

PERTH AND KINROSS COUNCIL

Environment, Enterprise and Infrastructure Committee

6 September 2017

Comrie Flood Protection Scheme

Report by Director (Environment)

PURPOSE OF REPORT

This report provides an update on the progress of the Council's investigations into a potential flood protection scheme in Comrie. The report proposes that the Committee approves the preferred scheme and that it is developed further through the outline design phase, publication, detailed design and eventual construction.

1. BACKGROUND / MAIN ISSUES**Flood Risk Management in Comrie**

- 1.1 Comrie is located in the River Earn catchment within Potentially Vulnerable Area (PVA) 08/14.
- 1.2 Comrie is located at the confluence of three large rivers – the Water of Ruchill, the River Earn and the River Lednock. There has been a history of flooding in the town, and in the Dalginross area in particular.
- 1.3 On 24 October 2007, the Council's Enterprise & Infrastructure Committee approved the promotion of a flood scheme for Comrie subject to the availability of finance (Report 07/681 refers). This was following a previous flood study by consulting engineers, Mouchel, that had indicated that a flood scheme may be economically viable.
- 1.4 When funding was made available, Mouchel were engaged in 2008 to develop the existing flood study. A limited number of options for a flood scheme were considered in some detail and recommendations were made to undertake further investigations.
- 1.5 In August and November 2012, the Dalginross area was severely affected by flooding on the Water of Ruchill. As a result, the Strategic Policy & Resources Committee of 22 November 2012 approved a package of measures to address the flooding, including emergency flood protection works. (Report No. 12/551 refers).
- 1.6 These flood protection works reduced the future risk of flooding to the Dalginross area from the Water of Ruchill. However, the wider flood risk from the River Earn and the River Lednock remains, as does the combined flood risk from all three rivers. It is estimated that approximately 290 residential properties and businesses are still at risk of flooding in Comrie.

- 1.7 Mouchel were therefore re-engaged in 2013 to develop proposals for a wider flood scheme taking into account the 2012 flooding and works carried out. This was a more comprehensive, developed investigation into all of the available options for a flood scheme.
- 1.8 The approach to tackling flooding in Scotland has changed in recent years. Under the Flood Risk Management (Scotland) Act (the 2009 Act), SEPA and lead local authorities published new Flood Risk Management (FRM) Strategies and Local FRM Plans. These documents set out a range of actions that SEPA and responsible authorities will take to manage and, where possible, reduce the risk of flooding over a six year period.
- 1.9 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.
- 1.10 The Environment Committee approved the publication of the Tay Local FRM Plan on 1 June 2016 (Report 16/241 refers). The published document can be viewed at the following link: <http://www.pkc.gov.uk/frmplans>
- 1.11 Since the publication of the FRM Strategies and Local FRM Plans last year, the Council has been moving forward with the implementation of the actions set out therein.
- 1.12 The 2009 Act provides local authorities with discretionary powers to promote new 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 will be taken forward in the six year period.
- 1.13 One of the key actions included within the Tay Local FRM Plan is to implement a flood protection scheme in Comrie. The flood scheme was included as the 7th highest scheme on the national priority list.
- 1.14 All Flood Protection Scheme actions within the Tay Local FRM Plan have been provided with provisional funding agreement from the Scottish Government. The Scottish Government will commit 80% in capital grant to the scheme cost (based upon design, construction tender and professional fees estimate) and the Council's contribution is expected to be 20% of this.
- 1.15 Mouchel considered five main options and a number of secondary options for managing flood risk within Comrie. These options were evaluated against various technical, environmental and economic criteria. The flood risk management options considered, and the estimated costs and benefit / cost ratios, are summarised in Appendix 1.

- 1.16 The flood scheme recommended by Mouchel (Option 2 in Appendix 1) involves the construction of flood walls and embankments along the three river corridors to reduce the risk of flooding to properties in Comrie.
- 1.17 This Scheme is estimated to have a capital cost over the financial years to 2021/22 of £24.6M.
- 1.18 The Benefit Cost Ratio (BCR) of the Scheme at this cost is 2.0. This value estimates that the economic benefits accrued over the lifetime of the Scheme, through the avoidance of flood damages, is double the estimated cost of the Scheme. This is the greatest BCR value compared to the other investigated options.
- 1.19 The BCR has been calculated using an appraisal 'toolkit' known as the "Multi-Coloured Manual" which has been developed specifically to allow flood scheme appraisal and to compare flood risk management options. The Scottish Government and Defra guidance both require the use of this tool for this purpose.
- 1.20 The Multi-Coloured Manual is based upon estimating the impact to any receptors (properties, etc.) from flooding at various estimated flood depths. It should be noted that the 'values' attributed to the damages are based upon economic losses (i.e. to the country), brought about by a flooding event, rather than individual losses.
- 1.21 As noted in 1.14, the Scottish Government has committed 80% (£19.7M) in capital grant to the scheme and the Council's contribution is expected to be 20%, giving a budgeted cost to the Council of £4.9M. This is included in the Council's current capital programme.
- 1.22 The recommended flood scheme, and the alternative options that were considered, were put to public consultation in September 2016. The details can be viewed at the following link:-
<http://www.pkc.gov.uk/comriefloodscheme>
- 1.23 In general, the response from the community and key stakeholders to the recommended scheme was positive. Their responses will continue to inform the future design and development of the proposals for the flood protection scheme.

