PERTH AND KINROSS COUNCIL

Climate Change & Sustainability Committee

16 November 2022

FLOOD STUDIES – BLACKFORD & INVERGOWRIE

Report by Head of Environmental and Consumer Services
(Report No. 22/281)

1. PURPOSE

1.1 This report describes the outcome of the Council's flood studies at two separate locations - Blackford and Invergowrie. The report recommends that a flood protection scheme is taken forward in Blackford as it has been found to be economically viable. As such, the proposed scheme for Blackford has been submitted to SEPA for national prioritisation and included in the published Forth Flood Risk Management Plan. The scheme will also be included in the next Forth Local Flood Risk Management Plan (to be published in December 2022). The report also recommends that a flood protection scheme in Invergowrie is not taken forward as it is not economically viable.

2.	**RECOMMENDATIONS**
2.1	It is recommended that the Committee: (i) notes the completion of the Blackford Flood Study and the Invergowrie Natural Flood Management Study, as required by the Forth and the Tay Estuary & Montrose Basin Flood Risk Management Strategies and Local Flood Risk Management Plans. (ii) notes that separate public engagement events have been held to disseminate the findings of each flood study. (iii) approves the recommendations of each study, including: • the proposals for a flood protection scheme in Blackford; • to stop work on a natural flood management scheme in Invergowrie as it is not economically viable. (iv) notes that the Council will continue to manage flood risk in the Invergowrie area by implementing the actions set out in the published Tay Estuary & Montrose Basin Flood Risk Management Plan and Local Flood Risk Management Plan. (v) notes that details of the recommended flood protection scheme for Blackford have been submitted to SEPA for national prioritisation and were included in the Cycle 2 (2021-2027) Forth Flood Risk Management Plan, published in December 2021.

	(vi)	notes that the recommended flood scheme in Blackford will also be included in the next Forth Local Flood Risk Management Plan, due for publication in December 2022.
	(vii)	notes that this position is consistent with the published Forth and Tay Estuary & Montrose Basin Flood Risk Management Plans.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background/Main Issues
- Section 5: Proposals
- Section 6: Conclusion
- Appendices

4. BACKGROUND / MAIN ISSUES

4.1 Under the Flood Risk Management (Scotland) Act 2009, SEPA and lead local authorities published new Flood Risk Management (FRM) Strategies and Local FRM Plans in December 2015 and June 2016 respectively. These documents set out a range of actions that SEPA and responsible authorities are taking to manage and, where possible, reduce the risk of flooding over a six-year period.

4.2 The Environment Committee approved the content and publication of the Forth and the Tay Estuary & Montrose Basin Local FRM Plans on 1 June 2016 (Report 16/241 refers). The Environment and Infrastructure Committee approved the content of an interim report on the progress made in implementing these Local FRM Plans on 23 January 2019 (Report 19/16 refers). Both of these published documents can be viewed at the following link: http://www.pkc.gov.uk/frmplans

4.3 The published FRM Strategies and Local FRM Plans identify various flood studies as a means of further improving the understanding of flood risk in certain locations. A flood protection study was identified for Blackford (within the Forth district) and a natural flood management study for Invergowrie (within the Tay Estuary & Montrose Basin district).

4.4 The purpose of these flood studies was to investigate what further action is required to manage flood risk in these locations. Such action can be implemented through flood protection schemes, including natural flood management works, where these are found to be technically feasible and economically viable.

4.5 The 2009 Act provides local authorities with discretionary powers to promote flood protection schemes. Only those flood schemes which have been included in the published FRM Strategies, the Local FRM Plans and the national priority list are taken forward in the subsequent 6-year period.

4.6 Although public authorities are expected to take a proactive role in managing and, where achievable, lowering flood risk, the primary responsibility for avoiding or managing flood risk still remains with land and property owners. The 2009 Act does not alter this. Individuals, businesses and communities must, therefore, play a critical role in making themselves more resilient and helping to reduce the impact of flooding.

Blackford

4.7 Blackford is located in the River Forth catchment within Potentially Vulnerable Area (PVA) 09/12.

4.8 The main potential source of flooding in Blackford is the Allan Water. Other smaller tributaries of the Allan Water, namely the Danny Burn, the Back Burn and the Kinpauch Burn also present a risk of flooding. The flood study has also given consideration to other small watercourses within the vicintity of Blackford including the Burn of Ogilvie, the Damakellis Burn and the Bardrill Burn.

