

DATA LABEL: PUBLIC



ENVIRONMENT POLICY DEVELOPMENT & SCRUTINY PANEL

BROXBURN PROPERTY FLOOD RESILIENCE SCHEME

REPORT BY HEAD OF OPERATIONAL SERVICES

A. PURPOSE OF REPORT

The purpose of this report is to update the Panel on the progress being made to deliver the council's Property Flood Resilience scheme for up to 15 properties in New Holygate and Parkwood Gardens, Broxburn.

B. RECOMMENDATION

The Panel is asked to note the content of the report and the proposals for implementing the Broxburn Property Flood Resilience scheme.

C. SUMMARY OF IMPLICATIONS

I	Council Values	Focusing on our customers' needs; being honest, open and accountable; providing equality of opportunities; making best use of our resources.
II	Policy and Legal (including Strategic Environmental Assessment, Equality Issues, Health or Risk Assessment)	<p>Policy - The approved Local Flood Risk Management Plan 2016-22 underlines the commitment of the council to a number of measures to reduce flood risk in its area and to deliver flood protection, particularly in Broxburn.</p> <p>Legal - The Flood Risk Management (Scotland) Act 2009 places a duty on the council, as a Responsible Body under the Act, to: work together with other competent and responsible bodies to reduce overall flood risk; act in the way best calculated to manage flood risk sustainably; promote sustainable flood management; act with a view to raising public awareness of flood risk; and act in the way best calculated to contribute to the achievement of sustainable development.</p>
III	Implications for Scheme of Delegations to Officers	None

IV	Impact on performance and performance Indicators	None.
V	Relevance to Single Outcome Agreement	SOA 4. We live in resilient, cohesive and safe communities; SOA 5. People most at risk are protected and supported to achieve improved life chances; SOA 7. We live longer, healthier lives and have reduced inequalities; and SOA 8. We make the most efficient and effective use of resources by minimising our impact on the built and natural environment.
VI	Resources - (Financial, Staffing and Property)	<p>Financial: Capital Funding has been allocated to fund a property flood resilience scheme at Parkwood Gardens and New Holygate in Broxburn.</p> <p>Staffing: Existing resources.</p> <p>Property/Assets: The property flood resilience measures installed at each property would be owned by the homeowner and would be the homeowner's responsibility to maintain.</p>
VII	Consideration at PDSP	Not applicable.
VIII	Other consultations	Homeowners, Scottish Flood Forum, other local authorities, and WLC Procurement Services.

D. TERMS OF REPORT

1.0 Background

- 1.1** A number of properties in New Holygate and Parkwood Gardens, Broxburn were badly affected by out-of-bank flows from the Brox Burn during the August 2008 flood event. These properties were not included in the original flood protection scheme because there had been no information to suggest a risk. Since this event, the feasibility of providing protection to these properties has been assessed.
- 1.2** The review involved additional topographic survey data, extensive remodelling and analysis, considering the newly-constructed components of the 2008 flood protection scheme, updated guidance and revised climate change projections, as well as long-term data from the council's own river level monitoring instrumentation. The latest model suggests that approximately 40 properties may be at risk from a 1 in 200-year event (i.e. 0.5% probability of this event happening in any one year).

2.0 Options to manage flood risk

Three options to help manage the risk of flooding to properties at New Holygate and Parkwood Gardens were considered:

- 2.1** 1) Flood embankment
Approximately 30 metres of earthworks to raise low spots were not hydraulically feasible due to the limited space. The earthworks would also result in substantial loss of functional garden space to 12 properties and the demolition of several garages.
- 2.2** 2) Flood wall
Approximately 280m of flood wall and channel widening to offer protection from a 1 in 200-year event was estimated to cost £2.1m. Due to the low benefit-cost ratio of this option, structural defences in this location would not qualify for Scottish Government funding.
- 2.3** 3) Property Flood Resilience
In 2017 a detailed property level assessment for at-risk properties in this location was carried out. The survey highlighted that 15 properties were potentially suitable for retrofit property flood resilience measures due to the modelled inundation depths at up to 1 in 50-year return periods (i.e. a 2% probability of this event happening in any one year).