2. PROPOSALS

- 2.1 The consulting engineers have recommended a flood scheme involving flood walls and embankments. It is proposed that this is adopted as the Council's preferred flood scheme. This will allow the Council to focus on the development of this option and to promote it as the Comrie Flood Protection Scheme.
- 2.2 The preferred flood scheme is shown in Appendix 2. The proposed scheme includes the provision of approximately 3km of new flood walls and 1km of

flood embankments along the Water of Ruchill, the River Earn and River Lednock river corridors. Some of the older flood defences on the Water of Ruchill will also require to be raised and refurbished in order to bring them up to modern standards and to extend their design life.

Next Steps

- 2.3 It is proposed that the recommended scheme is further developed to the outline design stage.
- 2.4 Once the outline design has been sufficiently developed, it is proposed that the scheme be published under the 2009 Act. This will provide the Council with the legal powers to construct the flood scheme.
- 2.5 Subject to the scheme being confirmed under the 2009 Act, the same legislation ensures that planning consent will be deemed to have been granted.
- 2.6 It is proposed that the scheme will then be designed up in detail, put out to tender, and eventually constructed.

3. CONCLUSION AND RECOMMENDATIONS

- 3.1 This report provides an update on the investigations into the Comrie Flood Protection Scheme.
- 3.2 The Council's consulting engineers have recommended a flood protection scheme consisting of flood walls and embankments. This form of scheme is economically viable.
- 3.3 The report seeks the Committee's approval that the consulting engineer's recommended proposal be adopted as the Council's preferred scheme.
- 3.4 It is recommended that the Committee:
 - (i) Notes that the development of a flood protection scheme for Comrie is consistent with the published Tay Flood Risk Management Strategy and Local Flood Risk Management Plan.
 - (ii) Notes the progress on the development of the proposed Comrie Flood Protection Scheme.
 - (iii) Notes that the flood scheme proposals were put to public consultation in September 2016.
 - (iv) Approves that the recommended proposals is adopted as the Council's preferred scheme.
 - (v) Agrees that the recommended scheme should now progress through the outline design phase, publication, detailed design and eventual construction, subject to obtaining statutory approval under the 2009 Act and funding remaining in place.
 - (vi) Requests the Director (Environment) to bring back further reports in due course.

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1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	Yes / None
Community Plan / Single Outcome Agreement	Yes
Corporate Plan	Yes
Resource Implications	
Financial	Yes
Workforce	Yes
Asset Management (land, property, IST)	Yes
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 The Comrie Flood Protection Scheme has been prioritised in the published Tay FRM Strategy and Local FRM Plan. The flood scheme is therefore eligible for Scottish Government capital grant assistance of up to 80% of its tender value. The Council will be required to fund the remainder of the cost of the scheme, assuming that it remains economically viable.
- 2.2 Although funding is provisionally secured, it should be noted that the implementation of the flood scheme will be some time away and is not yet certain. The scheme proposals require further development and the relevant statutory approval and consents must be obtained.

Capital

- 2.3 The estimated capital cost of the scheme over the financial years to 2021/22 is £24.6M. The Scottish Government has committed £19.7M in capital grant to the scheme and the Council's contribution is expected to be 20% of this, giving a budgeted cost, to the Council of £4.9M. The Scheme has been included in the Councils capital programme.
- 2.4 Clearly the issue of funding support from central government will continue to have a significant bearing on when the Council will be able to deliver the flood scheme. While capital funding is in place, the scheme can only be implemented if this remains to be the case.
- 2.5 In the meantime, the estimated costs of flood schemes across Scotland continue to be reported to the Scottish Government by local authorities on an annual basis.

Revenue

- 2.6 The on-going maintenance costs for the scheme are estimated at £25,000 per annum.
- 2.7 This additional cost will require to be considered through the Council's budget process once the scheme has been completed.

Workforce

- 2.8 The project management of the flood scheme will be undertaken by the Council's Structures and Flooding Team. There will be a resource implication for Legal and Property Services for technical assistance required throughout the duration of the project.

Asset Management (land, property, IT)

- 2.9 In order to construct the proposed scheme there may be a requirement to purchase land and/or provide compensation to relevant landowners. Property Services have been consulted on the scheme and a landownership plan has been produced to inform future negotiations with relevant landowners.

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 by 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) Assessed as **relevant** and actions taken to reduce or remove the following negative impacts:
 - The construction works 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) Assessed as **relevant** and the following positive outcomes expected following implementation:
 - The flood scheme will have the same positive impact for all equality groups as the reduction in flood risk to Comrie will provide benefits for all (improved safety, health & wellbeing through 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 An Environmental Impact Assessment is however required for the flood Scheme described in this report and this 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 has been 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 Comrie 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 will help to make the local community safer and more sustainable for residents, through a reduction in flood risk. This will help the community to thrive in the longer term despite the temporary construction impacts.