4.9 In October 2018, consulting engineers, Stantec Ltd, were engaged to carry out a flood study for Blackford. Stantec subsequently employed Kaya Consulting Ltd as their sub-consultants to assist with the delivery of the flood protection study.

4.10 Stantec's investigations involved extensive data gathering and analysis, consultations, topographic surveys, a hydrological assessment, hydraulic modelling, an environmental desk study, an options study, an economic appraisal and the production of final reports.

4.11 The flood study analysed the flooding mechanisms affecting Blackford and a series of flood hazard maps were produced. The study identified that up to 32 residential properties and 6 commercial properties are potentially at risk during a 1 in 200 year flood event (the flood event with a 0.5% chance of occurring in any one year). The A9 was also highlighted as being at risk of flooding.

4.12 In managing flood risk, the Council is required to have regard to the economic, social and environmental impact of its actions. The Scottish Government's guidance recommends that decision making in flood risk management should be supported by an options appraisal.

4.13 Options appraisal includes a cost-benefit analysis and other techniques to determine whether a flood protection scheme meets its objectives, is sustainable and represents best value for money. In general, the cost of flood damage avoided over time must be greater than the cost of building the flood defences, i.e., they must achieve a benefit/cost ratio of greater than 1.0.

4.14 Stantec initially considered a long list of potential options to manage the risk of flooding. This long list was refined by a technical, environmental and economic appraisal until a short list of 4 options was selected for more

detailed analysis. This short list of potential options, together with the estimated costs and benefit/cost ratios, is shown in Appendix 1.

4.15 All four of the short-listed options produced benefit/cost ratios that were greater than 1.0. However, only options 3 and 4 would achieve the study objective of defending all properties (residential and non-residential) at risk of flooding in the 200 year flood event.

4.16 Options 2 and 3 would include property level protection (PLP) measures and these produced the greatest benefit/cost ratios. However, as noted in the table in Appendix 1, there are known limitations which must be considered with these measures. Relying on PLP would lead to uncertainty as to the level of flood protection and could still result in properties being flooded. Nevertheless, the study has highlighted that property level protection measures are an appropriate way for residents to take action to reduce the flood risk at their property.

4.17 The study concluded that Option 4 produced the best level of flood protection for Blackford, despite having the highest capital cost and lowest benefit/cost ratio. It was the only option considered that also defended the A9 from potential flooding, and there is scope to include wider benefits in terms of amenity and biodiversity.

4.18 The flood study therefore recommended Option 4 which includes the following set of actions:

a) A new diversion channel to take higher flows of water from the Danny Burn to the Burn of Ogilvie;
b) A new diversion channel to take higher flows of water from the Back and Kinpauch Burns into the Allan Water;
c) A new flood wall at Highland Spring to reduce the risk of flooding from the Allan Water;
d) Natural flood management measures (earth bunds or other suitable water retention features) upstream of Blackford to increase floodplain storage on the Allan Water.

4.19 A plan showing the recommended option is provided in Appendix 2.

4.20 The recommended option is estimated to have a capital cost of £7.8M and an overall benefit/cost ratio of 1.36. The flood study has, therefore, concluded that this flood protection scheme is economically viable and should be implemented.

4.21 If these actions were to be implemented, then a total of 38 properties would be protected up to the 1 in 200 year flood.

4.22 The flood scheme proposals will be developed in more detail in future and there may be scope to include a further allowance to the level of flood defence to account for future climate change. This would potentially defend up to 72 properties, provided the scheme maintained a positive benefit/cost ratio. The

impacts of climate change significantly increase the potential level of flood risk from the Danny Burn, which accounts for the difference in properties that could be defended.

4.23 In order to disseminate the findings of the flood study, and to outline how flood risk is being managed in the area, a community drop-in event was arranged. Due to the Covid-19 pandemic, this took the form of an online presentation held on 14 October 2021. Information was also placed on the Council's website to allow the community to view and comment on the study findings. Further details are provided in Section 4 of the Annex to this report.

Invergowrie

4.24 Invergowrie is located within the Tay Estuary and Montrose Basin catchment within Potentially Vulnerable Area (PVA) 07/12.

4.25 The main potential source of flooding to Invergowrie and the surrounding area is the Invergowrie Burn and its tributaries including the Fowlis, Liff, Balruddery and Lochee Burns.

4.26 In March 2020, consulting engineers, Sweco UK Ltd, were engaged to carry out a Natural Flood Management (NFM) study for Invergowrie.

