

**THE HIGHLAND COUNCIL**

**CAITHNESS AREA COMMITTEE – RESOURCES**  
**26<sup>th</sup> February 2007**

Agenda Item	13
Report No	CC/50/07

**Flood Damage Remedial Work**

**SUMMARY**

The report lists the actions taken to repair flood damage and mitigate the effects of future flooding.

**1. Background**

Storm damage occurred in Caithness between the 23<sup>rd</sup> and 27<sup>th</sup> of October 2006, resulting in numerous flooded properties and damage to Council infrastructure, bridges, culverts and roads. The Fire and Rescue service were involved in pumping flood water whilst TEC Services supplied and deployed sandbags and assisted in cleaning debris.

This report deals with actions taken after the event, to repair damage and identify further work which may help to reduce damage in similar events in the future.

The rainfall on 25<sup>th</sup> October has been classified on a “once in fifty year” event, however its damaging effect was exacerbated because it came at the end of a wet period when watercourses and drains were already under pressure and the ground was saturated.

**2. Flooded Premises**

Immediately after the event, TEC Services staff started to collate the 156 reports of flooding which had been received by telephone and email and continued to arrive by letter for some time afterwards. Events were prioritised on the basis of

- 1) Flood water entering domestic or commercial premises
- 2) Flood water affecting gardens and accesses.
- 3) Flood water elsewhere.

The plan was to contact everyone who had been in touch, to get a full description of what happened and assess the causes, so that, where possible, remedial works could be designed to reduce the chances of a recurrence.

It soon became obvious that, in addition to flooded premises, there had been extensive damage to the Council’s roads, bridges and culverts and some of the damage posed a danger to the public. With limited staff resources available, priority was given to infrastructure repairs. Analysis of flooding incidents will be recommenced once the bulk of the repairs have been completed.

The present situation is summarised below.

<b>Type of Incident</b>	<b>Number Reported</b>	<b>Number Resolved – Action taken</b>	<b>Number Resolved – no action</b>	<b>Further Action Required</b>
PRIORITY 1 (Premises)	56	24		32
PRIORITY 2 (Gardens & Drives)	56		46	10
PRIORITY 3 (Other)	44		44	0
<b>TOTAL</b>	<b>156</b>	<b>24</b>	<b>90</b>	<b>42</b>

Of the incidents to premises, only two involved more than one house from the same cause.

All incidents are being mapped for future reference and will be used to prioritise future watercourse inspection and drainage maintenance.

### **3. Infrastructure Damage**

The table below lists 21 specific repair projects. The cost of remedial works is estimated at £569K. Not all this will be a Council responsibility.

9 of the 21 projects are complete, 7 are under construction, 4 are still being investigated and 1 has been postponed due to high water levels.

TEC services sets an annual contract for “dayworks” i.e. rates for labour and plant are set, without any description of the actual work to be undertaken. Using this contract has permitted rapid deployment whilst still keeping control of the costs.

A presentation showing some of the repairs will be available on the day of the meeting.

### **4 Inspection and Maintenance**

A consultant was employed to inspect all the Council’s road bridges in the County. We can therefore be confident that all bridge damage has been identified, however there may well be damaged or choked culverts which have not yet been discovered. Culverts have been checked where possible but underground damage may not show up until the next storm.

Watercourses are inspected periodically for silting and obstruction by debris and vegetation. The Council has power to carry out maintenance work if there is a significant risk that a blockage will cause flooding to premises

### **5. Minor Works**

In addition to the more major projects listed above, the DLO has carried out flood related work at 23 locations and has work in hand at a further 16. These are listed in the table below:

### **6. Financial Implications**

At present costs are being separately recorded and not charged to the area budget. It will be an HQ decision on where funding will eventually be found.