3.8 Following an assessment using the Integrated Appraisal Toolkit, it has been 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 and the Head of Democratic Services have 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 Risks associated with the proposal will be managed through appropriate communication and project management.

4. Consultation

Internal

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

4.2 The local elected members, Planning, Property, Land Quality, Environmental Health, Structures Team and the Council's Biodiversity Officer were consulted during the development of the proposals.

External

- 4.3 Comrie Community Council, SEPA, SNH, Historic Environment Scotland, Scottish and Southern Energy and all relevant landowners and occupiers were consulted during the development of the proposals.
- 4.4 Two community drop-in sessions were held in Comrie on 1 and 8 September 2016. The aim of these events was to provide the local community with further information on:-
- the risk of flooding in Comrie;
 - the Council's proposals for a flood scheme;
 - work to raise awareness of flooding and to help the local community to become more prepared and resilient to deal with flooding.
- 4.5 A letter was issued to elected members, the Community Council and the local resilience group summarising the work carried out by the consulting engineers and how flood risk will be managed in the future. 937 letters were sent to local residents and businesses within the community to advertise the events. Approximately 150 people attended the community drop-in sessions.
- 4.6 The drop-in sessions included a central display, a presentation and a series of plans of the scheme options. Representatives from the Council's flooding team, Mouchel, SEPA, the Scottish Flood Forum and the Council's Health, Safety and Wellbeing Manager were available to answer questions and provide further information. Those attending were given an opportunity to record their views and questions on comment forms. 24 comment forms were returned to the Council after the sessions.
- 4.7 In general, the impression received from the drop-in sessions was that the local community were in favour of the preferred flood scheme (Option 2 – Walls and Embankments). The majority of the returned comment forms also indicated general approval for this option.
- 4.8 The Council has issued a response to the community to answer any questions raised during the drop-in sessions or on comment forms.
- 4.9 The public consultation materials used at the drop-in sessions and the response to those questions can still be viewed on the Council's website at <http://www.pkc.gov.uk/comriefloodscheme> and also on the Comrie Community Council website at <http://www.comrie.org.uk/>.

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. The above noted website will continue to be updated and further letters and newsletters will be issued to the local community as appropriate.

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 or exempt information) were relied on to a material extent in the preparation of the above report;

- PKC – Enterprise and Infrastructure Committee – 24 October 2007, Flood Mitigation Schemes and Flood Studies (Report No. 07/681)
- PKC – Environment Committee – 30 January 2008, Biennial Report on Flood Prevention Responsibilities 2007 (Report No 08/41)
- PKC – Environment Committee – 4 November 2009, Biennial Report on Flood Prevention Responsibilities 2009 (Report No 09/504)
- PKC – Environment Committee – 21 March 2012, Biennial Report on Flood Prevention (Report No 12/135)
- PKC – Environment Committee – 20 November 2013, Progress Report, Flood Risk Management (Scotland) Act 2009 (Report No. 13/544)
- PKC – Environment Committee – 12 November 2014, The Flood Risk Management (Scotland) Act 2009, Short List of Potential Measures to Manage Flood Risk (Report No. 14/483)
- 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)

3. APPENDICES

3.1 Appendix 1 – Summary of Flood Scheme Options Considered

3.2 Appendix 2 – Plan of Preferred Flood Scheme

Summary of Flood Scheme Options Considered

Option	Flood Risk Management Option	Cost	Benefit / Cost Ratio
1	Dredging	£34.9M (+£0.95M every 5 years)*	N/A
2	Flood Walls and Embankments	£24.5M	2.0
3	Upstream Storage of Flood Water (Water of Ruchill and River Earn)	£69.3M	0.69
4	Flood Walls, Embankments and Upstream Storage of Flood Water (Water of Ruchill)	£64.5M	0.75
5	Flood Walls, Embankments and Upstream Storage of Flood Water (River Earn)	£48.8M	1.0
-	Use of Existing Dams on Lochs Earn and Lednock**	N/A	N/A
-	Removal of the Weir on the River Earn**	N/A	N/A
-	Raising of Dalginross Bridge**	N/A	N/A
-	Increasing Local Floodplain Storage Capacity**	N/A	N/A
-	Diversion Channel(s)**	N/A	N/A
-	Property Relocation**	N/A	N/A
-	Natural Flood Management**	N/A	N/A

* Significant depths of dredging would be needed to achieve the required standard of flood protection and this was not found to be feasible. Dredging would also have to be repeated every 5 years to maintain river bed levels and hence would require to be funded on an on-going basis.

** A number of other potential secondary options (shaded in light grey) have also been assessed and were discounted. These are options which could help reduce flood risk in combination with the main options 1-5 but would not be sufficient to manage flooding on their own. Hence no estimated costs or benefit/cost ratios are quoted.

Plan of Preferred Flood Scheme