4.27 Sweco's investigations involved extensive data gathering and analysis, consultations, topographic surveys, a hydrological assessment, hydraulic modelling, an environmental desk study, an options study, an economic appraisal and the production of final reports.

4.28 The flood study analysed the flooding mechanisms affecting Invergowrie and the surrounding area, and a series of flood hazard maps were produced. The study identified that up to 24 residential properties and 3 non-residential properties were potentially at risk during a 1 in 200 year flood event (the flood event with 0.5% chance of occurring in any one year).

4.29 In managing flood risk, the Council is required to have regard to the economic, social and environmental impact of its actions. The Scottish Government's guidance recommends that decision making in flood risk management should be supported by an options appraisal.

4.30 Options appraisal includes a cost-benefit analysis and other techniques to determine whether a flood protection scheme meets its objectives, is sustainable and represents best value for money. In general, the cost of flood damage avoided over time must be greater than the cost of building the flood defences, i.e., they must achieve a benefit/cost ratio of greater than 1.0.

4.31 Sweco initially considered a long list of potential options (focusing primarily on NFM measures) to manage the risk of flooding. This long list was refined by a technical, environmental and economic appraisal until a short list of 5 options was selected for more detailed analysis. This short list of potential options,

together with the, estimated costs and benefit/cost ratios, is shown in Appendix 3.

4.32 Plans showing each option are included in Appendix 4.

4.33 Sweco concluded that none of the options considered have a benefit/cost ratio greater than 1.0 and a natural flood management scheme for Invergowrie and the surrounding area is therefore not economically viable.

4.34 Work on an NFM scheme has therefore not progressed to the design stage and does not form part of the published Tay Estuary & Montrose Basin FRM Plan or Local FRM Plan.

4.35 The study has also informed other on-going actions to managed flood risk under the 2009 Act. Invergowrie is one of the 254 Potentially Vulnerable Areas (PVAs) in Scotland that have been identified as being at a significant risk of flooding and where flood risk management actions should be prioritised. The current Tay Local FRM Plan includes the following actions for Invergowrie:

- Strategic flood mapping and modelling (Scottish Water)
- Flood Forecasting (SEPA);
- Awareness raising;
- Self-help measures;
- Maintenance (clearance and repair works);
- Emergency plans/response;
- Managing flood risk through the application of development planning policy

4.36 The recommendations and conclusions within Sweco's final report align with the actions proposed as part of the current Tay Estuary & Montrose Basin Local FRM Plan.

4.37 As noted at 4.6, individuals, businesses and communities must play a critical role in making themselves more resilient and helping to reduce the impact of flooding. The Tay Local FRM Plan therefore includes actions which are intended to enable communities to act and to become more resilient to flooding.

4.38 In order to disseminate the findings of the flood study, and to outline how flood risk is being managed in the area, an online community consultation event took place between 8 and 25 September 2022. Further details are provided in Section 4 of the Annex to this report.

4.39 The Council will continue to raise awareness of flooding and encourage the local community and other landowners to become more prepared and resilient to deal with flooding in the future.

5. PROPOSALS

Blackford

5.1 The Council's consulting engineers have recommended a flood protection scheme for Blackford. It is proposed that this scheme is taken forward by the Council.

5.2 The Council's consulting engineers, Stantec Ltd, have recommended a flood protection scheme that involves a collection of localised actions, as set out in section 4.18 of this report.

5.3 The proposed flood protection scheme is shown in Appendix 2 of this report.

Invergowrie

5.4 As the consulting engineers report has demonstrated that a natural flood management scheme in Invergowrie is not economically viable, it is proposed that no further work should be undertaken on the development of this scheme. This is consistent with the published Tay Estuary & Montrose Basin FRM Plan.

5.5 The Council will continue to manage flood risk in the Invergowrie area by implementing the actions set out in the published Tay FRM Plan and Local FRM Plan.

Next Steps

5.6 SEPA set a deadline of the end of December 2019 for local authorities to identify new flood schemes for inclusion in the second cycle of FRM Plans and Local FRM Plans covering the period from 2022-2028. The flood schemes identified across Scotland were then to be prioritised and added to an updated national priority list.

5.7 As the initial outputs from the Blackford flood study were available at that time, the recommended flood scheme was submitted to SEPA for prioritisation. The proposed scheme has also been included in the updated Forth Local FRM Plan and will be included in the new Forth Local FRM Plan, which will cover the period from 2022-2028.

