

Agenda Item	9
Report No	RC/041/19

HIGHLAND COUNCIL

Committee: **Ross and Cromarty Committee**

Date: **6 November 2019**

Report Title: **Community Services Response to Dingwall Flood Events 2019**

Report By: **Executive Chief Officer Customer and Communities**

1. Purpose/Executive Summary

- 1.1 This report provides Members with a further update to the report that was presented at Ross and Cromarty Committee in August which details Community Services' response to the Dingwall Flood Incidents in July and August 2019.

2. Recommendations

2.1 Members are asked to note:-

- the update on community engagement following the flooding events;
- the maintenance and improvement works undertaken and planned as set out in section 7 of the report; and
- that the EDI Committee is to consider the progress with a flood scheme for the area including investment in improvements to the flood plain between Fodderty and Peffrey railway crossing; new culverts under Strathpeffer Road and Docarty Road; a new flood wall at Bridgend; widening of the existing channel behind Burns Crescent; improvements to the existing trash screen where the Boggan Burn (Knockbain Burn) enters the culvert just upstream of Blackwells Court and a new coarse debris screen in the upstream Boggan Burn (Knockbain Burn) catchment.

3. Implications

- 3.1 Resource – The identification of any required additional or redistributed resources will form the subject of future report to Committee.

- 3.2 Legal – The Council has duties under the Civil Contingencies Act, along with other Category One Responders, to plan for and respond to emergencies. The Council have duties under the Flood Risk Management (Scotland) Act 2009 to assess bodies of water with regard to flood risk and have powers under this Act to promote Flood Protection Schemes.

Duties and responsibilities in regard to flooding are set out in the Highland Council's web site at: <https://www.highland.gov.uk/info/1226/emergencies/81/flooding/2>

- 3.3 Community (Equality, Poverty and Rural) – The effects of flooding on people and property are significant, with potential impacts across the entire community.
- 3.4 Climate Change / Carbon Clever – It is recognised that flooding events may become more frequent and the flood study for Dingwall and Blairninich by the Flood Management Team in response to existing flood risk, makes an allowance for climate change implications.
- 3.5 Risk – Until a Flood Prevention Scheme can be implemented, there is a risk that this type of event will occur with greater frequency. It should be recognised that a flood scheme alleviates flooding and reduces the risk, but the risk cannot be eliminated. Severe weather and flooding are risks on the national community risk register and the Highland Council's Corporate Risk Register includes participation in multi-agency planning and exercising for emergencies based on the national community risk register.
- 3.6 Gaelic - No implications.

4. Background

- 4.1 At 6pm on the 10 July 2019 46mm of rain over a 24 hours period fell in the Dingwall area catchment. Subsequently flooding occurred both from the Boggan Burn (also known as Knockbain Burn) and from surface water flowing overland.
- 4.2 A second rainfall event occurred at 4pm on the 5 August 2019. 22 mm of rain over a 24-hour period resulted in overland surface water flooding.
- 4.3 Witnesses describe how there was flooding to Burn Place before the inlet to the Boggan Burn overtopped. This suggests that there was more surface water flowing onto Burn Place than the road drainage could cope with.
- 4.4 Over the two events at least 12 properties were damaged by flooding. It should be noted that the responsibility for protecting property lies with the owner and not The Highland Council. However where possible Community Services will try to reduce the risk of flooding during an event. Additionally, several roads suffered from either subsidence due to floodwater washing out the soil below the road or the road surface being washed away by the force of the water.
- 4.5 The return period for these events vary depending on the methodology used. The return period calculated by SEPA was 1 in 5 year whereas Scottish Water estimate is approximately 1 in 30 year.

4.6 Areas affected by the flooding include:-

- Simpson Place;
- Strathpeffer Road at Bridgend;
- Ferry Road at the sewage works;
- Jubilee Road;
- Craig Road;
- Tullich Avenue;
- Munro Place and associated footpaths;
- Tulloch Street;
- Park Street;
- Gladstone Avenue;
- Burn Place;
- Mill Street;
- Blackwells Street;
- Macrae Crescent and surrounding areas;
- Grant Street;
- Millcraig Road;
- George Street; and
- Old River Road

4.7 During the first incident on the 10 July 2019 The Highland Council Recovery Group met and planned recovery work, staffing and communication including:-

- Checking on properties;
- Checking and clearing screens in the affected area and in other areas at risk of flooding in the area;
- Providing community resilience messaging through Emergency Liaison Groups;
- Issuing updated information and responding to media enquiries; and
- Ensuring additional operatives were put on stand-by and stocks of sand bags increased, where necessary, to ensure effective response to any further incidents, given the ongoing poor forecast.

