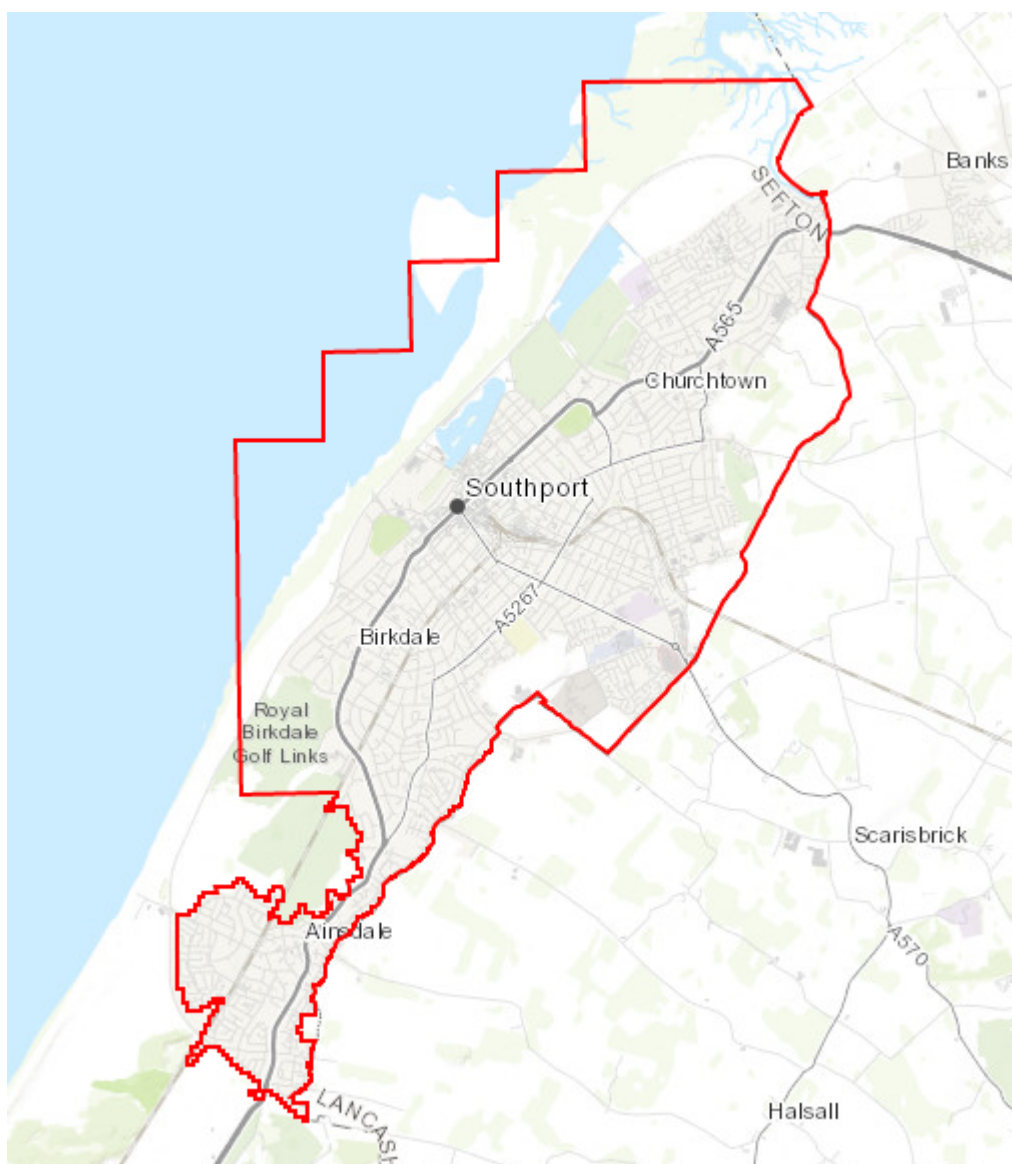


Draft content from a larger report to be produced by the Environment Agency –references and links will be updated by the Environment Agency prior to publication of the report for public consultation.

The Southport Surface Water Flood Risk Area

Introduction to the Southport Surface Water Flood Risk Area

map showing boundary of Southport Surface Water Flood Risk Area



The Southport Flood Risk Area (FRA) has been identified as the flood risk from surface water is considered nationally significant.

Sefton Metropolitan Borough Council take the lead on the development and delivery of the FRMP for this FRA. It is identified as the Lead Local Flood Authority

responsible for managing flood risk from 'local' sources. These local sources of flooding are surface water, groundwater and ordinary watercourses.

The Environment Agency's remit covers flood risk from rivers and the sea.

United Utilities is the Water and Sewage Company that own, operate and maintain the sewerage network and waste water treatment infrastructure in the FRA.

The Southport FRA covers many of the urban districts of Churchtown, Birkdale and Ainsdale which includes residential, business and amenity areas. The FRA is surrounded by a green belt of mainly agricultural land and coastline.