5.8 The new Forth Local FRM Plan should set out the proposed implementation arrangements for the flood scheme in Blackford, including timescales and how it will be funded. However, due to the on-going Scottish Government/CoSLA review of capital funding for flood schemes, and the other schemes that the Council is already progressing, the timescales and funding arrangements for the Blackford scheme remain unclear for the time being. The next phases of work to develop the flood scheme proposals will therefore not commence until the funding review provides further clarity around capital grant funding and provision is made within the Council's capital programme.

6. CONCLUSION

6.1 The report provides an update on the outcome of separate flood studies in Blackford and Invergowrie.

6.2 The Council engaged consulting engineers to carry out these flood studies. These communities were identified as being among the Council's highest priority flood studies within the Forth and the Tay Estuary & Montrose Basin Flood Risk Management Strategies and Local Flood Risk Management Plans.

6.3 The Council's consulting engineers have recommended a flood protection scheme for Blackford. The proposed scheme is economically viable and the preliminary proposals consist of various measures to reduce the risk of flooding in Blackford. This report therefore seeks the Committee's approval that the consulting engineer's recommended proposals be promoted as a flood scheme for Blackford, subject to funding availability.

6.4 The Council's consulting engineers have concluded that a natural flood management scheme in Invergowrie is not economically viable and therefore no flood scheme is proposed. The consulting engineers have recommended a number of actions to mitigate flood risk in the area in the future. These actions align with those outlined in the published Tay Estuary & Montrose Basin FRM Strategy and Local FRM Plan.

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- Appendix 1 – Blackford Flood Study – Short List of Potential Options
- Appendix 2 – Blackford Flood Study – Plan of Recommended Option
- Appendix 3 – Invergowrie NFM Study – Short List of Potential Options
- Appendix 4 – Invergowrie NFM Study – Plans of Potential Options

ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	**Yes / None**
Community Plan / Single Outcome Agreement	**Yes**
Corporate Plan	**Yes**
Resource Implications	
Financial	**Yes**
Workforce	**None**
Asset Management (land, property, IST)	**None**
Assessments	
Equality Impact Assessment	**Yes**
Strategic Environmental Assessment	**Yes**
Sustainability (community, economic, environmental)	**Yes**
Legal and Governance	**Yes**
Risk	**Yes**
Consultation	
Internal	**Yes**
External	**Yes**
Communication	
Communications Plan	**Yes**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 The proposals relate to the delivery of the Perth and Kinross Community Plan/Single Outcome Agreement in terms of the following priorities:

(iii) Promoting a prosperous, inclusive and sustainable economy
(iv) Supporting people to lead independent, healthy and active lives
(v) Creating a safe and sustainable place for future generations

Corporate Plan

1.2 The proposals relate to the achievement of the following priorities in the Council's Corporate Plan:

(iii) Promoting a prosperous, inclusive and sustainable economy;
(iv) Supporting people to lead independent, healthy and active lives; and
(v) Creating a safe and sustainable place for future generations.

2. Resource Implications

Financial

2.1 It should be noted that the proposed flood protection scheme in Blackford will not be implemented at this time. The implementation arrangements (if known)

will be set out in the Cycle 2 Forth Local FRM Plan, which will cover the six year period from 2022–2028 and is due to be published in December 2022. Subject to available funding, consulting engineers will be re-engaged to carry out further investigations and develop the flood scheme proposals at some time during 2022-2028. As a result, there are no immediate resource implications arising directly from the recommendations in this report.

2.2 However, the flood risk management planning process will have future financial implications. The next Forth Local FRM Plan will contain the implementation arrangements including a timetable for the proposed flood scheme, who will be responsible for implementing it, as well as how it will be funded (if known) and coordinated by SEPA and the responsible authorities over the next six year cycle from 2022-2028.

2.3 The 2009 Act requires the Scottish Government to have regard to the FRM Plans and Local FRM Plans when allocating funds to SEPA and responsible authorities. The Scottish Government, CoSLA and SEPA agreed the distribution of capital funding to the actions identified nationally in the Cycle 1 (2016-2022) FRM Plans and Local FRM Plans. The following arrangements currently apply:

(i) Only works and schemes that are prioritised in the FRM Plans and Local FRM Plans are eligible for capital funding.
(ii) Flood protection schemes attract capital grant assistance of up to 80% of their estimated project cost at tender stage from the Scottish Government. Local authorities are required to fund the remainder of the cost of flood schemes.
(iii) The Scottish Government allocates capital funding to local authorities engaged in flood risk management across Scotland. 80% of this capital funding will continue to be allocated to flood protection schemes with the remaining 20% to other actions within the FRM Plans, as detailed in the Local FRM Plans. This 20% is distributed to the 32 Scottish local authorities based on the number of properties at risk of flooding and the estimated annual average flood damages.

