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**Report To: Safe, Sustainable Communities Committee**      **Date 1 September 2009**

**Report By: Corporate Director Environment and  
Community Protection**

**Report No  
ECP/ENV/AB09.17**

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**Subject: Inverclyde Flood Plan**

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## **1.0 PURPOSE**

1.1 To advise Committee of the development of a Flood Plan for Inverclyde Council.

## **2.0 SUMMARY**

2.1 The Flood Plan is in two parts (copies with Member Services Officer).

Part 1 comprises a summary of flood risk in Inverclyde.

Part 2 focuses on the watercourses identified in Part 1 as being the most susceptible to flooding.

2.2 In Part 1 all sources of flooding are considered with investigation into coastal, fluvial, pluvial and reservoir flooding being undertaken.

A series of maps accompanies the report summarising the flood risk areas identified to date, the main watercourses draining the areas and the trash screens (grills) located on them. Specific maps of the Hole Burn and Carts Burn are developed, and a Regional Catchments Map is also produced showing the various catchments' details.

A scoring matrix is constructed which determines and prioritises the risk of flooding, together with estimated costs for data gathering, modelling, pioneering and reporting for the watercourses considered.

2.3 To confirm the flooding mechanisms and identify appropriate solutions Part 2 focuses on the Carts Burn and the Hole Burn as these are the watercourses identified in Part 1 as being the most susceptible to flooding, the flooding issue at Cove Road having previously been investigated. Mathematical hydraulic models of these two watercourses are built based on information gathered from surveys and hydrological assessments. These identify the frequency and extent of the flooding from which outline flood risk management measures are developed along with preliminary cost estimates for these watercourses.

Part 2 concludes with comment on present operational practices.

## **3.0 RECOMMENDATIONS**

3.1 That Committee note the contents of the report.

3.2 It is remitted to the Corporate Director, Environment and Community Protection to establish and Chair a Flood Risk Management Working Group consisting of representatives from the various agencies and riparian owners as outlined in the report and that this Group will address the collective responsibility of flood risk management within Inverclyde.

3.3 That an Action Plan will be developed on the issues raised in this report. This Action Plan will address timescales and resourcing matters.

**Alan G. Barnes**  
**Head of Environmental Services**

## 4.0 BACKGROUND

- 4.1 In February 2008 the Scottish Government published a consultation document “The Future of Flood Risk Management in Scotland” with the aim of identifying a method of how to implement a fully sustainable approach to flood risk management through consultation with appropriate parties.
- 4.2 It is recognised that flooding from the watercourses in Inverclyde is a pressing issue causing disruption to residents, property flooding and road closures. Flooding incidents are also time consuming and costly to address. £100,000 was approved in the Council’s 2008-2009 budget to provide a Flood Plan. Inverclyde Council consequently commissioned its Term Call Off Consultant, Grontmij, to prepare a Local Flood Plan for Inverclyde taking into account the likely changes in the approach to flood risk management in Scotland resulting from the Flood Risk Management (Scotland) Act 2009 (FRM(S)A). The overarching principles of the FRM(S)A are to establish a framework for sustainable flood risk management in Scotland, and to establish a joined up approach to the flood risk management process. The Flood Plan includes a review of the results of the Scottish Government’s consultation document, and identifies the key components of the FRM(S)A that may impact this study.
- 4.3 The brief for this study was to consider all the sources of flood risk in Inverclyde, collate all available information and present this on a GIS database; present the flood risks associated with the various watercourses/aqueducts; rank the flood risks and suggest costed mitigation measures. Thereafter, to advise on specific problems and solutions.
- 4.4 It is important to realise that in order to identify appropriate solutions to individual flooding problems, watercourses require to be considered in their entirety, because relieving a particular pinch point may exacerbate a situation elsewhere. Hence the ethos adopted in part 1 was to consider Inverclyde in terms of its various watercourses. Part 1 of the report considers all watercourses in Inverclyde, and within the available funding Part 2 looks at potential solutions to the management of these watercourses.

The report recommends that further study work should be carried out on the other watercourses in Inverclyde as there is limited information on previous floods.

Recommendation is also made to install a flow monitoring regime covering all 11 major watercourses in Inverclyde.

## 5.0 PROPOSALS

- 5.1 It is considered that the flood risks in Inverclyde could be reduced by a combination of further capital and revenue schemes as set out below.