Southport's underlying geology is a bed of mudstone. There are superficial deposits of blown sand to the southern half of the FRA. It gives way to saltmarsh on the northern coast and tidal flat deposits to the north and east.

Several Sites of Special Scientific Interest (SSSI) are located within the Southport FRA including the Ribble estuary, Sefton coast and Hesketh golf links. In addition, a number of Local Wildlife Sites (LWS) are found within the FRA including Martin Mere Mosslands and several others along the coastline, including the Ribble estuary. Sefton coast is a designated Special Area of Conservation (SAC) within the FRA, and the Ribble and Alt estuaries are a designated Special Protected Area (SPA) and Ramsar site. A Local Nature Reserve (LNR), Ainsdale and Birkdale hills, is found within the FRA, in addition to a National Nature Reserve (NNR), the Ribble estuary.

Many listed buildings are located within the Southport FRA, particularly clustered around the Lord Street and Promenade Conservation Areas, both of which are designated as 'Heritage at Risk'.

Historically Southport was a small fishing community before seabathing was embraced by Victorians and the development of the town followed. There were several reclamation schemes along the coastline from the mid-1800s through to the 1980s driven both by an accreting coastline and the need for development land. The town's drainage network flows inland towards the lower lying hinterland and the Three Pools watercourse. There are only a few small watercourses to the south of the FRA that drain directly to the sea but are along an accreting coastline.

The rebuilding of the seawall was completed in 2002 and reduced the frequent flooding of the coastal road. The design of the seawall allows for the crest to be raised to respond to predicted sea level rise.

Development of the town has put pressure onto the capacity of the original drainage systems.

Southport is susceptible to surface water flooding due the low-lying nature of the borough. The water drains to the Three Pools and needs to be pumped in order for it to drain out into the sea at Crossen's Pumping station. A few small pumping stations aid in moving water around the FRA.

The majority of the FRA is serviced by a combined (foul and surface water) sewerage system, particularly in the older parts of the FRA. As a result, some areas have experienced flooding from sewers which occurs when their capacity is overcome by the amount of water trying to enter the network. More modern parts of the town have separate foul and surface water systems.

The groundwater table is high in parts of the Southport FRA and can cause flooding following periods of heavy rain. This flooding tends to persist until the groundwater level subsides.

A number of small watercourses convey water through the Southport FRA including Back Drain, The Pool, Sandy Brook and Fine Jane's Brook, draining local areas throughout the FRA. These ultimately end up at Crossen's pumping station, with the exception of a few small watercourses to the south of the area that discharge straight to the coast.

Southport is at risk from flooding and erosion from the sea, with high storm surges affecting the coastline. The coastline is protected to the north by saltmarsh in front of the coastal road, behind which sits a raised embankment. The southern coastline is protected by a seawall that gives way to a sand dune system.

Current flood risk

Southport had a number of historic flooding events including those in 2010, 2009, 2008, 2004, 1996, and 1994. A secondary sea defence embankment in Crossens was breached in the late seventies, flooding 110 properties.

The winter of 2013/2014 saw a series of storm events that significantly impacted the coastline with widespread damage, erosion and overtopping of defences. In December 2015 widespread flooding impacted roads and properties.

In June and August 2020 prolonged flooding was recorded in Southport, with residential properties affected. Storm Christoph in January 2021 led to widespread surface water flooding across the area, this was followed by several reports of groundwater flooding affecting basements and gardens. Large areas of open ground were waterlogged for a prolonged period.

The flood hazard and risk maps show that in the Southport Flood Risk area some 30,822 people are in areas at risk of flooding from surface water. It covers approximately 12,842 residential properties, of which 22.88% are considered to be in areas of high risk.

Also shown to be at risk of flooding from surface water are: -

- 1,097 non-residential properties, including hospitals, schools/colleges, golf courses, retail parks and industrial estates
- 10.1km of roads including part of the A565 and A570
- 8.70km of railway
- 180.95ha of agricultural land, and
- Areas of environmental designated sites, parks and gardens, listed buildings and water abstraction points

The flood risk and hazard maps provide more detailed information on the likelihood and consequence of flooding for the Southport FRA.

Based on this information it is concluded that further steps should be taken to reduce the likelihood of flooding and its impact. In particular, the impact it can have on people, the economy and the environment both for now and the future.

How the risk is currently managed

The management of surface water flood risk is led by Sefton Metropolitan Borough Council in collaboration with other Risk Management Authorities (RMAs).

The Merseyside Flood Risk Partnership brings together the RMAs and other relevant stakeholders, to coordinate and maximise flood risk management across the area. For example, The Healthy Rivers Trust. A strategic partnership with elected members from each authority steers the direction of flood risk management and represents Merseyside at the North West Regional Flood and Coastal Committee. A tactical partnership of lead officers supports the strategic group through the provision of technical advice and sharing of best practice. Sefton Council has an operational group where officers from the RMAs assess and seek to resolve local flood risk issues.

Reported flood incidences are recorded on the relevant RMAs data systems.