2.4 At present, the allocated capital grant is adjusted as the flood scheme proposals are developed. The estimated costs of flood schemes across Scotland will therefore continue to be reported to the Scottish Government by local authorities on an annual basis.

2.5 These arrangements are currently under review by the Scottish Government and CoSLA, due to the current projected costs of Cycle 1 flood schemes across the country, and the available funding.

2.6 The Council currently has four flood protection schemes that had been included in the national priority list for Cycle 1 from 2016-2022 and work on them continues. However, as a result of the above review, the 4th priority flood scheme, on the Annaty Burn in Scone, has been paused. While this scheme may still progress in the future, it is likely to take longer to implement due to these funding limitations.

2.7 No capital funding has been allocated to any new Cycle 2 flood schemes in Scotland. The Council has not made an allocation for its 20% contribution to the capital cost at this time. The timescales and funding arrangements for the proposed new flood scheme in Blackford therefore remain unclear for the time being.

2.8 The conclusion of the national review into capital funding for flood schemes is awaited.

2.9 The proposals and cost estimates for the recommended flood scheme in Blackford still have to be developed through a long process of further investigations, consultation, outline design, the statutory process, detailed design, tendering and construction. Experience on other similar schemes has invariably shown that the costs estimated at feasibility stage always increase. The scheme costs noted in this report are therefore subject to change and will have to be carefully monitored going forward.

2.10 There are no current revenue funding implications arising from the recommendations in this report.

Workforce

2.11 There are no workforce implications arising directly from the recommendations in this report.

Asset Management (land, property, IT)

2.12 The proposals in this report have no asset management implications at this time.

3. Assessments

Equality Impact Assessment

3.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties. The Equality Impact Assessment undertaken in relation to this report can be viewed clicking here.

3.2 The proposals in this report have been considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome.

(i) It was determined that the proposals be assessed as **relevant** with the following actions taken to reduce of remove the following negative impacts:

- The construction works for the proposed flood scheme could temporarily have a greater impact on mobility impaired, sight

impaired, blind people or disabled people, on children and the elderly and infirm, and on pregnant women or nursing mothers, in relation to adverse psychological, physical and health impacts. Appropriate mitigation measures will be adopted to minimise disruption, noise, dust and vibration and to ensure adequate safe access throughout the construction works.

(ii) The proposals be assessed as **relevant** with the following positive outcomes expected following implementation:

- The proposed flood scheme will have the same positive impact for all equality groups as the reduction in flood risk to both communities will provide benefits for all (improved safety, health & wellbeing through the avoidance of flood impacts and damages) in the long term.

Strategic Environmental Assessment

3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.4 The matters presented in this report were considered under the Environmental Assessment (Scotland) Act 2005 and no further action is required as it does not qualify as a PPS as defined by the Act and is therefore exempt.

3.5 It is likely that Environmental Impact Assessments will be required to support the proposed flood schemes described in this report. These assessments will be progressed once consulting engineers have been engaged.

Sustainability

3.6 Under the provisions of the Local Government in Scotland Act 2003, the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009, the Council also has a duty relating to climate change and, in exercising its functions must act:

- in the way best calculated to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programmes; and
- in a way that it considers most sustainable.

3.7 Following an assessment using the Integrated Appraisal Toolkit, it was previously determined that the proposal is likely to contribute positively to the following corporate sustainable development principles:

(i) Climate Change

Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
The flood scheme proposed in this report will help to manage the increased flood risk to Blackford brought about by climate change.

(ii) Community

Creating a sense of place (e.g. a place with a positive 'feeling' for people, and local distinctiveness) *(Principle 22)*

Justification:
The flood scheme proposed in the report will help to make the Blackford community safer and more sustainable for residents, through a reduction in flood risk. This will help the communities to thrive in the longer term despite the temporary construction impacts.

3.8 Following an assessment using the Integrated Appraisal Toolkit, it was previously determined that the proposal is likely to contribute negatively to the following corporate sustainable development principles:

(iii) Consumption and Resources

Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
There will be a short-term increase in the use of materials and resources during construction of the flood scheme, but a future reduction due to reduced flood risk.

Mitigation:
The Environmental Impact Assessment and eventual Construction Environmental Management Plan will consider energy consumption and waste management practices during construction.