4.8 A multi-agency Local Resilience Partnership Group meeting was held on the afternoon of 11 July which considered Met Office forecasting and flood alert information from SEPA. Meeting arrangements, contact details, British Red Cross support, and a social media hashtag were all agreed in the event of any further impacts over the following twenty-four hour period.

4.9 A multi-agency drop in session attended by around 60 people took place on Tuesday 6 August 2019 in Council Offices, Dingwall between 5.00 pm and 7.00 pm. Representatives from the Scottish Flood Forum, SEPA, Police Scotland, Scottish Fire and Rescue Service, NHS Highland and the Highland Council's Development and Infrastructure, Flood Management Team, Community Services, Roads and Housing Teams were in attendance to speak to those affected and to provide advice and answer questions.

4.10 Following the drop-in session, ten residents contacted The Highland Council requesting a site visit to discuss how the flooding affected their properties and what advice could be offered. In conjunction with the Development and Infrastructure's Flood Team a total of 6 meetings were held. The remaining residents were contacted by either telephone or email and were satisfied except for one resident that could not be contacted.

- 4.11 A significant amount of local knowledge was gained from these visits which can be used to both improve drainage infrastructure and on the efficiency of future incident responses.
- 4.12 A subsequent public meeting was held on 16 September 2019. Representative from the previous drop-in Session Actions were in attendance together with Scottish Water. Approximately 50 residents attended the event.
- 4.13 Actions arising from the both the drop-in session and the subsequent public meeting are summarised as follows: -
- Question and Answer documents to be made available to residents without email accounts;
 - Report to be presented to the 7 November 2019 EDI Committee detailing the following recommendations: -
 - Flood Study Options Submission to SEPA and Scottish Government; and
 - Capital allocation for Boggan Burn Improvement Works which include a new coarse debris screen and Trash screen upgrade
 - Further public engagement in relation to a flood scheme;
 - A surface water management plan to be completed by March 2022
 - Details of SUDS schemes for recent developments upstream of flood affected areas.
 - Boggan Burn Culvert to be cleaned and repaired by December 2019. Works to include:-
 - Removal of silt and debris from the culvert;
 - Replace the horizontal bar safety screen at the outfall with a vertical bar screen to make vegetation removal safer and easier; and
 - Repair or replace the seized valve on the overflow weir at the upstream end. The valve diverts flow into either the old or the new culverts
 - Reset existing gullies that are proud of the road surface and replace damaged gullies. Survey progressing to quantify work required;
 - Complete gully clearing in flood affected areas;
 - Provide GPS gully sucker information for Dingwall;
 - Sand bag garages proposal to be developed and implemented in conjunction with Housing Service;
 - Provide assistance to Dingwall residents to establish a community flood resilience scheme; and
 - Promotion of Scottish Flood Forum leaflets and advice on how to protect property and reduce the impact of flooding.
- 4.14 At the end of the meeting there was some interest expressed by people attending in volunteering to be part of a flood action team. This will be pursued following the community council elections with the support of the Ward Manager.

5. Incidents Response

- 5.1 Prior to the rainfall event on 10 July 2019 the Boggan Burn inlet trash screen was visually checked that morning and was found to be clear of debris.
- 5.2 Due to the intensity of the rainfall on 10 Jul 2019 the Boggan Burn sensors triggered all three alarms within 15 minutes. Debris, including two plastic 450mm diameter pipes, was washed downstream to the trash screen on the inlet to Boggan Burn culvert. The two pipes were caught in the trash screen and restricted the water from entering the culvert. As a result, the water over topped the inlet and flooded the surrounding area.

- 5.3 On both flood events two Ross & Cromarty based Roads Officers, two foremen and six operatives to attend the incidents.

Although the emergency response target is three hours to attend an incident, Community Services were on site within one hour.

- 5.4 Plant deployed during these incidents included:-

- 1 Gully sucker;
- 1 Sweeper;
- 1 JCB;
- 1 Mini-excavator;
- 1 HGV;
- 2 Pickups; and
- 1 Van

- 5.5 On 10 July 2019 the man hole covers at the Boggan Burn Culvert were opened and a mini excavator was used to clear the debris from the trash screen at the inlet. Once the debris was removed the water stopped overflowing the inlet.

- 5.6 The outlet to the Boggan Burn culvert has a horizontal screen in place to prevent unauthorised entry as a health and safety measure.

Vegetation was caught on the horizontal bars and was removed manually using rakes. These operations proved both hazardous and difficult. On completion the rate of flow out falling from the culvert increased.

