Grangemouth Flood Protection Scheme

Your Questions Answered

Frequently asked questions on the Grangemouth Flood Protection Scheme (GFPS)

GRANGEMOUTH
Flood Protection Scheme
Protecting the heart of our communities

Why is GFPS required when there hasn't been any recent flooding in the area?

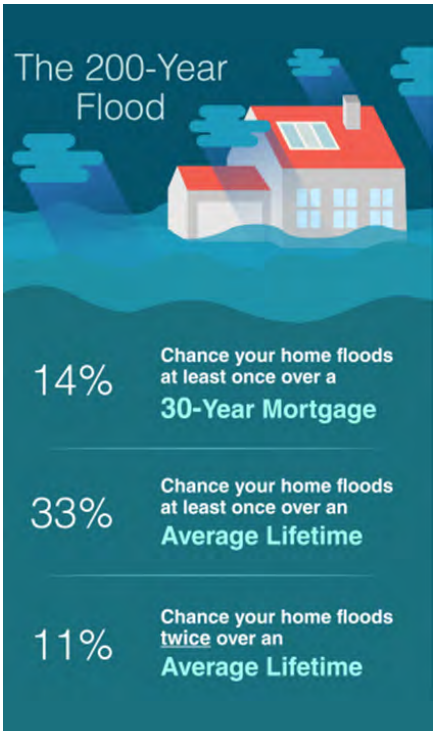
While other parts of Scotland have been affected by flooding over the last five years, the Grangemouth area has fortunately avoided significant flooding. However, this does not mean there is no risk of flooding. The rainfall recently experienced in Brechin (October 2023) would have caused devastating impacts in the Falkirk area if Storm Babet had been 65 miles south-west.

The Scottish Environment Protection Agency (SEPA) and the Scottish Government have both verified that Grangemouth is at risk of flooding, primarily from the sea but also due to flooding from rivers and burns caused by heavy rainfall. The Forth Estuary Flood Risk Management Strategy, published by SEPA in 2015, identified the need to develop a flood protection scheme to reduce the risk of flooding to Grangemouth and surrounding areas.

On average, every few years, the Grange Burn has been close to overtopping onto adjacent roads and properties. In August 2020, the largest flow on record was measured on the River Avon. In October 2023, we also had local flooding in the Beancross area where the hotel and restaurant grounds were flooded. Stirling Road and other primary transport routes are regularly affected by flooding causing significant disruption to commuters and the emergency services.

This means that Grangemouth and the surrounding communities are at risk of flooding from many sources. As the Firth of Forth Estuary is a coastal body of water, the communities and industry nearest to it are at risk of coastal flooding from exceptionally high tides, storm surges and waves overtopping. This impact of high tides also stretches far inland, dominating the lower River Carron, River Avon and the Grange Burn as far as Zetland Park. Those properties located further inland are more at risk from river flooding caused by heavy, prolonged rainfall.

There is also a risk of surface water flooding. This occurs after intense rainfall over a relatively short period of time. The rain can be so heavy, the existing drainage systems cannot cope with the volume of water which then flows over the ground's surface and floods lower-lying ground.



What is a 1 in 200 year flood event?

A common misconception is that a 1 in 200 year event would happen, on average, once every 200 years. In reality, floods are categorised by their likelihood of occurrence.

The annual probability of a particular flood is the statistical chance (or risk) that a location will flood in any given year and relates to a particular size or magnitude of flood. GFPS is being designed to protect Grangemouth and surrounding communities against flooding with a 1-in-200 chance of occurrence or alternatively as having a 0.5% chance of flooding occurring in any year.

This flood event could happen at any time and could in theory, happen on more than one occasion each year.

Will GFPS only protect the refinery and the industrial area and not local people?

The main purpose of the GFPS is to protect everyone who lives and works across the scheme area. GFPS will protect:

2,760 residential properties

1,200 non-residential properties

23km of roads

6,025 people

Some of the properties to be protected are important to the national economy. As well as protecting against the 1 in 200 year event, the scheme will protect against the more frequent events that occur every few years.

Why don't you just dredge the Grange Burn?

Dredging has been considered, but it has shown to offer only very limited benefit to reducing flood water levels in the rivers and burns. In the non-tidal sections of the rivers and burns, the additional capacity generated by dredging gives a minimal benefit in comparison to the volumes of water present in an extreme flood. In addition, dredging is not sustainable, and watercourses would need to be frequently re-dredged.

Altering a river's natural sediment movement and deposition can also cause erosion of the riverbed and banks, which can lead to the failure of existing structures such as roads and bridges.

In areas, such as the lower Grange Burn, dredging would not reduce the risk of flooding as it would have no influence on the tide level.

While an enlarged channel could allow more fresh water to discharge to the sea at low tide, it could potentially increase flood risk downstream. This could also allow more sea water to flow upstream during high tides. This could also increase flood risk upstream by allowing tidal sea water to travel further inland.

Why don't you just clear and maintain the drains?

Falkirk Council maintains the roads and drains on a cyclic basis but unfortunately litter and other debris can block them up quickly again. Defects including blocked gulley's can be reported directly to Falkirk Council colleagues in roads maintenance by accessing Falkirk Council's website and looking for road maintenance. Keeping drains clear would not reduce the tide or river water levels in a flood.

Who is paying for the Scheme?

The overall cost range of the full GFPS project is currently anticipated to be between £450m to £672m.

GFPS costs include estimates of project and construction risk as well as allowances for contingency items and estimates of future inflation. These costs are subject to change and are dependent upon a range of factors as well as programme delivery.

After the scheme's approval at Falkirk Council's Executive Committee meeting, the Scottish Government is to set up a Task Force to look at the best way to fund the scheme, which may include contributions from the private sector.

Falkirk Council is committed to protecting residential communities, infrastructure and industry across the scheme area.

Feedback is always welcome on the scheme and you can get in touch with the project team at

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