

Perth & Kinross Council – Communities Service

Blackford Flood Study - Community Engagement Sessions Summary of Questions & Answers

Introduction

Perth & Kinross Council recently carried out a flood protection study for the Blackford area. In late 2021, the Council engaged with the local community on:-

- the risk of flooding in Blackford;
- the findings from the Blackford flood study;
- other actions to raise awareness and improve community flood resilience.

Due to the ongoing Covid-19 pandemic, the community engagement exercise was carried out online.

Information was made available on the Council's flooding webpages from 20 September until 5 November 2021. This allowed residents to view the draft outputs from the flood study. Residents were encouraged to complete the online form provided to record their comments and views on the flood study.

An online public presentation followed by a question and answer session was also held on Thursday 14 October at 6:30pm. This supplemented the information already made available on the Council's website.

The Council would like to thank those that took the time to provide their comments and to attend the online session.

This report collates the verbal and written comments received up to 5 November 2021 and provides the Council's response to those questions.

Online Community Event

Information regarding the online event of 14 October was made available on the Council's flooding webpage. The event was also advertised via posts on the Council's Social Media accounts. Local Councillors and the Blackford community council were contacted in advance and the event was also advertised on the community councils social media page.

The live online event consisted of a presentation from the Council setting out the proposals, with the opportunity for residents to type questions for the project team. The project team consisted of representatives from the Council's Flooding Team, Stantec Ltd, Kaya Consulting Ltd, SEPA and Scottish Flood Forum. The event was recorded and remains available to view via the Council's Youtube channel at: <https://youtu.be/lom2y6lpXHQ>.

As the attendance for the online event was limited, a further letter was issued to the community inviting them to view the recording of the online session and to submit comments. The flood study information also remained on the Council's website until 5 November 2021.

Community Response

Nine separate responses were received up to 5 November 2021. These were provided as a mixture of e-mails and completed comment forms, with each covering a number of comments and questions.

In general, the majority of the comments received were in regard to the assessment of flood risk in Blackford (flood maps). This included questions about how the flood maps were developed, queries about the predicted flood extents and about the impacts of the maps on property owners. Some comments were received on the recommended flood scheme option. Further consultation with the community will be undertaken if the proposals are to be taken forward.

The respondents raised a number of questions. These are listed below along with the Council's response. Those submitting forms have not been named for confidentiality reasons. This report will be distributed to members of the community.

The Next Steps

The Council will report the conclusions of the flood study to the Environment and Infrastructure Committee.

SEPA has asked local authorities to identify new flood schemes for inclusion in the second cycle of Flood Risk Management (FRM) Strategies and Local FRM Plans covering the period from 2022-2028. The recommended flood scheme has therefore been put forward to SEPA for prioritisation and will hopefully be added to an updated national priority list.

The next Forth Local FRM Plan will be published later in 2022 and will set out the proposed implementation arrangements for the flood scheme, including timescales and how it will be funded. The next phases of work to develop the flood scheme proposals will therefore not commence until after 2022. The project will involve further outline design development, the statutory process under the Flood Risk Management (Scotland) Act, detailed design and tendering before eventual construction. This is a long process and will take a number of years to complete.

The Council will carry out further consultation with the community as the proposals are developed.

For further information on the Blackford Flood Study please contact:

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Appendix A – Questions and Answers

Flood Maps

Q1. How are the flood maps in this study developed?

The primary focus of the Blackford flood study was the fluvial flood risk to the village (i.e. the risk of flooding from the various watercourses). However following consultation at an early stage in the project, the community also raised concerns around surface water flood risk. As a result, two sets of flood maps were developed:

1. Fluvial flood maps showing the predicted risk of flooding from watercourses, and;
2. Pluvial maps showing the surface water flood risk only; i.e. no flooding shown from the local watercourses.

The flood maps were developed following a lot of data collection and analysis.

Firstly, an assessment of the catchment hydrology was carried out to establish the size of the predicted floods for each watercourse (fluvial maps) or rainfall (pluvial maps). This information was independently checked and agreed with SEPA.

This information was then used in the hydraulic model built for the study. This was based on a topographic survey of ground levels in the area, including river-cross sections and property threshold levels. The wider floodplain was represented using levels derived using remote aerial sensing techniques (known as LiDAR). The survey information was checked to ensure all of the main key features were captured. Once built, the model was calibrated using known information, and then used to predict the depth and extent of more severe flooding.

It is important to note that the flood maps were produced at the level of detail required to assess flood risk at the community scale, whilst also ensuring the model ran efficiently. It was not possible to model every minor topographic feature across the study area but the model provides a good representation of the main flooding mechanisms in the area.

We acknowledge the comments that have been received regarding the flood maps, particularly those from the community council. This information will be considered in greater detail and used to inform updates to the hydraulic model during the future design stages for the recommended option.

Q2. The flood maps do not appear to consider the recent railyard development?

As noted in Q1, an extensive topographic survey was undertaken of the study area. However at the time of the survey, the two-stage channel at the railyard development had not been constructed, and so the model does not include the more recent changes in this area.