- 5.7 During the event sand bags were made available from Craig Road and Greenhill depots. Operatives were filling and delivering sand bags using HGV's and a JCB to load. Approximately 500 sand bags were collected by residents. At times there was more demand for sand bags than could be delivered. This resulted in residents being told to collect sand bags from the depots only to find that there none available at that point in time.

6. Remedial Works

- 6.1 Many of the gullies and manholes within the flooded area had deposits of silt and debris washed into them. A gully sucker was employed to clear the manholes and gullies affected by the flooding.

- 6.2 Once the floodwater had receded a sweeper was used to clear the affected roads of silt and debris.

- 6.3 A CCTV survey of the Boggan Burn culvert was undertaken on the 26 July 2019.

The survey results are summarised as follows:-

- 13 drain runs with fine or coarse silt deposits restricting the cross-sectional area up to 15%;
- 2 drain runs restricted up to 20-25% of the cross-sectional area;
- 1 drain run restricted up to 60%;
- 1 large boulder noted; and
- Several displaced joints and other minor damage

MSIS, in conjunction with UMS who undertook the survey, have been asked to attend a site meeting in October to discuss repair methods. It is expected that remedial works will be undertaken by the end of December 2019.

- 6.4 The valve that control the overflow weir at the junction between the old Boggan Burn culvert and the new one has seized. The will be removed and either repaired or replaced.
- 6.5 Repairs to the subsidence in Gladstone Avenue and to the manhole in Grant Street have been repaired. In both cases the floodwater has escaped from the culvert and washed out the soil leading to subsidence.

7. Maintenance and Improvement Works

- 7.1 The horizontal bars at the Boggan Burn culvert's outfall into the Dingwall Canal are being replaced with vertical bars. This will make it easier and quicker to remove any debris. Fabrication and installation of the new vertical bars has been awarded to Albion Works Ltd for £2,300.
- 7.2 Flood sensitive locations will be prioritised for future gully cleaning.
- 7.3 A review of how sand bags can be collected by the public has commenced. Pallets of 50 sand bags were made available to Craig Rd depot and Greenhill Depot. As demand out stripped supply, on several occasions during the two events no sand bags were available at times.
- 7.4 It is proposed to use unoccupied Housing garages to store up to 150 sand bags per garage in dry conditions across Dingwall and other locations. The garages would be secured using a combination padlock. The Duty Officer can issue the combination code to residents who could open the garage and collect sand bags. The garage would then be left open for other residents to collect sand bags.
- 7.5 The proposal has been discussed in outline with the Housing Service who recognise the benefit to Housing tenants. A list of vacant Housing garages is currently being prepared by Housing Service.
- 7.6 A survey of the condition of all gullies in flood affected roads has started. Broken or proud gullies will be replaced across the flood affected roads to improve drainage.
- 7.7 Sykes Pumps Ltd offered the hire of an emergency pump from their Inverness Depot. The emergency pump can be towed by a small van and can be delivered on a 24/7 basis to Dingwall within 2 hours.
- 7.8 A review of gully suckers and sweepers will be undertaken across Community Services to improve the availability of plant to respond to flooding incidents.
- 7.9 Consultants CH2M (now Jacobs) were appointed in March 2016 by Development & Infrastructure to develop a study to alleviate flood risk in Dingwall and Blairninich. The project aims were to investigate measures to reduce flood risk at Dingwall and Blairninich through both conventional engineering methods as well as through Natural Flood Management. Development & Infrastructure have already commissioned a consultant to undertake a flood study of the Peffrey River system. This study includes the Boggan Burn.

- 7.10 Initial findings indicate that the provision of a coarse screen upstream of the Boggan Burn inlet, and an improved trash screen and inlet to the burn's culvert would help reduce debris becoming trapped and restricting the flow of water. These measures would help reduce the risk of over topping of the culvert inlet and the associated flooding.
- 7.11 Development and Infrastructure are seeking funding to progress the coarse screen and improved trash screen in advance of the completion of the flood study. These proposals are included in the River Peffrey Flood Protection Scheme option which is included in the Potential Flood Schemes – Preferred Options Report to be presented to the Environment, Development and Infrastructure Committee on 7 November 2019. At this Committee Members will be asked to approve the submission of the preferred options to SEPA for national prioritisation. Historically, Scottish Government has provided 80% grant funding for construction of prioritised Flood Protection Schemes.

Designation: Executive Chief Officer Customer and Communities

Date: 30 October 2019

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Background Papers: [Dingwall Flooding Incident Report](#) – 14 August 2019