

Grangemouth Flood Protection Scheme Newsletter

Issue 5: Summer 2023



Meet the winners of our 2023 STEM Education Programme for primary schools

2023 STEM Education Programme

The programme aims to inspire the next generation of original thinkers in science, technology, engineering and mathematics.

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The Annual Falkirk Science Festival

The festival brings together some of Scotland's top scientists, researchers, and industry leaders.

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Grangemouth's Flooding History

Learn more about how flooding has impacted the community for nearly a century.

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Meet the winners of our STEM Education Programme



Winners - Miss Melville, Teacher at Beancross Primary School, Nicole Anderson, Flood Prevention Officer at Falkirk Council and Sharon Agnew, Senior Flooding Officer at Falkirk Council with the Flood Protectors Group.

Earlier this year, we launched Phase One of our 2023 STEM Education Programme, aimed at inspiring the next generation of original thinkers in science, technology, engineering and mathematics (STEM).

Open to primary schools and youth groups from across the local scheme area, participants had the opportunity to learn more about the devastating effects of flooding and the wide variety of careers involved. The children worked together in groups, each taking on a different role, to research flood protection solutions before selecting the best option and presenting this to a panel of industry experts.

Beancross Primary School scoop first place

After impressing the judges with a collaborative approach, the Flood Protectors Group from Beancross Primary School scooped first place for a well-researched flood design which saw each team member playing a key role in the project's success.

Miss Melville, Teacher at Beancross Primary School said: "We are delighted to have won this year's GFPS STEM Education Programme. The competition encouraged the children to work closely together as a team and harness their creativity as well as helping to cultivate ambition for working in STEM-based curriculum."

The two Highly Commended runners-up were the Rapid Rivers and Group D from St Frances Xavier's Primary School who were also recognised for their entries. The judges really liked the Rapid Rivers' special consideration of the local community and Group D's excellent flood model.

Congratulating the winners and runners-up, Councillor Paul Garner, spokesperson for Economic Development, said: "The GFPS STEM Education Programme aims to bridge the gap between school, higher education, and industry by helping to equip young people with the skills required to adapt and thrive in this fast-paced, ever-changing world.

"We received an incredibly high standard of submissions once again this year, which showed real teamwork, creativity, innovation and problem-solving skills. Well done to everyone who took part!"



Runners-up – Mrs Quinn, Teacher at St Frances Xavier's Primary School, Sharon Agnew, Senior Flooding Officer at Falkirk Council and the Rapid Rivers.



Runners-up – Miss Quinn, Teacher at St Frances Xavier's Primary School, Nicole Anderson, Flood Prevention Officer at Falkirk Council and Group D.

GFPS launches free STEM learning resources for secondary schools

As part of Phase Two of our STEM Education Programme, a bank of free learning resources has been developed to support the teaching and learning of STEM based subjects.

The learning materials, which were successfully trialled at a series of events at the 2023 Falkirk Science Festival in May, are targeted at secondary school pupils from across the local scheme area.



The board game in action, showcasing the various mitigations, risks, and successes of building flood defences.

Councillor Paul Garner, spokesperson for Economic Development, said: “As part of the GFPS STEM Education Programme, free resources have been designed to support the teaching and learning of science, technology, engineering and mathematics (STEM) subjects.

“These materials, which include an interactive board game, will help young people from local schools across the GFPS area, develop the necessary skills and knowledge for exciting and fulfilling future careers.”

In September, teachers from Grangemouth High School will be using the full suite of materials to run a whole year group interdisciplinary STEM day to help broaden their S2 pupils’ career horizons before they make their subject choices later in the year.

The GFPS STEM Education Programme, developed by consultants Jacobs in conjunction with Falkirk Council’s Children’s Services, aims to bridge the gap between school, higher education, and industry by helping to equip young people with the skills required to adapt and thrive in our fast-paced, ever-changing world.