3.0 Property Flood Resilience Survey

- 3.1** Typically, Property Flood Resilience (PFR) products are designed to withstand flood depths lower than a metre, proprietary products are generally only tested (and warranted) for a maximum depth of 600mm. Research has shown that these products are most cost-effective and provide the greatest benefit to properties prone to frequent, low-level inundation, i.e. within the 20 to 50-year return period range.
- 3.2** The installation of automatic products is the preferred option to manage risk to properties in this location. Potential automatic and manual products include: flood doors, flood barriers, utility barriers, anti-flood airbricks, non-return valves, toilet bungs and submersible pumps. Additional protection can be gained by waterproofing external walls and sealing around pipe and cable entries. These flood-resilient products aim to limit the potential for floodwater to enter homes, buying extra time to get people, belongings and assets to safety; they can also sometimes help make insurance cover easier to secure and more affordable.
- 3.3** Based on the 2017 survey and current estimated costs, capital funding was allocated to offer these products to the owners of 15 properties deemed most at risk. Estimated costs include: contractor's pre and post-installation surveys, product costs, installation, maintenance training and the provision of independent advice from the Scottish Flood Forum.
- 3.4** Since the 2017 survey, modelling updates have highlighted a number of additional properties in this area that may also benefit from such products. These properties should be considered for a potential future scheme, should additional funding become available.

4.0 Property Flood Resilience Scheme

4.1 Successful local authority PFR schemes have overcome many challenges: a lack of awareness or interest by homeowners who may not have been previously flooded; poor understanding of maintenance responsibilities and requirements; previous lack of product kitemarking; and poor installation. A much-needed PFR Code of Practice has recently been published by the Construction Industry Research and Information Association (CIRIA). The Code of Practice has been used as a guide for this scheme to help address these challenges.

4.2 The proposed scheme includes: homeowner advice; individual pre-installation surveys and post-installation audits; the cost of purchasing and installing the most suitable products, as agreed with the homeowner; manufacturer's product and contractor's installation warranties; and homeowner maintenance training and guidance.

4.3 It should be noted that the success of this scheme remains dependent on the willingness of homeowners to take-up the council's offer and to maintain the installed products thereafter. As these properties have not been flooded recently, uptake could be compromised; poor uptake will not prevent the scheme from being offered. All homeowners who participate and continue to maintain their products should secure protection from small, but frequent flood events, which may otherwise have resulted in damage to their properties and possessions.

4.4 Project Plan

All 15 homeowners will receive the same offer from the council, to fund the purchase and installation of the agreed products. The homeowner's commitment will only be towards maintenance of the products, which they have agreed to have installed.

4.5 Key Stages

- 1) Homeowners advised of the scheme (October 2021)
- 2) Contractor appointed
- 3) Homeowners provided with further details
- 4) Individual property survey with independent advice
- 5) Homeowner Agreement
- 6) Product installation
- 7) Independent post-installation audit and maintenance advice

4.6 Officers aim to have this project completed by autumn 2022. Timescales are dependent on the availability of the products, the appointed contractor and the continued ability of the Scottish Flood Forum to support the scheme.

4.7 Estimated Costs

The estimated cost of the scheme includes the design, supply and installation of products, and the cost of support from the Scottish Flood Forum. Depending upon the most suitable products for each property, the estimated cost ranges from £4,700 to £9,370 per property, in line with industry experience. The council has committed to fund this scheme, the total cost of which will be dependent upon the level of uptake.

4.8 Recommended Products

This scheme seeks to install automatic PFR products where suitable and appropriate for the homeowner. These products operate automatically when a rising external water level is detected, and are effective when occupants are asleep or away from home, e.g. flood doors, anti-flood airbricks and non-return valves.

- 4.9** In some circumstances, it may be more practical to deploy manual PFR products such as flood barriers, airbrick covers and toilet bungs, these need to be physically installed by occupants prior to rising external water levels and therefore rely on someone being at home and being aware of deteriorating weather conditions and potential flood warnings. All properties will be offered a free-of-charge subscription to the council's river level monitoring system, which provides free text alerts when levels in the Brox Burn rise above pre-determined thresholds. This is especially important when manual products require to be deployed as it gives occupants time to prepare. Where a property is not occupied by the homeowner, it is the homeowner's responsibility to ensure that the deployment of manual products is understood by the current occupants.

4.10 Qualified Contractors

Throughout the UK, there has been difficulty appointing suitably qualified and experienced contractors to successfully carry out the design and installation of PFR products. Advice from CIRIA's Code of Practice, other local authorities and the Scottish Flood Forum has been sought to inform the council's approach.

