding

2.1 Flood Zones 2 and 3a

The Flood Zones (Flood Zone 2 and 3a) in the Appendix A PDFs are the same as those shown on the Environment Agency's '**Flood Map for Planning**' (<https://flood-map-for-planning.service.gov.uk/>) which incorporates latest modelled data, where available.

Over time, the online mapping is likely to be updated more often than the SFRA, so SFRA users should check there are no major changes in their area.

2.2 Flood Zone 3b (the Functional Floodplain)

Flood Zone 3b, as shown in Appendix A mapping, has been compiled for the study area as part of this SFRA and is based on the 5% AEP (1 in 20-year chance of flooding in any given year) extents produced from Environment Agency detailed hydraulic models, or existing 2D generalised models, where outputs were available (see Figure B-1 for model coverage).

For areas not covered by detailed EA models, a precautionary approach should be adopted for Flood Zone 3b with the assumption that the extent of Flood Zone 3b would be equal to Flood Zone 3a. If development is shown to be in Flood Zone 3a (or Flood Zone 3b derived from 2D generalised modelling), further work should be undertaken as part of a detailed site-specific Flood Risk Assessment to define the extent of Flood Zone 3b.

If the area of interest is in an area that has seen some major changes to the extent of the Flood Zones, having checked the online mapping, developers will also need to remap Flood Zone 3b as part of a detailed site-specific Flood Risk Assessment.

3 Climate change

Existing EA hydraulic models were obtained, and where these had not already been run with the latest climate change allowances, these were run for the 2080s period for all three 2080s allowance categories (relevant to the Severn river basin district, so 100-year +25%, +35% and +70%). This includes the River Severn, River Tern, Wesley Brook, River Roden, Coal Brook and their tributaries.

For any sites not covered by the EA's detailed modelling, Flood Zone 2 was used as an indicative climate change extent. This is appropriate given the 100-year +70% flows are often similar to the Flood Zone 2 extents; therefore, the impacts of climate change would be minimal. Please refer to Chapter 4 for information on the approach to climate change in this SFRA.

4 Hydraulic Model Coverage

Figure B-1 shows the existing EA model coverage, used to inform FZ3b and climate change extents

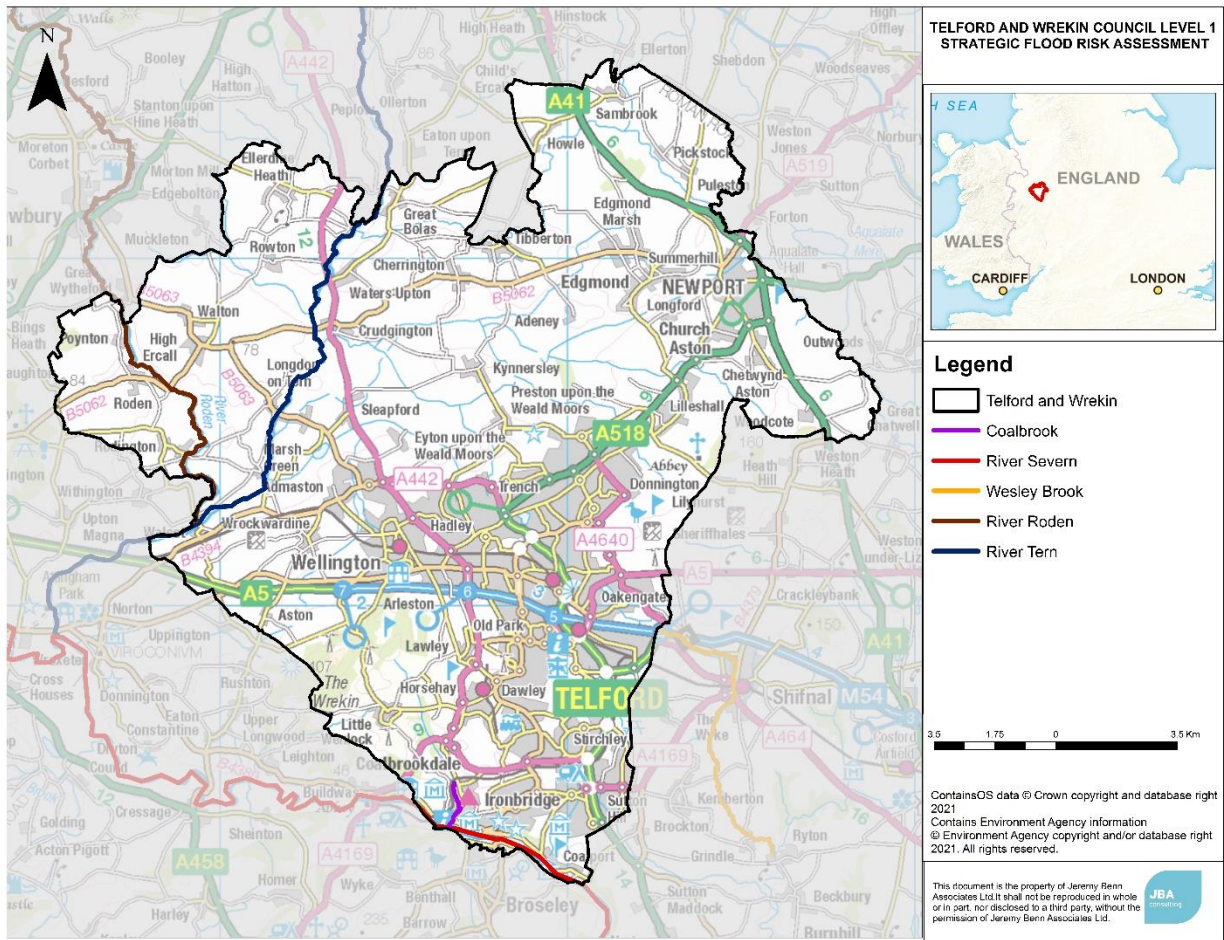


Figure B-1 Hydraulic Modelling coverage

5 Surface water

Mapping of surface water flood risk in study area has been taken from the Risk of Flooding from Surface Water (RoFfSW) maps published online by the Environment Agency. These maps are intended to provide a consistent standard of assessment for surface water flood risk across England and Wales in order to help LLFAs, the Environment Agency and any potential developers to focus their management of surface water flood risk.