The EA monitors groundwater level at 1 sites within the Southport FRA.

This information is used to inform activities related to 2 flood warning areas that cover the FRA which enable people to receive a warning when flooding could occur. This data also informs the operational response during a flood incident.

Surface water flood modelling was undertaken in 2011 as part of the Surface Water Management Plan. This modelling is currently being updated and will be included in updates of the national surface water flood mapping.

Sefton Metropolitan Borough Council LLFA and United Utilities maintain assets that perform a flood risk management function on the drainage network that they have a responsibility for. Sefton Metropolitan Borough Council also maintain a number of other structures and defences on ordinary watercourses which pass through its land. There are many riparian owners with responsibility for maintenance of watercourses including private residences and golf courses.

Sefton Council maintain the hard-coastal defences at Southport. Habitat management works takes place on the sand dune belt to maintain the protected site, which also acts as a coastal defence. The accreting coast reduces the risk of tidal flooding and the saltmarsh removes a significant amount of wave energy that would otherwise impact on the coastline.

The Environment Agency similarly maintains flood risk management assets on the main watercourses in the FRA. These include screens, outfalls, control gates and inspection chambers, flood defence embankments and open channels and culverts. The Crossen's pumping station is maintained by the Environment Agency.

Recent flood risk improvements within the Southport FRA include the 'Nile Investigation', protecting 15 homes by December 2019.

Coastal understanding has improved through the availability of data from the North West Regional Strategic Coastal Monitoring Programme.

www.coastalmonitoring.org.

A scheme along the Pool watercourse in Churchtown is in development that will seek to reduce the risk to properties as well as create new habitat. The project is in partnership with United Utilities who have installed a significant storage tank that reduced the risk of foul flooding to properties in the area.

The impact of climate change and future flood risk

As rainfall intensity increases, it means that surface water flooding will become more frequent as higher rainfall totals will be seen more often. This can also increase the risks of groundwater flooding.

Sea level rise and increased storminess is likely to increase the risks of tidal flooding and erosion across this section. This can also impact on the ability of surface water systems to discharge during higher tides. Monitoring of this section of coastline is critical in assessing the rates of accretion against sea level rise.

Objectives and measures for the Southport FRA

No additional specific FRMP objectives have been set for the Southport FRA.

Measures have been developed which apply specifically to the Southport FRA. These measures have been developed in addition to measures covering a wider geographic area but which also apply to the Southport FRA. You can find information about all of the measures which apply to the Southport FRA in the interactive mapping tool - flood plan explorer. This includes information on which national objectives each measure helps to achieve.

Southport flood risk area measures

- By 2022, the Environment Agency will engage with Sefton Council and United Utilities on the Crossens Embankment Strategic Flood Assessment in the Southport flood risk areas to ensure that the interaction of the embankment with wider flood risk is fully understood and that all risks and opportunities are taken in to consideration when deciphering the assets future.
- By 2022, the Environment Agency will undertake wider partnership engagement on the Environment Agency Groundwater Management Study in the Southport flood risk areas to ensure all partners understand wider flood risk interactions to ensure that any onwards investment in the area tackles combined flood risk issues
- By 2023, the Environment Agency and Sefton Council will review maintenance standards of main rivers and ordinary watercourses in the Southport flood risk areas to better understand and programme future flood risk management maintenance needs.
- By 2023, Sefton Council and Natural England will determine relevant works required to maintain the free drainage of surface water coastal outfalls in an environmentally sensitive manner in the Southport flood risk areas, along Sefton's coastline from Ainsdale to Southport, to have positive benefits for inland flooding as a result of subsequent works to limit the accretion of sediments within outfall watercourses to reduce the likelihood of flooding.
- By 2026, Sefton Council will work with partners to review the feasibility of any options previously discounted for Birkdale and Hillside in the Southport flood risk areas to re-assess their viability as a product of the new funding rules to reduce the likelihood of flooding.
- By 2025, Sefton Council will subject to cost viability, work with partners to progress a flood alleviation scheme in and around Pool watercourse at Churchtown to reduce flood risk to communities living in the area.
- By 2027, Sefton Council will support the Highways Authority and Network Rail to better understand flood risk to their networks in the Southport flood risk

areas to help develop partnership working opportunities to aid in the management of flood risk to key transport routes.

- By 2025, Sefton Council and United Utilities will work in partnership to deliver updates to the Surface Water Management Plan and associated surface water flood risk modelling in the Southport flood risk areas to identify locations for future opportunities for managing surface water flood risk.
- By 2027, Sefton Council and partners will work to ensure that and Flood and Coastal Erosion Risk Management works undertaken will not be detrimental to the wider policy unit area in the Southport flood risk areas to ensure that natural working processes are not hindered, which act to protect the coastline and provide a vital habitat.
- By 2027, the Environment Agency and Sefton Council and United Utilities will work in partnership to improve the uptake of flood warning services and improve community resilience mechanisms in the Southport Flood Risk Area to reduce the consequences of flood events to the local communities.