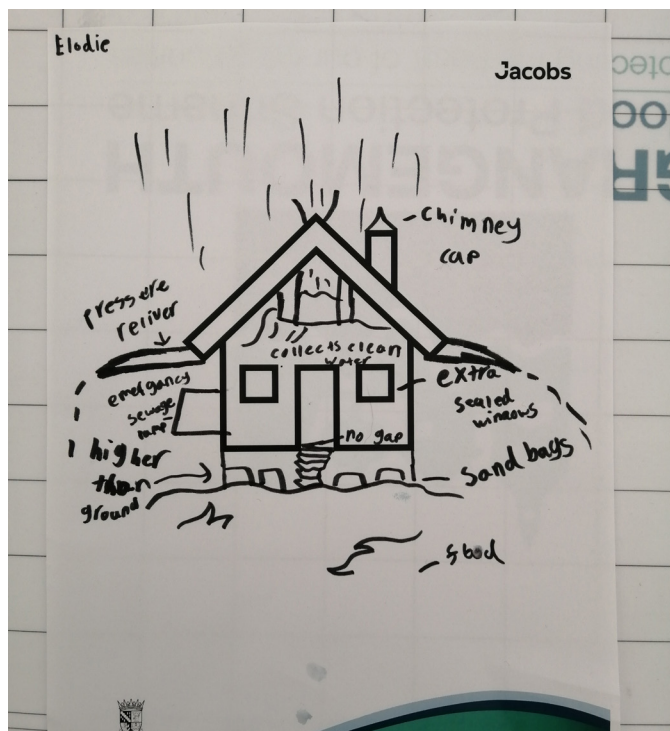


To download the learning materials, please visit www.grangemouthfloodscheme.com/stem. If you have any additional questions about the STEM Education Programme, please contact grangemouthfps@falkirk.gov.uk.

The 2023 Falkirk Science Festival

The GFPS team recently exhibited at the Falkirk Science Festival, which brings together some of Scotland's top scientists, researchers and industry leaders.

Now in its 4th year, the festival features a variety of activities such as interactive exhibits, workshops, talks, demonstrations, and hands-on experiments to help engage and educate the public on all things science, technology, engineering, and mathematics (STEM).



Participants had the chance to design their very own house of the future, complete with protective measures against potential flooding events.



Participants' problem-solving skills were also put to the test on an outdoor obstacle course.

The festival's programme of events gave the GFPS team the perfect opportunity to trial its bank of free STEM learning resources.

Jacobs' Principal Social Value Consultant Barbara Hanning, who helped develop the STEM Education Programme, said: "We were delighted to return to this year's Falkirk Science Festival. With a whole host of events, the festival provided a great platform to showcase the free learning resources we've developed as part of our STEM Education Programme, all of which have been so well received by young people, their parents and local residents alike. We look forward to bringing the resources to local schools later this year."

The Scottish Environment Protection Agency (SEPA) is Scotland's national flood forecasting, flood warning and strategic flood risk management authority.

Through Floodline, SEPA provides live flooding information and advice on how to prepare for, or cope with the impacts of flooding, 24 hours a day, 7 days a week. With improvements coming to the flood warning service, SEPA will be contacting its database of customers with more details when the service is available.



To be notified when the area you live, work or travel through is at risk of flooding, please visit www2.sepa.org.uk/contactus or contact 0345 988 1188. If you already have a Floodline account, it's important to ensure your contact details are up-to-date.