The estimated costs for the specific capital schemes recommended in the report for the Hole burn and Carts Burn Watercourses are:-

### Hole Burn

|   |          |
|---|----------|
| Refurbish stop planks in the Greenock Cut                         | £40,000  |
| Improved reservoir management                                     | £300,000 |
| Southward extension of Woodstock Road Culvert                     | £200,000 |
| Extension of Overton Outfall culvert                              | £70,000  |
| Woodstock Road embankment flood drainage study                    | £10,000  |
| Attenuation pond in Rankine Park                                  | £150,000 |
| Dredging Lady Alice Pond approach channel                         | £200,000 |
| Roadside retaining wall at Lady Alice Pond                        | £30,000  |
| Drainage feasibility study at South St Newton St culvert entrance | £10,000  |
| Raising headwall at South St/Newton St culvert entrance           | £30,000  |
| Further detailed modelling of Hole Burn                           | £25,000  |

## Carts Burn

|   |                |
|---|----------------|
| Modification and maintenance of Whinhill Reservoir      | £300,000       |
| Construct attenuation weir in Auchmountain Glen         | £200,000       |
| Raise embankments at Auchmountain Glen culvert entrance | £30,000        |
| Feasibility study of former reservoir at Kennedy's lane | £5,000         |
| Additional culvert at Crescent Street                   | £600,000       |
| Amend Crescent Street culvert entrance                  | £40,000        |
| Raise Crescent Street culvert headwall                  | £30,000        |
| Further detailed modelling of Carts Burn                | <u>£25,000</u> |
| TOTAL CAPITAL   | £2,290,000     |

## **6.0 IMPLICATIONS**

- 6.1** Inverclyde Council owns areas of land on which it is proposed to construct flood attenuation works. Liaison will be required with the Head of Property Services and Facilities Management if schemes on such land are to be progressed.
- 6.2** Legal: Legal Services will be required to give advice if development of schemes on land owned by third parties are to be progressed

**6.3** Financial: Refer 7.1 below.

**6.4** Other:  
Scottish Water: Liaison with Scottish Water will be required if control of the discharges from the reservoirs in their ownership is to be addressed; similarly if diversion of flood water into the sewerage system at Crescent Street (estimated at £300,000) is to be progressed.

Network Rail and British Railways Board (Residual) Ltd: Liaison with NR and BR(B)R will be required if development of schemes on land in their ownership is to be progressed

Riparian Owners: Liaison with various riparian owners will be required if development of schemes on land in their ownership are to be progressed

Historic Scotland and Scottish Natural Heritage: Liaison with HS and SNH will be required if schemes impinging on the Greenock Cut and its associated reservoirs are to be progressed.

Watercourses require to be assessed in their entirety, therefore liaison will be necessary with all departments of the Council holding responsibility for watercourses passing through areas under their control.

## **7.0 CONSULTATION**

**7.1** Property Services and Facilities Management have been consulted on this report

Legal Services have been consulted on this report

Finance Services have been consulted on this report and confirm that the Council has agreed £2.7m per year for Asset Management in 2009/10 and 2010/11 increasing to £4.5m per year in 2011/12 and 2012/13. This fully allocates available capital resources for the next 4 financial years. These works will require to be considered in the context of other competing Asset Management pressures and the approved available funding including contributions from other parties.

## **8.0 EQUALITIES**

**8.1** This report has no impact on the Council's Equality Agenda

## **9.0 CONCLUSION**

One of the basic tenets of the FRM(S)A is “to establish a joined up approach to the flood risk management process”. In order to achieve this consideration should be given to establishing a Flood Risk Management Working Group. Representation on this working group should be drawn from all interested services within the Council, such as Roads, Property Services, Emergency Planning etc. together with representatives from outside agencies such as Scottish Water, Transport Scotland (Amey), Network Rail, BRBR Ltd., etc. and other major riparian owners.

The resultant costs of flooding impact on a broad spectrum of society both within the Council's area of responsibility and that of other interested parties. Therefore part of the proposed Working Group's remit should be to address flooding strategy and identify the appropriate agencies responsible for dealing with the issues arising.

## **ATTACHMENTS**

Inverclyde Flood Plan  
Part 1  
Summary Report  
March 2009.

Inverclyde Flood Plan  
Part 2  
Hole Burn and Carts Burn, Greenock  
March 2009.