The RoFfSW is derived primarily from identifying topographical flow paths of existing watercourses or dry valleys that contain some isolated ponding locations in low lying areas. They provide a map which displays different levels of surface water flood risk depending on the annual probability of the land in question being inundated by surface water (Table B-1).

Table B-1: RoFfSW risk categories

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.

Although the RoFfSW offers improvement on previously available datasets, the results should not be used to understand flood risk for individual properties. The results should be used for high level assessments such as SFRAs for local authorities. If a site is indicated in the Environment Agency mapping to be at risk from surface water flooding, a more detailed assessment should be considered to more accurately illustrate the flood risk at a site-specific scale.

6 Groundwater

Mapping of groundwater flood risk has been based on the Areas Susceptible to Groundwater (AStGWF) dataset.

The AStGWF dataset is a strategic-scale map showing groundwater flood areas on a 1km square grid. It shows the proportion of each 1km grid square, where geological and hydrogeological conditions indicate that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring and does not take account of the chance of flooding from groundwater rebound (e.g. following cessation of mining or industrial activity). This dataset covers a large area of land, and only isolated locations within the overall susceptible area are likely to suffer the consequences of groundwater flooding.

The AStGWF data should be used only in combination with other information, for example local data or historical data. It should not be used as sole evidence for any specific flood risk management, land use planning or other decisions at any scale. However, the data can help to identify areas for assessment at a local scale. Section 5.7 of the Main Report explains groundwater flooding.

7 Minewater

The Coal Authority holds coal mining data in a national database. This provides information on past and present coal mining. Parts of Telford are subject to flooding from mine water emerging and some waterbodies' water quality are affected by the discharge of polluting mine water. The mapping included in Appendix A can be used to check if the site is in a high risk area and to check for coal and mine entries on or near the surface which may affect groundwater and surface waterbodies.

8 Sewers

Historical incidents of flooding are detailed by Severn Trent Water through their Hydraulic Flood Risk Register (HFRR). The HFRR database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding.

At the time of drafting this Level 1 SFRA, records of sewer flooding have not been provided by Severn Trent Water for inclusion within the SFRA.

9 Reservoirs

The risk of inundation because of reservoir breach or failure of reservoirs within the area has been mapped using the outlines produced as part of the National Inundation Reservoir Mapping (NIRIM) study, and are shown online on the Long-Term Risk of Flooding website at the time of publication. The Environment Agency are currently updating their national reservoir flood maps and SFRA users should check there are no major changes to the reservoir maps before relying on the mapping in the SFRA. Section 5.9 of the Main Report presents the reservoirs affecting Telford & Wrekin Borough.

10 Flood Defences

The Environment Agency supplied the location of all flood defences within the district in their AIMS database, including information relating to the type of flood defence and their standard of protection. The Areas Benefitting from Defences shapefile was also considered. Chapter 6 of the Main Report provides information on flood defences and schemes.

11 Overview of supplied data

Overview of supplied data for the Telford & Wrekin SFRA from stakeholders is as follows:

Source of flood risk	Data used to inform the assessment	Data supplied by
Historic (all sources)	Historic Flood Map Recorded Flood Outlines Hydraulic Modelling Reports	Environment Agency
	Historic Frequently Flooded postcodes	Telford & Wrekin Council
Fluvial (including climate change)	Abermule – Worcester River Severn Model (2012, JBA) River Tern (2004, Environment Agency) River Roden (2011, Hyder) Wesley Brook (2003, Environment Agency) Coalbrookdale (2012, Royal Haskoning) River Roden (2010, Edenvale)	Environment Agency JBA Consulting (2D generalised)

Source of flood risk	Data used to inform the assessment	Data supplied by
	Flood Map for Planning Flood Zones	Environment Agency
Surface Water	Risk of Flooding from Surface Water dataset	Environment Agency
Sewers	At the time of drafting this Level 1 SFRA, records of sewer flooding have not been provided by Severn Trent Water for inclusion within the SFRA.	Severn Trent Water
Groundwater	Areas Susceptible to Groundwater Flooding dataset Bedrock geology/superficial deposits datasets (online dataset)	Environment Agency
Minewater	Mine entries Coal Outcrops Past Shallow Mine Workings Potable SMW Mine Water Issues	Coal Mining Authority
Reservoir	National Inundation Reservoir Mapping (Long term flood risk map)	Environment Agency
Flood Defences	Location and description of flood defences	Environment Agency
Cross-boundary impacts	Neighbouring authority sites and Local Plan information, to help assess cross-boundary impacts and the cumulative impact assessment.	Shropshire Council South Staffordshire District Stafford District
Other datasets	Partner Data Catalogue: <ul style="list-style-type: none"> - Source Protection Zones - National Receptor Database - Aquifer Designation Maps - Areas Susceptible to Groundwater Flooding - Detailed River Network - Flood Alert Areas - Flood Warning Areas - Flood Maps for Planning - Groundwater Vulnerability - Historic Flood Map - Risk of Flooding from Rivers and Sea 	Environment Agency (via BDC)