

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 Formby Surface Water Flood Risk Area

### Introduction to the Formby Surface Water Flood Risk Area

map showing boundary of Formby Surface Water Flood Risk Area



The Formby 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 Authorities 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 includes flood risk from rivers and the sea.

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

The Formby FRA covers many of the urban districts of Formby which includes residential, business and amenity areas. The FRA is surrounded by a green belt of mainly woodland, dunes and agricultural land.

Formby sits on a mudstone bedrock with the majority of the area covered with a superficial deposit of blown sand. The South east corner of the area has superficial deposits of alluvium surrounding the path of the River Alt. The west of Formby is protected from the sea by a band of sand dunes.

A Site of Special Scientific Interest (SSSI), a Special Area of Conservation (SAC), a Ramsar site, the Ribble and Alt Estuaries are located within the FRA. A number of Local Wildlife Sites (LWS), several smaller Local Nature Reserves (LNR) and National Nature Reserves (NNR) are also present within the FRA. The LWS include Formby Moss, Wham Dyke Meadows, Freshfield Dune Heath, Woodvale Airfield, Willow Bank Caravan Park, Formby Gold Club, National Trust and associated fields. Number of other LWS are also present along the coastline.

Several listed buildings are present within the Formby FRA including the Grade II Listed Church of Saint Peter.

Formby was historically a fishing and farming area but when the railway between Liverpool and Southport was built in 1848 the development moved toward residential. In the period after the 1940s there was further expansion to the west of the railway line with residential development abutting the coastal sand dune system.

Recent residential developments to the town are taking place to the north east and south east and will drain into existing network of watercourses.

Formby is susceptible to surface water flooding due the low-lying nature of the borough. The water needs to be pumped through it in order for it to drain out into the sea. Surface water and ordinary watercourse systems drain into several main rivers that flow east into Downholland Brook or directly into the River Alt to the south. The River Alt is pumped out to sea via the Alt Pumping station which is operated by the Environment Agency. High water levels in the River Alt and Downholland Brook can prevent the surface water and ordinary watercourse systems in Formby discharging. This would result in water backs up along the system leading to flooding.

A number of sewage discharge outlets are present across the FRA, including on the River Alt.

The majority of the FRA is serviced by separate foul and surface water systems. Some parts of the town have a combined (foul and surface water) sewerage system. 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.

The sand dunes protecting Formby are at risk of erosion by the sea, with high storm surges affecting the coastline. The dunes have been eroding for many decades though the depth of sand dunes will provide protection for the foreseeable future. Tidal flood risk is limited due to the width of sand dunes.

The River Alt flows in a south-westerly direction through the Formby FRA.

## **Current flood risk**

The Formby FRA has had a number of historic incidents primarily relating to surface water. In September 2012, there were records of flooding at Hawksworth Drive. In December 2013 through to January 2014 a high storm surge affected areas along the Sefton coastline. Although there was no flooding to property, the sand dunes at Formby were affected. Following the winter 2013/14 storms, despite Sefton Council's attempt to manage this issue using fencing and vegetation, it lost around 30 metres. In August 2020 there were reports of sewer flooding in the Formby region. Storm Christoph in January 2021 led to widespread surface water flooding across the area.

The flood hazard and risk maps show that in the Formby Flood Risk area some 7,257 people are in areas at risk of flooding from surface water. It covers approximately 3,024 residential properties, of which 22% are considered to be in areas of high risk.

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

- 179 non-residential properties, including schools/colleges and a golf course
- 0.74km of roads including part of the Formby Bypass
- 2.21km of railway
- 92.48ha of agricultural land, and
- Areas of environmental designated sites, 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 Formby 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) and other stakeholders. For example, the Formby Flood Action Group.

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 (RFCC). 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.

A Formby Flood Action Group was established in 2016 to implement action at a local level led by local councillors. The group have been working to develop surface water flood warning systems for the town to enable action to be undertaken early during an event.

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

The EA monitors groundwater levels at 1 site within the FRA.

This information is used to inform activities related to 1 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 Council maintain watercourse and structures which are located on land it owns. There are many riparian owners with responsibility for maintenance of watercourses, most of these are private residences. Sefton Council also uses its permissive powers to undertake maintenance on Dobbs Gutter watercourse due to its significance in the drainage of the town. However, this does not remove the responsibility from the riparian owners.

The Environment Agency similarly maintains flood risk management assets on the main watercourses in the FRA. These include screens, outfalls, flood defence embankments and open channels.

### **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. Rainfall across the wider catchment will see levels in Downholland and the River Alt be high more frequently. This will affect the gravity discharge of the surface water systems and ordinary watercourses within this FRA.

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 Formby FRA**

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

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

### **Formby Flood Risk Area Measures**

- By 2023, Sefton Council and United Utilities will work in partnership to progress recommendations from the Surface Water Management Plan level 2 study, in the Formby Area to establish a priority based programme for reducing the risk of surface water flooding to communities .
- By 2027, Sefton Council will support the Highways Authority and Network Rail to better understand flood risk to their networks in the Formby Area to help

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

- By 2023, The Environment Agency and Sefton Council will review maintenance standards of main rivers and ordinary watercourses in the Formby Flood Risk Area to better understand, prioritise and plan future maintenance needs to reduce the likelihood of flooding .
- By 2022, The Environment Agency will undertake wider partnership engagement on the Environment Agency Groundwater Management Study in the Formby Flood Risk Area to ensure all partners understand wider flood risk interactions to ensure that any onwards investment in the area tackles combined flood risk issues .
- By 2027, the Environment Agency and Sefton Council and United Utilities will work with the Formby Flood Action Group to improve the uptake of flood warning services and improve community resilience mechanisms in the Formby Flood Risk Area to reduce the consequences of flood events to the local community .
- Between 2025 and 2027, the Environment Agency and Sefton Council, Lancashire County Council and United Utilities will work together to consider implications of revised climate change predictions and guidance and changes to other technical understandings in the Lower Alt Catchment to update the understanding of both fluvial and surface water systems with the intention to reduce the consequences of flood events and the risk of surface water flooding .