4.11 Property Surveys

General advice regarding the scheme and its benefits will initially be provided to all homeowners. With their agreement an individual property survey will be carried out, and further product advice given.

4.12 Homeowner Agreement

On completion of the property survey, a Homeowner Agreement will then be entered into, which details the products that the homeowner has agreed to install. The homeowner's future maintenance responsibilities will also be outlined in the agreement.

4.13 Maintenance Responsibilities

Regular maintenance is required to ensure the longevity of these products. Maintenance arrangements are recommended but would be the responsibility of the homeowner. Once this agreement is in place, product installation can begin. On completion, the contractor would offer product maintenance guidance. Ongoing homeowner maintenance responsibilities is a limitation to the ongoing integrity of this type of scheme, particularly when properties change ownership.

4.14 Community Resilience Group

A local community resilience group is considered the best way to keep flood risk management on the agenda on a regular basis and not just in the aftermath of a flood event. Additionally, if required, local volunteers can assist vulnerable adults during an event. The Scottish Flood Forum will advise homeowners on the setting up and running of a local resilience group.

5.0 The future of Property Flood Resilience Schemes

- 5.1** National funding of flood protection schemes has been significantly underestimated during Cycle 1 (2016 – 2022) of the Act, funding for Cycle 2 (2022 – 2028) actions is therefore currently uncertain. Flood protection schemes are becoming less economically viable, therefore in future we can expect to see the increased deployment of more cost-effective PFR measures, rather than structural defences.
- 5.2** Scottish Government funding for PFR measures in Broxburn has been requested in the draft Local Flood Risk Management Plan 2022-28. Publication of the Cycle 2 strategic plan is due in December 2021, and publication of the Cycle 2 local plan (including prioritised actions) has recently been postponed until December 2022 to allow resolution of the current funding uncertainties.

E. CONCLUSION

A Property Flood Resilience (PFR) scheme is to be offered to 15 properties deemed at greatest risk from smaller, more frequent flood events affecting New Holygate and Parkwood Gardens, Broxburn. PFR products aim to limit the entry of floodwater into homes, buying extra time to get people, and their belongings to safety, and can sometimes make insurance easier to secure and more affordable.

Officers aim to have this project completed by autumn 2022. This timescale is dependent upon the products and contractor's availability and continued support from the Scottish Flood Forum. The success of the roll-out is dependent upon the willingness of homeowners to have these products installed. Without a recent flood event in this area, uptake of the offer could be compromised. The 15 homeowners have been advised of the scheme.

The council has allocated capital investment for the design and installation of the agreed products only, the council is not responsible for the maintenance of these items. Homeowner's (with post-installation guidance) are responsible for product maintenance, which is key to their continued integrity. A local resilience group is recommended to ensure that product maintenance and flood risk remain on the community's agenda.

Traditional flood protection schemes are less-likely to be promoted because they are becoming less economically viable. In future, we can expect to see the increased deployment of the more cost-effective PFR schemes, where suitable. Scottish Government funding for PFR measures has been requested in the Cycle 2 (2022-2028) draft flood risk management plans. Publication of the Cycle 2 strategic plan is due in December 2021 and publication of the Cycle 2 local plan (including prioritised actions) is due in December 2022.

F. BACKGROUND REFERENCES

- Broxburn Post-Flood Review – Report by Head of Operational Services to the Council Executive, 19 May 2009
- Broxburn Post Flood Review - Report by Head of Operational Services to Broxburn, Uphall and Winchburgh Local Area Committee, 12 August 2009
- Broxburn Flood Prevention Scheme – An Update – Report to the Broxburn, Uphall & Winchburgh Local Area Committee, 27 October 2011
- Flood Risk Management Strategy for the Forth Estuary Local Plan District, Published by SEPA, December 2015
- Local Flood Risk Management Plan for the Forth Estuary Local Plan District, Published by Edinburgh City Council, June 2016
- Jacobs (Sep 2016) Broxburn Hydraulic Report v1.1
- Jacobs (Apr 2017) Broxburn Property Level Protection Technical Note
- Jacobs (April 2019) Broxburn Flood Mitigation Options - Review & Recommendations v2.0
- Broxburn Flood Protection Scheme – Proposed Works - Report by Head of Operational Services to the Council Executive, 25 June 2019
- CIRIA (2020) Property Flood Resilience Code of Practice Guidance, C790B

Appendices/Attachments: None

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Date of meeting: 17 November 2021