Legal and Governance

3.9 The Head of Legal and Governance has been consulted on this report.

3.10 The legal basis for the proposals set out in this report is the Flood Risk Management (Scotland) Act 2009.

Risk

3.11 Flooding is a natural phenomenon that can never be entirely prevented. However, the Council is required to manage and, where possible, reduce flood risk.

3.12 The flood scheme proposed in this report will reduce flood risk in Blackford. The risks associated with the proposals set out in this report will be identified and managed through this individual project.

4. Consultation

Internal

4.1 The Head of Legal and Governance and the Head of Finance have been consulted in the preparation of this report.

External

Blackford

4.2 Blackford Community Council, SEPA, NatureScot, the Allan Water Steering Group (comprising the Forth Rivers Trust, Nature Scot, Scottish Government, Scottish Forestry and SEPA) and all relevant landowners and occupiers were consulted during the development of the proposals.

4.3 Due to the Covid-19 Pandemic, the flood study information was placed on the Council's website and consultation hub from 17 September to 5 November 2021 to allow the community to view and comment on the findings. A live online presentation was also held on 14 October 2021. This provided detail on:

- the risk of flooding in Blackford;
- the outcome of the Council's flood study;
- work to raise awareness of flooding and to help the local community to become more prepared and resilient to deal with flooding.

4.4 The live online event consisted of a presentation from the Council setting out the proposals, with the opportunity for residents to submit questions to the project team. The project team consisted of representatives from the Council's Flooding Team, Stantec Ltd, Kaya Consulting Ltd, SEPA and the Scottish Flood Forum. The event was recorded and remains available to view via the Council's Youtube channel at: https://youtu.be/lom2y6IpXHQ.

4.5 A letter was issued to the local elected members and the Community Council, and 426 letters were sent to residents and businesses within the local community, to highlight the availability of the online information. Social media

posts were also arranged through the Council's communications team. The Community Council also helped by circulating the information through their channels of communication.

4.6 A total of 9 responses were provided as a mixture of e-mails and completed comment forms, with each covering a number of comments and questions.

4.7 In general, the comments received from the community were positive. The majority of the comments were made in relation to the flood risk maps produced by the study. Some comments were made about the proposal for a flood wall as part of the recommended scheme and a concern was also raised about the suitability of one of the watercourses to receive the diverted flow of water included as part of the proposals. Further consultation with the community will be carried out if the proposals are to be taken forward.

4.8 The Council has issued a response to the community to answer any questions raised during the online consultation period.

Invergowrie

4.9 SEPA, Scottish Water, Angus Council, Dundee City Council, NatureScot, the James Hutton Institute and all relevant landowners and occupiers were consulted during the development of the proposals.

4.10 An online public consultation event was held between 8 and 25 September 2022 via the Council's consultation hub. The aim of this exercise was to provide the local community with further information on:-

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

4.11 A newsletter was issued to the local elected members and 280 local residents and businesses to advertise the information provided on the Council's consultation hub. The information provided summarised the work carried out by the consulting engineers and how flood risk might be managed in the future. The online consultation event was also advertised on the Council's social media. A total of 3 responses were received.

4.12 In general, the response to the online consultation event was limited. However, it should be noted that the flood study has confirmed that flooding in Invergowrie, and the surrounding area, only affects a small number of properties on an infrequent basis.

4.13 The Council has issued a response to the community to answer any questions raised during the online consultation period.

5. Communication

5.1 The communication arrangements to date were as noted in Section 4 above.

5.2 The Council will continue to communicate with the local community, statutory consultees, local landowners and other stakeholders as the scheme proposals are developed.

2. BACKGROUND PAPERS

2.1 The following background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (and not containing confidential of exempt information) were relied on to a material extent in the preparation of the above report:

- PKC – Environment Committee – 9 September 2015, The Flood Risk Management (Scotland) Act 2009, Selected Actions and Prioritisation (Report No. 15/359).
- PKC – Environment Committee – 1 June 2016, The Flood Risk Management (Scotland) Act 2009, Publication of Local Flood Risk Management Plans (Report No 16/241).
- PKC – Environment and Infrastructure Committee – 23 January 2019, The Flood Risk Management (Scotland) Act 2009, Publication of Interim Report (Report No 19/16).
- PKC – Environment and Infrastructure Committee – 19 May 2021, The Flood Risk Management (Scotland) Act 2009: Second Cycle of Flood Risk Management Plans (Report No 21/60).