The flood risk assessments (FRA) used to inform the railyard work were reviewed as part of the study. It was noted that the consultant, working on behalf of the

developer, undertook conservative modelling to determine the capacity of the two-stage channel, and their FRA concluded was that it would not increase flood risk to others. It was considered acceptable to adopt these assumptions as part of the Council's study, due to the lack of available as-built data at the time.

As part of future work on the recommended option, this area will be surveyed further, and the hydraulic model will be updated accordingly. In the meantime, the noted issue at the railyard is not considered to be significant enough to change the outcome of the flood study.

Q3. Why was the compensatory storage identified in the flood risk assessment for the railyard site not developed?

The initial FRA for the site highlighted that the development could potentially have an impact on the pre-development flood risk. As such, mitigation was recommended to ensure the development had a neutral impact on flood risk. An area of land upstream of the A9 was identified as being suitable for providing the required compensatory storage for the initial railyard design. A pre-commencement condition was placed on the planning permission requiring the detailed design of any required compensatory storage areas.

The design for the railway sidings site underwent a number of iterations that reduced the potential impact the site had on the functional floodplain. Updated detailed FRA's were carried out to demonstrate that the site's impact on flood risk could be mitigated through re-profiling the Allan Water alongside the development to provide the necessary additional channel capacity. The upstream compensatory storage was therefore no longer deemed to be required.

Q4. The flood maps do not appear to have captured existing flood mitigation around properties?

Q1 clarifies how the flood maps were developed and the level of detail involved. Further to this, in line with SEPA's technical guidance, only major features such as the A9 road embankment are included within the model. Informal defences such as local walls/fences/bunds are omitted, and this is a standard practice because of uncertainty around their construction and long-term maintenance.

Q5. The flood maps show my property is at risk – how will this affect me and my home insurance premiums?

Although the Council's flood study is available for the local community, it is not being made available for commercial use. Therefore, it should have no direct impact on house insurance premiums. Insurance companies have their own individual means of determining flood risk for the properties they insure or provide policy quotations for.

If you currently live or work in a property or business that is at risk of flooding then you can install products to help protect it from flooding. The flood study established that property flood protection measures can be an effective way for homeowners and businesses to increase their resilience to flooding. Flood products, such as flood

gates for doors and air brick covers, are widely available and are designed to suit a variety of buildings.

The Council would encourage residents to have a property survey undertaken by a professional contractor to explore the suitability of these products for your home. Unfortunately, we cannot provide financial assistance to residents for the purchase of these products.

The Scottish Flood Forum (Tel 07895 883170) can provide you with free independent advice on the selection of suitable products and on any related flood insurance matters.

Further information on property level flood protection products and flood insurance can also be found at the following:

www.pkc.gov.uk/plp

www.scottishfloodforum.org

www.floodre.co.uk

Q6. The flood maps show my property at risk – I do not believe this to be the case?

The flood risk maps were prepared at a community scale and were not designed to be used to provide a definitive assessment of flood risk for individual properties. As highlighted above in Q1, Q2 and Q3, it was not possible to model every minor topographic feature across the study area and to capture this on the flood maps.

It is also important to note that the flood study was concerned with long-term flood risk in Blackford and considered higher magnitude flood events, up to and including the 1 in 200-year flood event, plus an allowance for future climate change. The maps therefore represent current and future flood risk. Historical and community information was considered in the study, but thankfully some of the more extreme flood events shown on the flood maps will not have occurred to date. While larger floods may have less chance of occurring, we must consider potential floods of varying magnitudes and levels of risk.

Q7. The pluvial flood maps do not appear to capture areas where flooding has been witnessed, such as from blocked road drainage.

The pluvial (surface water) flood map that has been developed highlights low lying areas that may be susceptible to surface water flood risk (from rainfall and/or overwhelmed drainage systems). It does not necessarily show where the surface water originates from, or the flow paths it takes. This map also helped to validate surface water issues reported by the community raised during the earlier community survey.

The pluvial (surface water) flood map is based on an event which represents an extremely high intensity storm (1 in 200-year rainfall event with a 1-hour duration). The areas shown at risk are those where the model predicts water to remain ponding 12 hours after the rainfall event.

Given the age of the network and the history of surface water flooding (particularly in the region of Stirling Street), no allowance was made to replicate the urban drainage system. This was deemed appropriate, in line with a more conservative approach.

As highlighted above in Q1, it was not possible to model every minor topographic feature across the study area and to capture this on the flood maps. This explains why there may be some discrepancy from what has been witnessed by residents and what is shown on the maps, particularly when looking at the individual property level.

Flood Study Recommendations

Q8. The watercourses around Blackford are not maintained. Was dredging considered by the study?

A river is contained entirely within its main channel under normal flow conditions. The flow capacity of a river channel is known as the 'bankfull' discharge. Any flow in excess of this bankfull discharge will result in water overtopping of the river banks. River flows in the UK typically exceed the bankfull discharge approximately every other year. Therefore, the sight of water on floodplains is quite commonplace. However, this can be a concern if it impacts upon people or property located on the floodplain.