Grangemouth's flooding history

20th Century



1926
Grange Burn rose 5ft 5in in an hour flooding Jackson Avenue

1920
Grange Burn overflowed onto Union Road



1933
Heavy rainfall inundated Abbotsgrange leaving vehicles underwater

1927
Abbots Road, Kerse Road and Jackson Avenue flooded

1935
Grange Burn overtopped on Jackson Avenue

1951
Banks of Grange Burn burst near Beancross onto Abbots Road

1954
Flooding on Abbots Road from Grange Burn



1959
Grangemouth Docks flooded with highest tide recorded at 4.47m

1958
Flooding from Grange Burn onto Primrose Avenue



21st Century

2006
Widespread flooding throughout Falkirk washed away Anchor Burn footbridge

2002
22 properties flooded on Alloa Road in Stenhousemuir

2014
Tidal surge coupled with high tide affected the Forth Estuary

2011
Blocked culvert at the Chapel Burn led to flooding of properties in the vicinity



2020
Heavy thunderstorms caused the **highest flow** recorded at River Avon, leaving properties and the transport network inundated with water

2022
Storms Dudley & Eunice caused flooding primarily to agricultural land and open green spaces

2023
Following heavy, prolonged rainfall, the River Carron overtopped its banks causing flooding



Why is Grangemouth at risk of flooding?

While Grangemouth hasn't experienced frequent flooding, its low-lying ground makes it particularly vulnerable to high tides and water surges. This has meant numerous near misses for communities in the last decade.

Climate change is also causing sea levels to rise. Levels in the Forth Estuary could rise by almost 500mm in the next 60-80 years. It is not just flooding from the sea that could affect Grangemouth. River flooding from the Rivers Carron, Avon and Grange Burn also pose a significant risk.

The floods the scheme will protect against have a **low chance of occurring**, but if they did **the impacts would be devastating** with thousands of homes and businesses affected, road closures and the possibility of lives being lost. Flood risk

management in Scotland aims to address these risks in a proactive manner rather than waiting until after the flood event has occurred to take any action.



Alan McGowan, Senior Associate Director at Jacobs, said: "The impacts of flooding can be devastating with properties ruined, people out their homes for months and impacts on health and wellbeing. As Grangemouth is a low-lying town near multiple water sources, the area has been recognised as a high priority to be protected against flooding which is why this flood protection scheme is essential."

For a full list of previous floods in the area that we're aware of, please visit www.grangemouthfloodscheme.com.

Meet the GFPS team



Turner & Townsend's
Stephen Taylor

In each issue of the newsletter, we are introducing you to a member of the GFPS team. This time it is the turn of Stephen Taylor, Associate Director at Turner & Townsend, who is part of the team working to deliver the Grangemouth Flood Protection Scheme. We asked Stephen some quickfire questions about the scheme.



What is your role on the project?

As Project Manager, my primary focus is on supporting Falkirk Council to oversee and coordinate what is a large and complex project. This includes working with the whole project team, and key stakeholders to ensure we do what we said we would do, when we said we would do it.

With a focus on setting the project up for success moving forward and embedding good project and cost management principles into the day-to-day delivery of the scheme.



Why is the GFPS important?

This analysis, which has been verified by the Scottish Environment Protection Agency (SEPA) and the Scottish Government, demonstrates that Grangemouth and the surrounding area is at risk of flooding, primarily from the sea but also due to flooding from the rivers/ burns caused by heavy rainfall.

On average every few years the Grange Burn, for example, has been close to overtopping onto adjacent roads and properties, and we'll all remember that in August 2020 the largest flow on record was measured on the River Avon. With climate change impacts, the likelihood and impact of similar events is only increasing. The scheme is seeking to protect against low probability and/or very high impact events that would cause extensive damage to property and infrastructure and people's lives.



What do you like most about working on the project?

I really enjoy working on a project that will have clear everyday benefits to local people and businesses once it is complete. For example, many residents also report that they are unable to insure their properties against damage due to flooding risks. Although projects of this scale have long approvals and delivery processes, the ultimate benefit makes it all worth it.



What is your top priority for the GFPS?

The scheme will benefit local people and businesses. My priority is that we successfully deliver this scheme for them and provide value for money in doing so.



How will the GFPS be built?