## SPECIFIC REPAIR PROJECTS

Schedule of Specific Repairs Projects resulting from Storm Damage on 23-27 October 2006

Stage

I = Investigation D= Design T =

out to Tender W = work under way

D = DLO C = Completed C = Contractor P = Postponed

Location	Description of damage	Progress	Stage Note 1	DLO Contr. Note 2	Asset Type	Estimated Costs	Actual Costs
U219 Brimms Culvert, Forss by Thurso	Brimms culvert severely damaged	Awarded to A&W Sinclair on daywork rates. 90% complete	C	C	Culvert		58,392
Lynegar Culvert, B874	Scour to foundations	Awarded to A&W Sinclair on dayworks. Starts 08 Jan 07 for 3 weeks. Works 40% complete	C	C	Culvert		13,645
Stemster Culverts B874	Erosion & scour to abutments	Awarded to MM Millers on dayworks. Starts 08 Jan 07 for 3 weeks. Works 40% complete.	C	C	Culvert		7,930
Forss A836	Culvert partially collapsed causing flooding and washout to private drive		C		Culvert	15,000	
Westerdale Lade Bridge	3.5m (h) x 4m (l) x 1.2m (d) hole scoured out in rock foundations and masonry abutments	Awarded to Gunns on dayworks. Works 100% complete	C	C	Bridge		16,000
Braehour Bridge, U310	Abutments to masonry arch bridge severely washed out to both sides	Awarded to Gunns on dayworks. Work starts 08 Jan 07. Works 40% complete.	C	C	Bridge		15,000
Ivy Cottage culvert C1	Culvert heavily silted/blocked with damage to downstream masonry headwall	Awarded to Holts under dayworks. Starting 15 Jan 07 for 3 weeks	C	C	Culvert	15,000	
A882 Bylbster	Ditch silted and blocked by debris. Clear our and lay 600mm diameter pipe	Awarded to MM Millers on dayworks. Works started 13 Dec 06 & estimated completion by 12 Jan 07. 100% complete	C	C	Road		51,012
Whitebridge U564	Bridge surcharging and erosion	Bypass culvert required. Design still progressing.	I		Culvert	15,000	
Smerlie Road near Lybster, C14	Damage to c/w – water forcing up tar	Location plan and sketch to be prepared for DLO	I		Road	10,000	
South Road, Wick	Replace 2 collapsed longitudinal culverts – 2.5 to 3m deep	Part of £750K work involving the Transport Scotland and Scotland Transerv. No direct involvement.	I		Culvert	150,000	
Watten Bridge A882	Scour to south banks both up & downstream. Damaged apron. Suspected scour to abutments. Approx 5 x 3m concrete panel with flagstone washed immediately	Awaiting diving team to undertake inspection	I		Bridge	5,000	
West Gills Footbridge (to be adopted)	Adopted footway bridge swept away. Span approx 5m	Gunn's replace footbridge as not formerly adopted yet.	C	C	Bridge	0	0
Heath Culvert B870	Severely damaged culvert	Awarded to Pentland Construction under dayworks. Starting 12 Feb 07	W	C	Culvert	10,000	
Achnavast B870	Culvert washed out	DLO to replace culvert. Started on site. 20% complete.	W	D	Culvert	15,000	
Achavam Calder Mains, B870	Culvert washed out.	Replace 600mm dia culvert. Not started	W	D	Culvert	7,500	
Brawlbin Culvert, U202	Abutments washed and displaced stone in masonry arch	Awarded to Pentland Construction under dayworks. Starting 15 Jan 07	P	C	Culvert	15,000	
West Murkle Bridge U242	Arch ring washed away to approx 1.2m depth. Abutments also undermined & spandrel wall suffered partial collapse	Awarded to A&W Sinclair under dayworks. Quick bridge installed to provide access to properties. Concrete invert now poured & loose stone removed from arch ring. Works in progress. 30% complete.	W	C	Bridge	50,000	
Houstry Road U11	Road drainage & culvert blocked with debris	Awarded to MM Millers on dayworks. Not started yet.	W	C	Road	50,000	
Lythmore Bridge U221	West abutment undermined & collapsed leading to deck beams dropping by 10-20mm	Awarded to Gunns on dayworks to undertake temporary repairs only due to flow of water. Tem works nearing completion	W	C	Bridge	20,000	
Seater Landfill	Haul road within the facility washed away. Water pump burnt out.; unable to cope with the exceptional flow of water resulting from the storm	Replacement pump ordered	W	C	LS	30,000	