During an extreme flood, the peak river flow may be many times the bankfull discharge, and as such the storage provided by the river channel is typically insignificant when compared to that held in the floodplain. Therefore, it is not practical to dredge the river channel to the extent that it would confine such large and rare flood flows from reaching the wider floodplain. In this respect, dredging on its own cannot prevent flooding.

This is not to say that managing sediment on rivers should never be considered or is never useful. Indeed, this can provide benefits if targeted at specific locations where river flows and behaviour are properly understood. However, if not properly studied and understood then dredging can have serious consequences that could lead to erosion problems and an increased flood risk downstream.

It is well understood that straightening/canalisation of rivers and burns increases flood risk downstream as it increases the speed and flow of flood water from the upper catchment. This is also true of drainage systems where there is no attenuation of flow.

The result of dredging can also lead to erosion due to increases in the energy of the river. In addition, placing dredged material on the banks of a river can also increase the destructive forces of floodwater by preventing it from spilling onto floodplains where it would slow down and dissipate its energy. The effect of dredging can also have impacts upstream and downstream as the river seeks to return the riverbed to a more natural gradient.

In Blackford, the Danny and Kinpauch Burns are constrained by stone retaining walls and numerous bridges/crossings. Dredging could potentially undermine these structures and destabilise the bed and natural banks of the burns.

Nonetheless, dredging was considered as part of a potential flood protection option (Option 3) by modelling the effect of removing 300mm of silt from the Back Burn (upstream of The Cross). This required to be supplemented by ancillary works to provide a suitable level of benefit. However, due to the steep gradient of the channel and the rural upstream catchment, sediment transport will be an ongoing issue. This meant that Option 3 was considered unsustainable due to the requirement to repeatedly remove sediment from the channel.

The study has identified The Cross as a key area where sediment levels should be monitored as part of the Council's duties under the Flood Risk Management (Scotland) Act. The Council is required to assess bodies of water from time to time and to carry out clearance and repair works where it is considered that this would substantially reduce the risk of flooding. The Council currently inspects the watercourses around Blackford on a 6-monthly basis. We will continue to monitor and inspect the burns and carry out clearance works as required. Anyone who has concerns about their local watercourses can contact the Council on 01738 475000 at any time. It is important to note that it is the landowner who has primary responsibility to ensure watercourses in their land are maintained in a condition that does not give rise to flood risk.

The Council's legal duty is intended to address obstructions in a body of water and not to increase its capacity through channel widening or deepening which are considered to be more substantial engineering works.

Works to clear the bridge at the Cross have been carried out previously by the Council, and there are plans to carry this out again in 2022.

Q9. The preferred option includes diversion of high flows from the Danny Burn to the Burn of Ogilvie – can the Burn of Ogilvie accept additional flows without increasing downstream flood risk?

The Burn of Ogilvie passes residential areas on the west of Blackford within a deep channel. The diversion of flows from the Danny Burn into the Burn of Ogilvie during an extreme 200-year flood event was tested within the hydraulic model. It was found that this did not result in any unacceptable increases to flood risk in downstream areas.

It is important to note that this was basically an initial feasibility study. Further work and investigations are required to develop the proposals. This will include more detailed analysis of the effects of the scheme on flood risk in neighbouring areas to ensure there will be no detrimental impacts.

Q10. Have the options been discussed with landowners?

As noted above, the study is at an initial feasibility stage. The consultation exercise described in this report represents the initial discussion with the community, although

detailed consultation with landowners is limited at the initial stages of flood studies. However, as possible flood mitigation options have now been identified, the proposals will be developed further and the next stage will involve more detailed discussions with relevant landowners, as well as with the local community.

Q11. How would the recommended option be funded?

The recommended option has been submitted to SEPA for prioritisation and will hopefully be included within the national priority list of flood schemes. The scheme will also be included within the next Forth Flood Risk Management Strategy and Local Flood Risk Management Plan (covering the period from 2022 to 2028). At present, the Scottish Government provides capital grant funding for up to 80% of the capital cost of flood schemes on the national priority list, with the Council being responsible for the remaining 20%. This funding covers the project costs from outline design through to construction.

It is worth reiterating that there are currently no firm plans in place to build a flood scheme in Blackford. Aside from the need to secure funding, further design work and community and stakeholder consultation will be required before statutory approval can be sought under the Flood Risk Management (Scotland) Act. Further detailed design work will be required before tenders can be issued and construction can take place. This flood study is therefore the first phase in a long process required to deliver any flood protection scheme.

Q12. Perth & Kinross Council should stop permitting development on the floodplain.

Both Scottish Planning Policy and the Council's planning guidance have a presumption against built development within the functional floodplain. SEPA and Perth & Kinross Council will continue to apply local and national policies to avoid inappropriate development within the functional floodplain (defined by the 1 in 200-year flood event).

The improved understanding of flood risk as a result of this study will also help to further inform planning matters.