The project is going through a key phase where we are reaching out to engage with as many residents and business owners who will be directly affected, either during construction or upon completion, to finalise the alignment of the defences. At the same time, we are thinking not only about where the defences will be, but how best to construct them.

We have an experienced project team who have been involved in the delivery of many similar projects, considering construction methods. We will work with the communities to develop an approach to construction which delivers the defence alignment, considers your local nuances, and keeps the impact of construction as low as practicable. One way of lowering this impact is to phase construction i.e., don't try and do everything at once.

Flood protection word search

- Culvert – a pipe carrying a watercourse underground.
- Current – the flow of the river.
- Drainage – the ability of water to flow away from somewhere.
- Embankment – a human-made raised earth bank by a river which is created to reduce flooding.
- Flash flood – a sudden flood occurring after unusually heavy or excessive rainfall released in a short period of time, usually a few hours.
- Flood gate – a gate that can be opened to let water out or closed to keep water in.
- Flood wall – a wall built to prevent flooding by temporarily containing high water levels.
- Habitat – the place an animal or plant naturally lives and grows.
- Hydrology – the study of water in the environment.
- Precipitation – water that falls from the atmosphere to the Earth’s surface, such as rain and snow.
- Relief channel – a human made channel that is created to divert water around or away from important locations if a river is at risk of flooding.
- Storage area – an artificial area created to store flood water and prevent spill over to land.
- Vegetative buffer - an area of vegetation around a river or lake that aims to reduce the speed of water flow and absorb flow waters.

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Got a question? Speak directly to our project team

Would you like more information about how the proposed flood defences might impact your home or business? The GFPS team has been offering one-to-one sessions with directly affected residents and businesses.

Tenants and owners of properties that will be affected by the scheme can take part in a one-to-one session which can either be a face-to-face meeting or a telephone or online consultation.



Nicole Anderson, Flood Prevention Officer from Falkirk Council, who is meeting with locals, said:

“It’s great to go out and speak to the people who will be directly affected by the flood defences and understand their views on the project. We’re gaining some really interesting feedback that we take on board and discuss with the full project team.”

If your property is being impacted by the flood defences, and you’re interested in arranging a telephone consultation or face-to-face meeting with the team, please email us at grangemouthfps@falkirk.gov.uk.

Protecting communities in Grangemouth, Wholeflats, Glensburgh, Langlees, Carron and Carronshore



2,650
residential
properties



6km
roads



330
non-residential
properties



5,800
people

Extra news from Falkirk Council

Celebrating 150 years of Grangemouth

In 1872, Grangemouth became a burgh and was passed from the ownership and control of the Dundas family into the hands of elected representatives of the people of the town. This marked the coming of age of Grangemouth and paved the way for the massive developments in the years since. To celebrate the 150th anniversary of Grangemouth becoming a burgh, plans are afoot to hold a series of monthly events at Grangemouth Library over the coming year including talks, exhibitions and walks. Refreshments will also be provided.

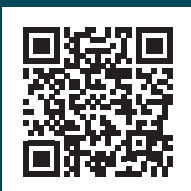
For more information, please contact civic.events@falkirk.gov.uk

Date	Time	Topic	Host
August 31	7pm - 9pm	The War Memorial	Jim Pringle
September 28	7pm - 9pm	Grangemouth Church and School	Ian Scott
October 26	2pm - 4pm	Arts & Culture	TBC
November 30	2pm - 4pm	Grangemouth Heritage Centre	Maureen Burns
December 14	2pm - 4pm	A look back on the year	TBC

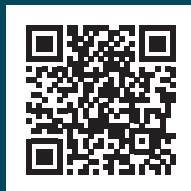
If you, or someone you know, would like a copy of this newsletter in another language or format, this can be arranged by contacting our customer services centre on 01324 506070.

You can keep up to date with the scheme by visiting our website

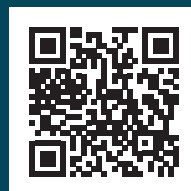
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