Note 1 – I = Investigation; D = Design; T= Tender; W = Work under way; C = Completed; P = Postponed

Note 2 – D = DLO; C = Contractor

## DLO PROJECTS

Register No	Date Received	Location	Work Required	Works Completed
7683	20-Oct-06	Stemster, Gillock	Kerbing work	15-Dec-06
7696	23-Oct-06	Tannach Road, Thrumster	Kerbing work	11-Dec-06
7697	23-Oct-06	Banniskirk , Halkirk	Ditch Cleaning	
7717	23-Oct-06	Dunnet,	Install Gully,Clean ditches	
7718	23-Oct-06	Castletown - Wick Side,	Kerbing work	20-Dec-06
7723	23-Oct-06	West Side, Dunnet	Ditch Cleaning	
7731	24-Oct-06	Bower ,	Piping Of Ditch	02-Feb-07
7750	26-Oct-06	Halkirk,	Ditch Cleaning	
7751	26-Oct-06	Gillock,	Ditch Cleaning	
7764	26-Oct-06	Canisbay,	Kerbing work	
7799	26-Oct-06	Dunnet,	Ditch Cleaning	
7808	26-Oct-06	dunbeath, caithness	New Gullies	01-Feb-07
	26-Oct-06	Janetstown, Wick	Replace Culvert	
W1186	27-Oct-06	Olrig Cemetery	Repair paths	06-Nov-06
W1187	27-Oct-06	Olrig Cemetery	Remove Trees	
7851	30-Oct-06	Achnavast,	Replace Culvert	
7853	30-Oct-06	Thurso,	Remove Trees	30-Oct-06
7854	30-Oct-06	Thurso,	Repair paths	31-Oct-06
7864	31-Oct-06	roadside, Forss	Ditch Cleaning	
W1189	31-Oct-06	Castletown	Ditch Cleaning	
7882	31-Oct-06	Bower,	Replace Culvert	23-Nov-06
7881	01-Nov-06	Halkirk,	New Gullies	18-Jan-07
W1193	03-Nov-06	John O'Groats	Repair bus shelter	07-Nov-06
7900	06-Nov-06	Hill of Forss, Thurso	Replace Culvert	20-Dec-06
7904	06-Nov-06	Mid Calder,	Replace Culvert	
7911	07-Nov-06	Watten,	Clean drain	08-Nov-06
W1210	10-Nov-06	Mall, Thurso	Remove Trees	29-Nov-06
7943	15-Nov-06	Glengolly,	New Gullies	

7949	16-Nov-06	Upper Bowertower, Wick	Ditch Cleaning	
7952	17-Nov-06	Juniper Bank , Thurso	Replace Culvert	30-Nov-06
7958	17-Nov-06	John O'groats ,	Replace Culvert	20-Dec-06
W1212	21-Nov-06	Barrock	Kerbing work	15-Dec-06
7848	30-Nov-06	Houstry, Dunbeath	Ditch Cleaning	24-Nov-06
W1219	05-Dec-06	Westerdale No1 Bridge	Bridge Repairs	06-Dec-06
W1220	05-Dec-06	Lyth,	Ditch Cleaning	06-Dec-06
W1224	08-Dec-06	Earlier Work at same location W1074 & W1168,	Replace Culvert	26-Jan-07
W1225	11-Dec-06	Schoolhouse, Durran	Replace Culvert	11-Jan-07
W1228	13-Dec-06	Gerston, Halkirk	Ditch Cleaning	23-Dec-06
8028	13-Dec-06	Shebster,	Replace Culvert	

**RECOMMENDATION**

Note the terms of the report.

Signature:

Designation: Area Roads and Community Works Manager

Date:

Ref: