



# Impact Report

## Winter Flooding 2015-16

**Northumberland, Durham and Tees Area**

**V2 May 2016**

**FINAL REPORT**

## Version History

Version	Reference	Date	Comments
V1	DRAFT	25/04/16	Draft version issued to Flood Resilience Team for comments.
V2	FINAL	06/05/2016	Ready for dissemination

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## Executive Summary

The North of England was hit by a series of storm events during the winter of 2015/16 and caused flooding to a number of communities across the area.

Storm Desmond occurred during the 5<sup>th</sup> and 6<sup>th</sup> December and caused the most severe flooding impacts, particularly along the Tyne Valley. Subsequent storms followed Desmond including Storm Eva on 26<sup>th</sup> December and an unnamed storm between the 4<sup>th</sup> January and 7<sup>th</sup> January which both caused further fluvial flooding as rain fell on already saturated catchments. Significant impacts were seen in communities like Corbridge, Haydon Bridge, Ovingham, Warden and Hexham however isolated instances of flooding occurred across many communities in the Northumberland Durham and Tees (NDT) area.

The Environment Agency's NDT Area Incident Room was open on numerous occasions throughout the Winter period, totalling over 100 hours:

4<sup>th</sup> Dec, 11:30 – 6<sup>th</sup> Dec, 22:00

25<sup>th</sup> Dec, 22:00 – 27<sup>th</sup> Dec, 06:30

4<sup>th</sup> Jan, 23:30 – 7<sup>th</sup> Jan, 16:30

We issued 54 Flood Alerts and 42 Flood Warnings during the winter flooding period to over 2200 properties. This included 2 Severe Flood Warnings for the River Tyne at Corbridge and the River Tyne at Wellbank Riverside, Corbridge as the sheer volume of water caused our flood defences at The Stanners to overtop, meaning there was significant risk to life and infrastructure.

An estimated 320 properties (179 residential and 141 commercial) flooded across the winter period from fluvial and surface water sources. 294 of these properties were flooded during the Storm Desmond event. Flooding did occur on more than one occasion to a small number of properties in Corbridge (Wellbank) and Ovingham during the whole winter period.

Over 3500 properties were protected by our flood defences however Storm Desmond caused damage to some of our flood defences, including the flood banks at Corbridge. These defences required emergency repairs immediately after levels in the River Tyne had reduced. All other assets were inspected after the floods and a programme of permanent repairs for identified defects has been developed.

During the storm on the 5<sup>th</sup> and 7<sup>th</sup> January heavy rainfall across the Cheviots and upper Northumberland area led to a rise in the River Coquet and River Wansbeck and meant the new Flood Alleviation Scheme in Morpeth operated for the first time since its construction.

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# 1. Introduction

## 1.1 Aim of Report

This report aims to provide a concise and accurate summary of the property flooding impacts resulting from the Winter Flooding 2015-16. It is anticipated that this report will be used primarily by Environment Agency staff to inform technical studies, plan future flood risk management measures, and improve the Flood Warning Service.

Local Authorities are compiling separate reports on the impact of these flood events on their assets.

## 1.2 Data Collection and Review

A range of different sources have been used within this report, including:

- Duty Officer Logs
- Reports from Environment Agency Field Incident Support Officers (FISOs)
- Reports from Environment Agency Field teams
- Records from Local Authorities
- Media Reports
- Reports received from the public
- Flood event photographs (including aerial photographs supplied by Geomatics)
- Surveyed flood levels

All efforts have been made to ensure the information in this report is accurate. For some locations the number of properties flooded has been estimated from the information we have available to us.

## 2. Winter Flooding 2015-16

### 2.1 Cause of Flooding

The north of England was impacted by a series of severe winter storms throughout December 2015 and January 2016 (Table 1).

**Table 1: Weather events in December 2015 and January 2016**

Friday 4 <sup>th</sup> December 2015 – Saturday 5 <sup>th</sup> December	Storm Desmond
24 <sup>th</sup> December 2015	Storm Eva
29 <sup>th</sup> December – 30 <sup>th</sup> December	Storm Frank
5 <sup>th</sup> January – 6 <sup>th</sup> January	Unnamed Storm

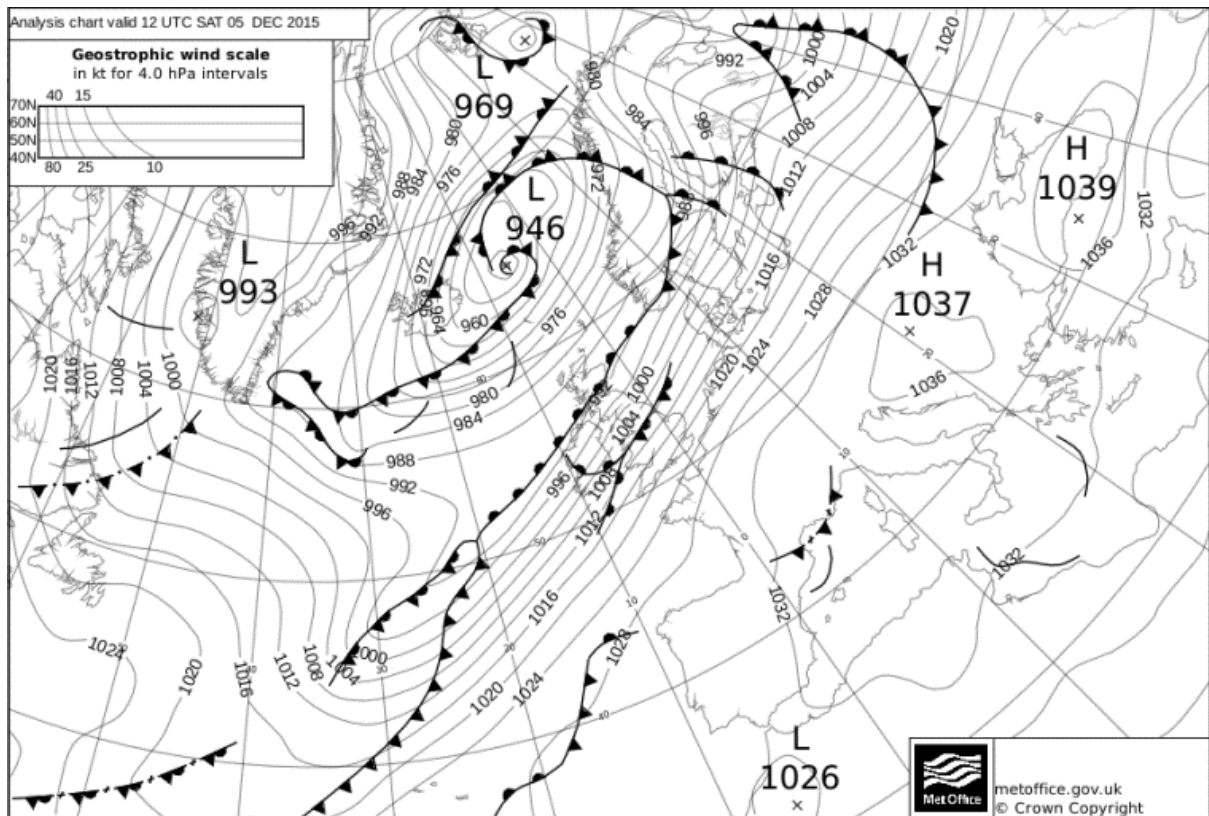
The most disruptive was Storm Desmond. On Friday 4<sup>th</sup> - Saturday 5<sup>th</sup> December 2015 Storm Desmond passed to the northwest of the UK bringing severe gales with damaging gusts of wind to the north of England. The mild, moist south-westerly airstream and the frontal systems associated with Storm Desmond, resulted in heavy and exceptionally persistent rainfall across northern Britain. Cumbria was the worst-hit county where 341.4mm fell at Honister Pass in the 24 hours up to 18:00 GMT on 5<sup>th</sup> December 2015 making a new UK record.

In Northumberland Durham and Tees Area (NDT) the heaviest rain fell over the high ground in the west, particularly west facing slopes of the Pennines. The gale force south-westerly winds drove the rainfall against the Pennines where orographic <sup>(1)</sup> enhancement produced a 'warm conveyor' of heavy rainfall which persisted for over 24 hours. Severe flooding resulted across northern Britain. In NDT Area the River Tyne catchment was worst impacted and resulted in many gauging stations achieving their highest recorded level (see Table 2). In response to the rainfall associated with Storm Desmond we issued 24 Flood Warnings in NDT Area, including 2 Severe Flood Warnings at Corbridge where the sheer volume of water overtopped our recently completed flood defences at The Stanners.

<sup>(1)</sup> Orographic rainfall is caused when moist air pushed by strong winds is forced up the side of hills and mountains. The lift of the air results in cooling, condensation and increased precipitation.

The following chart is taken from the Met Office website and shows the pressure analysis at 12:00 GMT on 5<sup>th</sup> December 2015.





**Table 2: Peak river levels in the River Tyne Catchment associated with Storm Desmond**

Catchment	Gauge	River Level (mStage)	Date	Rank (in record)	Record length
North Tyne	Ugly Dub	2.573	05/12/2015	1	31
North Tyne	Falstone	3.338	05/12/2015	1	10
North Tyne	Bellingham	3.83	05/12/2015	1	13
North Tyne	Reaverhill	5.072	06/12/2015	1	57
North Tyne	Chollerford	3.403	05/12/2015	1	18
South Tyne	Alston	2.472	05/12/2015	5	40
South Tyne	Featherstone	2.462	05/12/2015	3	51
South Tyne	Haltwhistle	3.27	05/12/2015	2	17
South Tyne	Haydon Bridge	4.646	05/12/2015	2	49

Catchment	Gauge	River Level (mStage)	Date	Rank (in record)	Record length
South Tyne	Warden Bridge End	5.71	05/12/2015	1	10
Tyne	Hexham	34.843 mAOD	05/12/2015	1	18
Tyne	Corbridge	5.759	05/12/2015	1	14
Tyne	Riding Mill	5.991	05/12/2015	1	33
Tyne	Bywell	6.959	06/12/2015	1	61

Storms Eva and Frank subsequently affected northern Britain on 24<sup>th</sup> December 2015 and 29<sup>th</sup> – 30<sup>th</sup> December 2015 respectively, bringing further periods of gales and heavy rainfall which exacerbated the flooding situation in the north of England as did other less intense low pressure systems.

On 5<sup>th</sup> – 6<sup>th</sup> January heavy rainfall across Northumberland brought further flooding with the River Wansbeck catchment most impacted. The event was the first instance where the newly constructed Morpeth FAS was operating.

## **2.2 Flood Forecasts**

The National Modelling and Forecasting Service will review the flood forecasts for these flood events in a separate report.

## 3. Impacts of Flooding

### 3.1 Northumberland

#### Summary of Properties Flooded

Table 3 details the number of properties flooded during the winter events across Northumberland. A small number of these properties flooded more than once (3 at Wellbank, Corbridge and 1 in Ovingham during Storms Desmond and Eva), but are only counted once in this table.

Table 3: Properties Flooded during December 2015 and January 2016

Location	Residential	Commercial	Total
Acomb	2	-	2
Bellingham	2	-	2
Berwick Upon Tweed	1	2	3
Bywell	6	-	6
Coastley Burnfoot	1	-	1
Chollerford	-	1	1
Corbridge	62	8	70
East Mill	1		1
Haltwhistle	2	-	2
Haydon Bridge	40	4	44
Hexham	14	73	87
Humshaugh	-	1	1
Kirkley Mills		1	1
Low Prudhoe	1	22	23
Middle Lipwood	3	-	3
Morpeth	1	1	2
Newbiggin		1	1

Norham	2	-	2
Ouseburn	2		2
Ovingham	12	15	27
Ponteland	5		5
Riding Mill	5	-	5
Rothbury	1		1
Sheepwash	1		1
Skinningrove	2		2
Stocksfield	3	-	3
Warden	5	9	14
Wardley	4		4
Weldon Mill	1		1
West Woodburn	-	3	3
Total	179	141	320

### 3.1.1 River Tweed

#### Flood Risks

There are 66 properties at risk from flooding from the River Tweed (on the South Bank). The main communities at risk are Carham, Wark and Norham.

#### Flood History

Number of Properties/Area Affected
<b>October 2002</b> – peak level recorded, flooding on the Lower River Tweed, at Boat House, Norham and Columns.
<b>January 2005</b> – peak level recorded, properties at Boat House, Norham flooded.

#### Flood Defences

There are no Environment Agency flood defences along the River Tweed.

#### Event Dates

These communities were impacted by the River Tweed during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Warning for River Tweed at Boat House, Norham (121FWF126) was issued at 17:28 on Saturday 5 December. Both properties in this Flood Warning Area experienced flooding on 5 December. The Boat House Cottage flooded to a depth of 0.3m, and the Boat House suffered damage due to flood waters lifting the floor and skirting boards. The Flood Warning was not issued on Sunday 27 December 2015, however residents at Boat House Cottage reported that the flood levels peaked just below the floor level. There were no other Flood Warnings issued on the River Tweed during the Winter Flooding, and no reports of any other properties flooding.

### 3.1.2 Kielder, Falstone, Bellingham and Chollerford

#### Flood Risks

There are approximately 259 properties at risk of flooding from the River North Tyne. The main communities at risk are Kielder, Falstone, Bellingham and Chollerford.

#### Flood History

Number of Properties/Area Affected
<b>8 January 2005</b> (3.31m @ Bellingham, 4.40m @ Reaverhill) – 1 property flooded at Chollerford.
<b>20 November 2009</b> (2.23m @ Falstone) – no property flooding recorded.
<b>16 January 2011</b> (2.91m @ Falstone) – Kielder spilling. No property flooded at Falstone and Chollerford.

#### Flood Defences

There are Environment Agency flood embankments at Falstone and Bellingham.

#### Event Dates

These communities were impacted by the River North Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Alert for the River North Tyne (121WAF908) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015.

There was no property flooding from the River North Tyne at Kielder village which appeared to have remained in bank.

The Flood Warning for River North Tyne at Falstone (121FWF204) was issued at 14:21 on Saturday 5<sup>th</sup> December. There were no reports of any property flooding at Falstone during this event. It was discovered however that flows from the North Tyne had come out of bank and flowed towards the Tennis Court and Play Park where it met existing standing surface water.

The Flood Warning for the River North Tyne at Bellingham (121FWF206) was issued at 17:13 on Saturday 5<sup>th</sup> December. The cellar of one property (Riverside on Boat Lane) was flooded from the River North Tyne. There were two other properties affected by surface water. There were also issues with ordinary watercourses and drains in the area. Two other properties at Boat Farm were close to being affected. Residents from the properties at Sunnydale suggested their property was 5cm away from flooding, its likely this was due to flows from the adjacent drainage ditch or surface water flows. Residents reported that the Hareshaw Burn was higher than usual but still approximately 30cm away from breaking its banks.

The Flood Warning for the River North Tyne at Chollerford (121FWF207) was issued at 11:19 on Saturday 5<sup>th</sup> December. The George Hotel in Chollerford suffered flooding to its leisure facility

from both surface water and the River North Tyne. The River North Tyne came close to flooding one property at Barrasford Mill (which was also affected by surface water and flooding from an ordinary watercourse). Wrack marks showed that the River North Tyne was within 10cm of entering the property. Flows also entered the garden of Haughton Mill but was 1m away from reaching the property. The Flood Warning for Chollerford was then issued again at 09:32 on Saturday 26<sup>th</sup> December; however there was no confirmed property flooding during this ev



### 3.1.3 Haltwhistle and Slaggyford

#### Flood Risks

There are approximately 30 properties at Haltwhistle and 19 properties at Slaggyford & Lambley at risk of flooding from the River South Tyne

#### Flood History

Number of Properties/Area Affected
<p><b>23 June 2012</b> (2.69m @ Alston GS, 3.08m @ Haltwhistle) – Floodwater beneath the caravans at Slaggyford Caravan Park which was evacuated. At Haltwhistle the Sewage Treatment Works near the Haltwhistle Burn was flooded. Caravan site did not flood. Defences were 50cm from overtopping at lowest point. .</p> <p><b>18 May 2013</b> (2.85m @ Alston GS, 3.27m @ Haltwhistle – Flooding occurred at Slaggyford Caravan Park.</p>

#### Flood Defences

The Environment Agency maintains a flood embankment and wall near to the Kilfrost factory at Haltwhistle.

#### Event Dates

This area was impacted by the River South Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Alert for the River South Tyne (121WAF909) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. The Flood Warning for River South Tyne at Haltwhistle (121FWF210) was issued at 06:14 on 5<sup>th</sup> December 2015.

Two properties were flooded at Haltwhistle - Bellister Haugh and The Lodge (near Bellister Castle). The owner of Bellister Haugh reported that floodwater entered the property at around lunchtime. A resident at The Lodge advised us that at approximately 06:00 the property had flooded but this was as a result of surface water flooding in the first instance. The River South Tyne burst its banks at Haltwhistle at about lunchtime but by this point there was already approximately 2ft of water inside The Lodge. The neighbouring property Castle Glen is thought to have operated its Property Level Protection products and as a result did not flood.

There were no reports of any flooding at Slaggyford Caravan Park despite wrack marks indicating the River South Tyne had come out of bank. At the village of Eals there was evidence of flooding to one property (Holly Cottage) from a small tributary that flows through the village. The River South Tyne had stayed in bank at this location but caused considerable erosion.

### 3.1.4 Haydon Bridge

#### Flood Risks

There are approximately 260 properties at risk of flooding from the River South Tyne at Haydon Bridge.

#### Flood History

Number of Properties/Area Affected
<p><b>8 January 2005</b> (4.67m @ Haydon Bridge GS) – 23 properties flooded at Haydon Bridge including at Lipwood Well, Middle Lipwood, Innerhaugh Mews, Brigwood, Douglas Gardens, Riverside Workshop, Rocksprings Crescent, Martins Close and the Football Club.</p>
<p><b>18 May 2013</b> (4.01m @ Haydon Bridge GS) – Flood water seeped around the end of the flood wall into Brigwood Lane and also seeped through some of the joints in the wall. 1 property flooded – flood water 9” deep in riverside workshop occupied by B J Young Timber Construction.</p>

#### Flood Defences

There are Environment Agency flood defences in this area. There is a flood wall on the left bank at Brigwood that was rebuilt in 2009 following the flooding in January 2005 and has a Standard of Protection (SoP) of 2% Annual Exceedence Probability (AEP). There is also a flood wall and embankment on the right bank that protects properties at Temple Houses and Martins Close which have a SoP of 1% AEP.

#### Event Dates

Haydon Bridge was impacted by the River South Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The level at Haydon Bridge gauging station peaked at 4.65m at 7pm on Saturday 5<sup>th</sup> December 2015. Whilst this is lower than the highest level on record (January 2005) at Haydon Bridge, a number of residents observed that water levels in the centre of the village were actually several inches higher in December 2015 than in the January 2005 event. At least 35 properties were known to have flooded from the River South Tyne at Haydon Bridge and Lipwood during the event. There are also 9 other properties which were affected by surface water flooding.

The Flood Alert for the River South Tyne (121WAF909) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. The Flood Warning for the River South Tyne at Brigwood and Middle Lipwood at Haydon Bridge (121FWF235) was issued on 5<sup>th</sup> December 2015 at 05.11 and that for the River South Tyne at Temple Houses, Haydon Bridge (121FWF236) was issued at 07.54. The Flood Warning for the River South Tyne at Haydon Bridge (121FWF236) was issued later on 5<sup>th</sup> December 2015 at 17.00.

It is understood that the A69 and 6 properties flooded at Middle Lipwood (including Lipwood Well, Middle Lipwood Cottage & Middle Lipwood Farm 5' deep) at approximately 15:00 on Saturday (5<sup>th</sup> December) afternoon, the river having come out of bank upstream of the railway bridge at about 07:00 and progressively filled up the adjacent field behind the railway embankment – before overtopping onto the A69 and into the properties beyond. No properties (only gardens) were flooded at Innerhaugh Mews, despite some seepage through the floodwall. It is confirmed that 2 residential properties flooded at Brigwood (The Haughs 500mm deep & The Marton) due to the overtopping of the floodwall. This occurred first with water flowing around the end of the floodwall near to The Haughs into the back lane (the floodbank perpendicular to the floodwall was fully submerged). Timings are not clear but the owner of The Marton reported that the floodwall was overtopped between 16:30 and 17:00 on Saturday afternoon. The resident of the The Haughs Bungalow reports that the floodwall overtopped at 16:00.

It is known that 16 residential properties (5 at Rocksprings Crescent & 10 at Martins Close) and 2 businesses (Riverside Workshop & Football Club) were flooded in this area from surface water in the first instance and then from the river. The floodwall on the right bank of the river, immediately downstream of the A686 road bridge, was overtopped and outflanked. The floodwater then inundated properties at Rocksprings Crescent and subsequently Martins Close (via rear gardens), pooling behind the defences in the car park at the bottom of the road. Timings are not clear but information from a local resident suggests the floodwall was overtopped near no 4 Rocksprings Crescent at about 15:00 on Saturday (5<sup>th</sup> December) afternoon. The floodbank at the Temple Houses Car Park was not overtopped. The Riverside Workshop (B J Young Timber Construction) flooded at some time before 05:00 on Saturday morning, before the Flood Warning for this area was issued. Following the flooding in November 2015 we were already aware that this property is not located within an appropriate Flood Warning Area.

There was generally less evidence of property flooding in this area. However approximately 8 properties were flooded on Ratcliffe Road (no's 1-8 including General Havelock Inn). The time of flooding is uncertain but it is understood that the river came out of bank first near no 1 Ratcliffe Road then flowed down the edge of Ratcliffe Road, flooding these properties from the front. The resident of 7 Ratcliffe Road reported that the water entered their house at about 09:50 on Saturday (5<sup>th</sup> December) morning (flooding first from the river and then from the road to the front). Meanwhile the owner of the General Havelock Inn reported that the flood water entered the pub from the road between about 17:30 and 18:30 on Saturday evening. On Shaftoe Street 4 properties were flooded (Tyne View and the basements of Scotch Arms, Scotch Corner & Shaftoe's B&B).

On Church Street 6 residential properties were affected by surface water flooding and pumped out by the fire brigade on Saturday evening. The house at Poplars Caravan Park (not currently in a Flood Warning Area) was flooded (1" deep) from the river at some time before 16:00 on Saturday afternoon. Information from the owner suggests that another 4" depth would have seen water entering the caravans on the site.



Overtopped flood defence protecting the Temple Houses area of Haydon Bridge in the aftermath of Storm Desmond



Haydon Bridge Football Club in the aftermath of Storm Desmond

### 3.1.5 Warden

#### Flood Risks

There are approximately 33 properties at risk of flooding from the River South Tyne at Warden.

#### Flood History

Number of Properties/Area Affected
<b>8 January 2005</b> (5.52m @ Warden Bridge End) – 23 properties flooded at Hardhaugh Warden due to breach of flood defence bank.
<b>23 June 2012</b> (4.20m @ Warden Bridge End) - Water at toe of defence. No properties affected.
<b>18 May 2013</b> (4.65m @ Warden Bridge End) – No properties affected.

#### Flood Defences

There are Environment Agency flood defences in this area. There are two flood walls on the left bank at Hardhaugh Warden and at Bridge End, connected by a flood bank. An additional flood bank extends downstream on the left bank. The defences offer a SoP up to the 1% AEP level.

#### Event Dates

Warden was impacted by the River South Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Alert for the River South Tyne (121WAF909) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. The Flood Warning for River South Tyne at Warden (121FWF211) was subsequently issued at 14:08 on Saturday 5<sup>th</sup> December 2015.

It is suspected around 8 residential properties and 9 businesses flooded on both the left and right banks of River South Tyne between around 15:00 and 16:00 on Saturday afternoon (5<sup>th</sup> December 2015). There are no confirmed properties that flooded due to surface water. A property on the right bank Upstream of Warden, Riverside Coastley Burnfoot was the first property to flood on 5<sup>th</sup> December. Flooding to this property occurred at approximately 11:30, more than 2 hours before the flood warning for the area was issued. Flooding also occurred at Ferrymans Cottage on the right bank at approximately 12:00.

The flood wall at Bridge End began to overtop at 15:30 on the 5<sup>th</sup> Dec and properties behind the wall (Riverside Cottage and Bridge End Cottage) flooded soon after this. The residents of these properties were evacuated from their properties at 12:30 and re-located at the Boatside Inn. Flood water flowed towards the Boatside Inn pub, then towards the railway bridge and down the track to flood three properties at Westboat Cottages. In addition, flood waters were contaminated with both red diesel and kerosene from the Balfour Beatty compound and properties at Bridge End.

In total the flooded properties include Bridgend Cottage and Riverside Cottage, the Joiner's Shop, Ferryman's Cottage, Riverside Cottage at Coastley Burnfoot (on right bank). Flooded businesses include the Boatside Inn (and 5 holiday lets), the Farm Shop, Natural Spa, the Balfour Beatty compound and three properties at Westboat Cottages. Residents at Hardhaugh Warden reported flooded gardens but it did not enter any properties.



Bridge End Cottages, Warden on 5<sup>th</sup> December 2015



Bridge End Cottages, Warden on 5<sup>th</sup> December 2015

### 3.1.6 Hexham

#### Flood Risks

There are approximately 129 properties at risk of flooding from the River Tyne in Hexham.

#### Flood History

Number of Properties/Area Affected
<b>31 January 2004</b> (33.61mAOD @ Hexham) – Peak level recorded. No properties affected.
<b>8 January 2005</b> (34.35mAOD @ Hexham) –10 properties flooded, including the fire station and council depot at the Tyne Mills Industrial Estate.

#### Flood Defences

There is a flood embankment on the left bank of the River Tyne which protects properties at Bridge End Industrial Estate (SoP 1% AEP). This ties in to high ground.

#### Event Dates

Hexham was impacted by the River South Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Alert for the River Tyne (121WAF910) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. The Flood Warning for River Tyne at Hexham (121FWF213) was issued at 09:59 on 5<sup>th</sup> December 2015.

Approximately 13 residential properties and 31 businesses were flooded on both the left and right banks of River Tyne at Hexham. Flooded properties include 16 businesses at the Bridge End Industrial Estate, 10 businesses and one residential property at the Tyne Mills Industrial Estate and 12 residential properties and 5 businesses at Tyne Green.

Properties at Tyne Green were flooded from the River Tyne which entered the area through an underpass beneath the railway. These properties are not currently covered by the River Tyne at Hexham (121FWF213) Flood Warning and are only warned against the risk of flooding from the Cockshaw Burn. Pumping operations were ongoing at 7-10 Tyne green during the event (it is thought the pump was provided by the Fire & Rescue Service) however the properties were eventually overwhelmed. The resident of East Lodge suggested his property flooded internally to a depth of 3 feet. Internal flood depths in Spital Cottages were reported to be approximately 4-5 inches. The exact time of flooding for these properties is unknown.

The Club House of the Tyne Green Golf Club was not affected however the Tyne Green caravan Park experienced flooding to the Reception Building and 43 caravans on site. The owners reported that approximately 70% of the sites land was covered by flood waters. The Tyne Green Industrial Estate also experienced internal flooding to depths of up to 150mm.



Properties at Bridge End Industrial Estate flooded after the flood bank was overtopped and water flowed down Ferry Road towards Egger UK. Flood depths to the industrial buildings varied between 2 inches and 2 feet across the Bridge End Industrial site. JS Hubbick and Reiver Sports both suffered internal flooding to a depth of 2 feet.



Flooding at Tyne Green, Hexham on 5<sup>th</sup> December 2015



Flooding at Tyne Mills Industrial Estate, Hexham on 5<sup>th</sup> December 2015



Flooding at Tyne Mills Industrial Estate, Hexham on 5<sup>th</sup> December 2015

### 3.1.7 Corbridge

#### Flood Risks

There are approximately 60 properties at risk of flooding from the River Tyne at Corbridge.

#### Flood History

Number of Properties/Area Affected
<p><b>8 January 2005</b> (5.25m @ Corbridge) – 4 properties flooded at Wellbank. 33 properties flooded on the right bank at The Stanners and Station Road due to the breach and overtopping of embankment upstream of public car park.</p>
<p><b>15 November 2015</b> (4.64m @ Corbridge) – No property flooding, but very close. Flood water reached the property thresholds of Cornwell House and Tynevale at Wellbank Riverside.</p>

#### Flood Defences

There are Environment Agency flood defences in this area. On the right bank of the River Tyne there is a flood embankment at Dilston Haughs which ties into high ground at Corbridge Bridge. Downstream of the bridge there is a floodwall (1.3% AEP) which protects The Stanners and Little Croft area and continues down to The Pavillion where it ties into an embankment. Works were carried out in 2015 to improve the quality of these raised defences.

#### Event Dates

Corbridge was mainly impacted by the River Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015. However there was also renewed flooding from the River Tyne at Wellbank in Corbridge during Storm Eva on 26<sup>th</sup> December 2015.

#### Event Details

The Flood Alert for the River Tyne (121WAF910) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. There are two Flood Warning Areas at Corbridge. The Flood Warning for River Tyne at Wellbank Riverside, Corbridge (121FWF221) was issued at 06:08 on 5<sup>th</sup> December 2015. At 07:11 on the 5<sup>th</sup> December 2015 the Flood Warning for River Tyne at Corbridge (121FWF237) was issued.

At 09:00 the FIDO appointed Site Controllers for Corbridge and it is reported that properties at Wellbank started to flood.

At 09:33 on 5<sup>th</sup> December 2015 a decision was made to upgrade both Flood Warnings at Corbridge to Severe Flood Warnings. This was because the flood defences at Corbridge were expected to be significantly overtopped based on the river level forecasts at the time. Not long after the Severe Flood Warnings were issued the Police started to ask residents to evacuate their properties.

At approximately 15:00 on 5<sup>th</sup> December 2015 the flood wall at The Stanners, Corbridge started to overtop. By 17:45 there were reports that 4 properties at Wellbank Riverside had flooded but still no reports of flooding near to the flood wall in The Stanners area. All but 14 properties had been evacuated. It is difficult to know what time the properties in The Stanners area flooded as many residents had already been evacuated. However one resident did say that at 21:00 on the 5<sup>th</sup> December 2015 the water dramatically rose from knee height to waist height. It is also understood that water which had overtopped upstream floodbanks flowed down towards properties at Eales and began to pond behind the downstream embankment before the floodwall overtopped. Water on the dry side of the embankment could not discharge through the evacuation pipe and outfall due to high levels in the River Tyne.

It is understood that a total of 68 properties (64 residential, 4 business) flooded in the Well Bank and Stanners areas of Corbridge.

The Flood Warning for River Tyne at Wellbank Riverside, Corbridge (121FWF221) was issued again at 12:16 on 26<sup>th</sup> December 2015. It is reported that 3 properties at Wellbank Riverside flooded from the River Tyne during this event.



Wellbank Riverside, Corbridge on 5<sup>th</sup> December 2015



Flood wall overtopping at The Stanners, Corbridge on 5<sup>th</sup> December 2015



Dyvels PH behind The Stanners, Corbridge on 5<sup>th</sup> December 2015



Station Road, Corbridge on 5<sup>th</sup> December 2015

### 3.1.8 Riding Mill

#### Flood Risks

There are 16 properties within National Flood Zone 2 at Riding Mill. The main risk is not from the River Tyne itself, rather its effect on the Riding Mill or March Burn which is a tributary of the Tyne and runs through the village.

#### Flood History

Number of Properties/Area Affected
<b>January 2005</b> – peak level recorded
<b>January 1995</b> – peak level recorded
<b>August 1986</b> – peak level recorded

#### Flood Defences

There are no Environment Agency flood defences at Riding Mill.

#### Event Details

There is no Flood Warning available for properties in Riding Mill from the River Tyne. 5 properties in this area flooded due to the Tyne backing up the Riding Mill or March Burn which flows through the village. These include Dere Hollow, Dove Shield, 1 Mill View, 2 Mill View and Mill House. Other properties along the Burn, including 3 and 4 Burnside reported that water entered their gardens but did not flood the properties.

The NWL Pumping Station was flooded out during the Storm Desmond event which led to sewerage flooding at the adjacent properties Dere Hollow and Dove Shield. Sewerage also discharged from the pumping station in January 2016 however the discharge did not reach the properties on this occasion.

### 3.1.9 Bywell, Ovingham and Low Prudhoe

#### Flood Risks

There are approximately 130 properties at risk of flooding from the River Tyne at Bywell, Ovingham and Low Prudhoe.

#### Flood History

Number of Properties/Area Affected
<p><b>31 January 1995</b> (5.78m @ Bywell GS) - No property flooding at Bywell (front garden of Bywell Hall &amp; garden of Bywell House flooded). Also no flooding at Low Prudhoe Industrial Estate. Ovingham Old School flooded.</p>
<p><b>8 January 2005</b> (6.33m @ Bywell GS) – No properties flooded at Bywell (flow contained by flood bank constructed in 2002) or Low Prudhoe Industrial Estate. 3 properties flooded at Tyne Riverside Country Park including the Visitor Centre, Tyne House &amp; Gladstone Packaging. Properties flooded at Ovingham including Ovingham Old School (Scout Hut) and the annex at Bridge End Inn. East and West Cottages also flooded.</p>
<p><b>6 September 2008</b> (5.64m @ Bywell GS) – Ovingham Old School (Scout Hut) and Bleach Green Farm Cottage flooded.</p>
<p><b>15 November 2015</b> (5.50m @ Bywell GS) – No property flooding at Bywell (and not close) with the exception of a riverside fishing hut. Flood water just reached the door threshold of Ovingham Old School. No flooding at Tyne Riverside Country Park (Visitor Centre) or East &amp; West Cottages.</p>

#### Flood Defences

There are no Environment Agency flood defences in this area. The village of Bywell is protected by a privately owned flood bank which was constructed in 2002.

#### Event Dates

These communities were mainly impacted by the River Tyne during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015. There was also flooding at Ovingham during Storm Eva on 26<sup>th</sup> December 2015 from the Whittle Burn.

#### Event Details

The level at Bywell gauging station peaked at 6.96m at 00.15am on Sunday 6<sup>th</sup> December 2015. In total there are at least 47 properties that are known to have flooded from the River Tyne at Bywell, Ovingham and Low Prudhoe during the event.

The Flood Alert for the River Tyne (121WAF910) was issued in advance of the event at 16:30 on 4<sup>th</sup> December 2015. The Flood Warnings for the River Tyne at Bywell and Prudhoe (121FWF306)



and the River Tyne at Ovingham and Low Prudhoe (121FWF305) were subsequently issued on 5<sup>th</sup> December 2015 at 07:39 and 07:44 respectively.

At Bywell the floodbank was overtopped and 6 properties were flooded, including Bywell Hall (cellar), Bywell Lodge and nos 1-4 Bywell House. The time of flooding is unknown. The flood bank had been breached in 2 locations to allow the floodwater to drain back into the river. A 1955 flood mark on Bywell House has been surveyed in at 18.92 mAOD. At the same location the wrack mark left by the December 2015 flood has been surveyed in at 19.23 mAOD (i.e. 0.31m higher than in 1955).

In the village of Ovingham 16 properties were flooded including nos 1-8 Burnside Close, Bleach Green Farm, Bleach Green Farm Cottage, Bridge End Inn (B&B + pub), Dene House, Greenhaugh and Ovingham Old School. It is understood that the flooding at this location was due to the River Tyne flowing back up the Whittle Burn tributary and overtopping its banks. At the time scaffolding had been erected on Ovingham Bridge by Northumberland County Council as part of consented maintenance works. Mitigation measures were put in place as part of the consent to reduce the impact of the scaffolding up to the flood level that has a 1% chance of occurring in any given year however residents believe this blockage increased the severity of flooding in Ovingham during this event. Investigations are currently taking place to determine the impact of the bridge scaffolding had during the event. Exact timings in this area are unknown but no 1 Burnside Close reportedly had 1 inch of water in the house at 19:00 on Saturday (5<sup>th</sup> December) evening. Levels at Burnside Close reportedly peaked between 03:00 and 04:00 on Sunday morning. At Bridge End Inn the water had reached skirting board level by 21:00 on Saturday (6<sup>th</sup> December) evening. On the right bank of the River Tyne at Ovingham 1 residential property (Tyne House) and 4 business premises (visitor centre at Tyne Riverside Country Park, Gladstone Packaging, Grant Westfield Ltd & Northumberland County Council's depot) were flooded, many to a significant depth, on Saturday afternoon and evening. Floodwater is reported to have entered the visitor centre at Tyne Riverside Country Park at about 14:30 on Saturday afternoon and reached a depth of 1.7m. A similar depth was seen at Tyne House. The floodwater flowed across the road and entered the depot containing Gladstone Packaging between 18:30 – 18:45 on Saturday evening and reached a depth of 2.1m inside the building. The floodwater also overtopped the railway line and flooded the station car park.

Both East and West Cottages downstream of Ovingham (left bank) were flooded to a significant depth (>1m inside properties) during the flood. It was not possible to ascertain the time that flooding started at these 2 residential properties. At least 18 business premises were flooded at Low Prudhoe Industrial Estate including SCA Prudhoe Mill (eastern end of site) and also those at Regents Drive, Earls Court, Dukes Way and Marquis Court. The time of flooding is unknown but based on information gathered during the post event data collection is likely to have been during the early hours of Sunday (6<sup>th</sup> December) morning. Information from our PPC Regulatory Officer indicates that flooding of the industrial estate was caused by a faulty flap valve on the exit of the Park Burn culvert beneath the Newcastle-Carlisle railway line. This allowed the River Tyne to back up via the Park Burn into the industrial estate.

At the Ferry Landing Holiday Park (not currently within a Flood Warning Area) a total of 6 chalets and 1 static caravan were destroyed. Some chalets were completely washed away (residents at Ovingham report seeing one trapped on the bridge there) whilst others were ripped from their foundations and carried down the site. The park closes over the winter and therefore there were no residents on site at the time of the flood. The time of flooding is unknown.



Flood damage at Gladstone Packaging, Ovingham following Storm Desmond (notice the flood level on the rear window of the tractor).



Flood damage at Ferry Landing Holiday Park, Ovingham following Storm Desmond



Flood damaged scaffolding at Ovingham Bridge following Storm Desmond



Gladstone Packaging and NCC depot, Ovingham on 5<sup>th</sup> December 2015

### 3.1.10 Morpeth

#### Flood Risks

There are approximately 1332 properties at risk of flooding from the River Wansbeck in this area.

#### Flood History

Number of Properties/Area Affected
<b>April 2005</b> – Level recorded. Flooding of riverside footpath by Leisure Centre. No properties flooded.
<b>September 2008</b> - Peak river level. 1000 properties flooded.
<b>September 2012</b> – Peak river level recorded. Approx 45 properties flooded.
All prior to the construction of the Morpeth FAS.

#### Flood Defences

In 2015 the Morpeth Flood Alleviation Scheme was completed and provides Morpeth with a SoP of 0.7% AEP. This comprises of newly built/improved in-town flood defences, including new walls and bunds at Mitford Road and High Stanners. It also includes an online flood storage area on the River Wansbeck upstream of the town at Mitford. The dam it is able to limit the peak flow that is able to pass downstream to Mopeth and store excess water in the storage area which discharged at a controlled rate through 5 sluice gates.

#### Event Dates

Morpeth was impacted by the River Wansbeck during the flood event on 5<sup>th</sup> – 6<sup>th</sup> January 2016.

#### Event Details

The Flood Alert for the River Wansbeck (121WAF905) was issued in advance of the event at 20:20 on 3<sup>rd</sup> January 2016.

The Flood Warning for River Wansbeck at East Mill and Morepeth Leisure Centre (121FWF115) was issued at 20:51 on 5<sup>th</sup> January 2016. One property flooded in the East Mill area (No 1 East Mill). The property sits over a Mill Race which was the source of the internal flooding to the property. The garage building at East Mill flooded due to the River Wansbeck breaking its banks, the flows surrounded the East Mill residential properties but did not enter the houses as the finished floor levels are raised. The Morpeth Leisure Centre suffered flooding from local drains but not the River Wansbeck itself. The adjacent Chinese Catering Trailer did flood from the River Wansbeck.

The Flood Warning for River Wansbeck at Abbey Mills (121FWF125) was also issued at 20:51 on the 5<sup>th</sup> January 2016. One property flooded at Abbey Mills (Olde Abbey Mill), the basement of this property flooded from the Mill Stream running under the property.

This was the first time that the Morpeth Flood Alleviation Scheme operated since its construction in 2015. It has been calculated that the storage area used approximately 8% of its total capacity during the event.

### 3.1.11 River Coquet Catchment

#### Flood Risks

There are approximately 333 properties at risk of flooding from the River Coquet. The main communities at risk are Thropton, Rothbury, Brinkburn, Weldon, Felton and Warkworth.

#### Flood History

Number of Properties/Area Affected
<b>31 January 1995</b> (2.07m @ Rothbury GS) – no recorded property flooding in Rothbury.
<b>6 September 2008</b> (4.00m @ Rothbury GS) – major flood on River Coquet with flooding at Thropton (2 properties), Rothbury (50 properties), Felton (7 properties) and Warkworth (20 properties).
<b>26 April 2012</b> (2.18m @ Rothbury GS) – no recorded property flooding in Rothbury. Flooding of Riverside Road.

#### Flood Defences

There are Environment Agency flood defences located at Rothbury which offer a SoP between the 2% and 1% AEP level. The defences consist of a combination of flood walls, a flood bank and a flood gate.

In Warkworth there is a new flood defence scheme which was constructed in 2015. The defences consist of flood walls and flood gates.

#### Event Dates

These communities were impacted by the River Coquet during Storm Eva on 26<sup>th</sup> December 2015 and then again during the flood event on 5<sup>th</sup> – 6<sup>th</sup> January 2016.

#### Event Details

The Flood Alerts for the Upper and Lower River Coquet (121WAF903 and 121WAF904) were issued in advance of the events at approximately 11:00 on 24<sup>th</sup> December 2015 and 20:25 on 3<sup>rd</sup> January 2016.

The Flood Warning for River Coquet at Brinkburn and Weldon (121FWF110) was subsequently issued at 13:50 on Saturday 26<sup>th</sup> December 2015.

There were no confirmed properties that flooded during this event.

This Flood Warning was issued again at 17:48 during the event on Tuesday 5<sup>th</sup> January 2016. It is suspected that 1 property flooded at Brinkburn Mill during the early hours of Wednesday morning, and flood waters entered the derelict basement of a second property in the same area. Wrack marks also suggested there may have been flooding to the Weldon Mill property however there were no residents present to confirm the impacts at this property.

The Flood Warning for the River Coquet at Felton Riverside (121FWF128) was also issued at 11:37 on Tuesday 5<sup>th</sup> January 2016. One property was confirmed as being flooded at Felton Mill.

The Flood Warning for the River Coquet at Lower Stanners at Warkworth (121FWB111) was issued on 6<sup>th</sup> January 2016. The River Coquet did exit the channel at 2 locations however there was no flooding of property.



Floodwater behind our floodgate at Rothbury during Storm Eva on 26<sup>th</sup> December 2015



### 3.2 Wear Catchment

#### Summary of Properties Flooded

Location	Residential	Commercial	Total
Page Bank Riverside	2	-	2
Total	2	-	2

### 3.2.1 Croxdale Riverside

#### Flood Risks

There are approximately 2 properties at risk of flooding from the River Wear at Croxdale.

#### Flood History

Number of Properties/Area Affected
<b>18 July 2009</b> (2.09m @ Burn Hall GS) – Honest Lawyer Hotel flooded from the River Browney at 04:00. Residents evacuated.
<b>25 September 2012</b> (1.92m @ Burn Hall GS) – 40 bedrooms in courtyard accommodation at Honest Lawyer Hotel flooded.
<b>18 May 2013</b> (1.89m @ Burn Hall GS, 3.05m @ Sunderland Bridge GS) – Courtyard accommodation at Honest Lawyer hotel flooded from the River Browney. Onset of flooding approximately 15:30. Hotel has PLP.

#### Flood Defences

There are Environment Agency flood defences in this area: there is a Flood Bank on the left bank of the River Wear behind the Honest Lawyer Hotel. There is also a Flood Bank on the right bank of the River Browney towards the side of the Honest Lawyer Hotel. The defences offer a SoP of up to the 4% AEP level.

#### Event Dates

Croxdale Riverside was impacted by the River Wear during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015, Storm Eva on 26<sup>th</sup> December 2015 and then again during the flood event on 5<sup>th</sup> January 2016.

#### Event Details

The Flood Warning for River Wear at Croxdale Riverside (121FWF315) was issued at 15:46 on 5<sup>th</sup> December 2015 during Storm Desmond, at 15:31 on 26<sup>th</sup> December 2015 in response to Storm Eva and then again at 14:11 on 5<sup>th</sup> January 2016.

No property flooding is reported to have occurred during any of these events. The Honest Lawyer Pub does have Property Level Protection products which were operated during each event.

### 3.2.2 Durham Riverside

#### Flood Risks

There are approximately 40 properties at risk of flooding from the River Wear in this area.

#### Flood History

Number of Properties/Area Affected
<p><b>31 January 1995</b> (3.49m @ Durham New Elvet) – The museum at the Old Fulling Mill, Maiden Castle Sports Centre and Boathouses were all flooded.</p>
<p><b>18 July 2009</b> (3.82m @ Durham New Elvet) – Resulted in overtopping of defences at Shincliffe and flooding of 3 commercial properties. In Durham 3 residential and 13 commercial properties were flooded, including the cricket pavilion, the boathouse, Shanghai Restaurant and National Savings Office.</p>
<p><b>25 September 2012</b> (3.38m @ Durham New Elvet) – Flooding of the Passport Office at Framwellgate Waterside only and riverside footpaths.</p>
<p><b>18 May 2013</b> (3.25m @ Durham New Elvet) – Water on riverside footpath at Durham and some garages but no property flooding.</p>

#### Flood Defences

There are no Environment Agency flood defences in this area.

#### Event Dates

Durham Riverside was impacted by the River Wear during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015 and then again during Storm Eva on 26<sup>th</sup> December 2015.

#### Event Details

The Flood Warning for River Wear at Durham Riverside (121FWF330) was issued at 18:46 on 5<sup>th</sup> December 2015 during Storm Desmond and then again at 17:25 on 26<sup>th</sup> December 2015 during Storm Eva.

It is reported that the Old Fulling Mill and several boat houses along the river possibly flooded. The basement of the Boat Club Pub flooded but the owner explained this was because their pump couldn't cope. The River Wear came out of its bank near the Raddison Blu Hotel and the Passport Office. The owner of the Inshanghai Restaurant said his property was 12 inches from being flooded.

No property flooding is reported to have occurred during the event on 26<sup>th</sup> December 2015.



Photograph showing the River Wear out of bank outside the Passport Office during the evening of the 5<sup>th</sup> December 2015.

### 3.2.3 Frosterley

#### Flood Risks

There are approximately 22 properties at risk of flooding from the River Wear at Frosterley.

#### Flood History

Number of Properties/Area Affected
<b>31 January 1995</b> (3.54m @ Stanhope GS) – flooding impacts unknown. Broadwood Lodge at Frosterley was flooded to a depth of approximately 0.40m.
<b>8 January 2005</b> (3.71m @ Stanhope GS) – flooding impacts unconfirmed, although Broadwood Lodge at Frosterley is suspected to have flooded.
<b>18 May 2013</b> (3.24m @ Stanhope GS) – no property flooding at Frosterley

#### Flood Defences

There are no Environment Agency flood defences in this area.

#### Event Dates

Frosterley was impacted by the River Wear during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Warning for River Wear at Frosterley (121FWF218) was issued at 13:22 on 5<sup>th</sup> December 2015 during Storm Desmond. No property flooding is reported to have occurred although there may have been surface water issues around the Broadwood Lodge property.

### 3.2.4 Stanhope

#### Flood Risks

There are approximately 144 properties at risk of flooding from the River Wear at Stanhope.

#### Flood History

Number of Properties/Area Affected
<b>31 January 1995</b> (3.54m @ Stanhope GS) – flooding impacts unknown at Rothbury.
<b>8 January 2005</b> (3.71m @ Stanhope GS) – flooding of 3 properties at Stanhope.
<b>18 May 2013</b> (3.24m @ Stanhope GS) – flooding of 3 properties at Unthank Mill in Stanhope.

#### Flood Defences

There are Environment Agency flood defences in this area: there is a flood wall on the left bank at The Butts House, which is connected to a flood bank. The defences offer a SoP up to the 1.3% AEP level. Improvements were made to the defences in 2015 in order to strengthen the floodwalls and raise any low spots across the embankment.

#### Event Dates

Stanhope was impacted by the River Wear during Storm Desmond on 5<sup>th</sup> – 6<sup>th</sup> December 2015.

#### Event Details

The Flood Warning for River Wear at Lower Stanhope (121FWF223) was issued at 04:25 on 5th December 2015. The Flood Warning for River Wear at Stanhope (121FWF217) was issued at 15:15 on 5<sup>th</sup> December 2015.

It is reported that 2 properties flooded from surface water in Stanhope. Whilst no properties flooded from the River Wear it is reported that water came through the flood wall at The Butts. The River Wear came half way up the flood bank at The Butts.

A footbridge at Stanhope was also washed away during the event.

### 3.3 Cleveland area

#### Summary of Properties Flooded

Location	Residential	Commercial	Total
-	-	-	0
Total	-	-	0

### 3.3.1 Tees Catchment

#### Hurworth Place, Low Dinsdale, Croft and Yarm.

#### Flood Risks

There are approximately 209 properties at risk from flooding from the River Tees in these areas.

#### Flood History

Number of Properties/Area Affected
<b>November 2009</b> – Highest Peak Level
<b>September 2012</b> – Peak level recorded. Up to 1cm below top of flood defences but Hurworth Road was flooded. 2 caravan sites were flooded and ponding around Croft Farm flood gates.

#### Flood Defences

There are Environment Agency flood defences in this area:

Hurworth Place is protected by a series of embankments which offer and SoP up to the 1.3% AEP level.

At Croft-on-Tees there are flood walls, 2 flood gates and an embankment which offer a SoP of up to the 1.3% AEP level.

There are no defences at Low Dinsdale.

Yarm is protected by a series of flood gates and flood walls which offer a SoP of up to the 2% AEP level.

#### Event Dates

These locations were impacted during the Storm Desmond event on 5<sup>th</sup> and 6<sup>th</sup> December and during the Storm Eva event on 26<sup>th</sup> December 2015 (Hurworth Place and Yarm only)

#### Event Details

The Flood Warning for River Tees at Hurworth Place and Newbus Grange (121FWF020) was issued at 09:09 on 5 December. No properties were reported as flooded.

The Flood Warning for River Tees at Low Dinsdale (121FWF025) was issued at 10:36 on the 5<sup>th</sup> December. No properties were reported as flooded.

The Flood Warning for River Tees at Croft was issued at 14:37 on the 5<sup>th</sup> December. No properties were reported as flooded however the Environment Agency flood gates were closed for the duration of the event.

On the 5<sup>th</sup> December the Yarm Flood Gates were closed and they were opened on the 7<sup>th</sup> December. There was no reported flooding of property in Yarm however there were significant surface water accumulations on the dry side of the defences. All flood gates at Yarm were also closed again on 26<sup>th</sup> December.





Surface Water Accumulations on dry side of flood wall - Yarm



River Tees at Yarm

### 3.3.2 Lustrum Beck

#### Flood Risks

There are approximately 617 properties at risk from flooding from the Lustrum Beck in the Stockton-on-Tees area.

#### Flood History

Number of Properties/Area Affected
<b>June 2000</b> – Peak level recorded. Prior to construction of defences maintained by EA.
<b>November 2000</b> – Peak level recorded. Flooding at Hartburn Avenue. Prior to construction of defences maintained by EA.
<b>September 2012</b> – Highest peak level recorded. 77 reports of property flooding from combination of overtopping from the beck and surface water.

#### Flood Defences

There are Environment Agency flood defences in this area: there is a flood wall on the right bank near Browns Bridge which is connected to a flood bank. There is also a flood bank situated on the left bank of the river. There is also a trash screen at Primrose Hill. Works are currently ongoing to improve the standard of protection to provided by the defences on the Lustrum beck. These works include building new raised defences and replacing the existing trash screen with a new screen that can be lifted during high flows.

#### Event Dates

The are was impacted during the Storm Eva Event on the 26<sup>th</sup> December.

#### Event Details

The Flood Warning for Lustrum Beck at Stockton On Tees (121FWF077) was issued at 21:41 on 25<sup>th</sup> December. The Flood Warning for Lustrum Beck at Newton and Oxbridge, Stockton On Tees (121FWF088) was issued at 21:41 on the 25<sup>th</sup> December. There were no reports of properties flooding as the current Result Threshold for the Flood Warning was not met although earlier forecastshad suggested reiver levels would exceed the thresholds.

On the 25<sup>th</sup> December Stockton Town Council erected a temporary flood defence in the Brown's Bridge area but the Site Controller on scene from the Environment Agency said these defences remained dry for the duration of the event. The temporary defence remained in place for a number of weeks as a precaution while weather condition remained unsettled.

## 4. Recommendations

Following the Winter Flooding of 2015/16 a number of learning actions were identified. The recommended improvements to be considered fall into 8 key categories.

- Understanding risk

Ensure our understanding of risk is updated by incorporating relevant data from all the events.

- Flood Warning service

Review the Flood Warning Areas and thresholds based upon the observed impacts, in conjunction with the Flood Warning Validation Database.

- Assets

Return our existing assets back to their previous condition ensuring that this is in line with the national maintenance efficiency protocol.

- Communities

Work with our partners to support our communities to overcome the challenges of a major flood.

- Partnership

Understand our current role but provide a co-ordinated front from our partners.

- Incident Preparedness

Be better prepared to respond to future incidents by ensuring any lessons learnt from these events are incorporated into our response procedures and our duty officers are fully briefed.

- Recovery Preparedness

Be better prepared for future recovery by ensuring we follow our recovery plan and appropriate staff are in recovery roles.

- Catchment Wide Solutions

Understand opportunities to enhance resilience of affected communities on a catchment wide scale, if it is possible to do so.

These actions will be taken forward by Flood Resilience, the Area Incident Management Group and the Area Incident Preparedness and Recovery Group.

For further information please contact:

Flood Resilience Team Leader  
Environment Agency  
Tyneside House  
Skinnerburn Road  
Newcastle Business Park  
Newcastle upon Tyne  
NE4 7AR

## Appendix A – Summary of Properties Flooded by Local Authority

### A.1 Northumberland

Location	Business	Residential	Addresses	Source	Total
Acomb	-	2	Willow Cottage / Bridge End Farm	Surface	2
Bellingham	-	2	Haining Cottage / Riverside	Surface & Fluvial	2
Bywell	-	6	Bywell Hall/ Bywell Lodge / 1-4 Bywell House	Fluvial	6
Coastley Burnfoot	-	1	Coastley Burnfoot Farm	Fluvial	1
Chollerford	1	-	The George Hotel	Fluvial	1
Corbridge	8	62	1 – 6 St Andrews Terrace / Corwell House / Orchard caravans / Tynedale Park RFC / Sports ground / Cemetry / 1- 31 Station Road / The Dyvels Pub / The Stanners / Valley Restaurant / Tynevale & Welwyn Houses	Fluvial	70
Haltwhistle	-	2	Bellister Haughs, The Lodge	Fluvial	2
Haydon Bridge	4	40	1a – 4 Rocksprings Crescent / Broadstone Cottage / 1 – 8 Ratcliffe Road / 9 – 18 Martins Close / Church Street / The Haughs & Marton Brigwood / Lipwood Cottage, Farm, Well / 1-2 Derwent Cottages / Belmont Lodge / Tyne View	Surface & Fluvial	44
Hexham	14	73	7,8,9,10,11,12 Tyne Green / Tyne Green Caravan Pk/ 11 on Tyne Green Rd / White Cottage / Hubbucks / 1 Nursery Cottages / Tyne Mill		87

Location	Business	Residential	Addresses	Source	Total
			Cottage / Tyne Mill Industrial Est – AV Taylor, Carrs Billington, Down to earth, Kwikfit, Motor Bodies, Multichem, NCC Depot, Fire station, PK Nutrition, West End Garage / Riverside Caravan Pk / Rowing Club / Rickerby Tractor / Scott Mitchell Vets / Bridge End Ind Est – Amitex, Centurion, CEF, City Plumbing, Dart's Motor Services, Easyhire, Fixings, Hanover Dairies, Metano, Northumbria ltd, Roxburgh, Royal Mail, Centre for Green Energy, TMS, Tyne Valley Car Sales	Fluvial	
Humshaugh	1	-	Waterside Mill West	Surface	1
Low Prudhoe	22	1	Plunckett Tiling / BTG / DE Pharmaceuticals / Jewsons / Gladstone Packing / GMS / Grant Westfield / NCC Depot / Norsel Fire / Specials Laboratory / Riverside Visitor Centre / Units 5a,b,c, 6a,b,c, 7a,b,c,d / Signal box, Public toilets	Fluvial	23
Norham	-	1	The Boat House	Fluvial	1
Middle Lipwood	-	3	Ging gang / Middle Lipwood barn / South Cottage	Fluvial	3
Ovingham	15	12	East & West Cottages / 1-8 Burnside Close / Bleach Green farm & Cottage / Bridge End Pub and B&B / Dene House / Greenhaugh	Fluvial (Main + Ordinary Watercourse)	27

Location	Business	Residential	Addresses	Source	Total
			/ Old school House / The Hall / Ferry Landing Caravan Park		
Riding Mill	-	5	1&2 Mill View / Dere Hollow / Dove Shield / Mill House	Surface	5
Stocksfield	-	1	Riverside Cottage, Mickley	Surface	1
Warden	9	5	Riverside Cottage / Joiners shop / Ferrymans Cottage / Brisbane / Bridgend Cottage / Natural spa / Farm Shop / Balfour Beatty / Boatside Inn	Fluvial	14
West Woodburn	3	-	The Croft / Bridge End / Old Coach House	Surface	3
<b>Total</b>	<b>77</b>	<b>216</b>	<b>-</b>	<b>-</b>	<b>293</b>

## A.2 Durham

Location	Business	Residential	Addresses	Source	Total
Page Bank	-	2	Park Hill Lodge, Stanners Farm	Fluvial (Main + Ordinary Watercourse)	2
<b>Total</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>2</b>

## Appendix B – Summary of Flood Alerts Issued by Event

### B.1 Storm Desmond 4<sup>th</sup> – 5<sup>th</sup> December 2015

TA Code	TA Name	TA Description	Date / Time Issued
121WAF901	River Tweed South Bank	The River Tweed, South Bank from Carham to Union Bridge	04/12/2015 09:14:51
121WAF925	Lower River Tees and Estuarine Tributaries	Low lying land in the Lower Tees valley, from Middleton St George to the Tees Barrage, including Lustrum Beck, Greatham Beck and the Riverside footpaths at Yarm	04/12/2015 16:30:28
121WAF904	Lower River Coquet	Lower River Coquet and its tributaries from Brinkburn to Warkworth	04/12/2015 16:30:29
121WAF924	Upper River Tees	Low lying land in the Tees Valley, including Teesdale Way footpath at Croft	04/12/2015 16:30:29
121WAF905	River Wansbeck	The Rivers Wansbeck, Font, Hart Burn and their tributaries	04/12/2015 16:30:29
121WAF909	River South Tyne	River South Tyne and its tributaries from source to the confluence with the River Tyne	04/12/2015 16:30:29
121WAF912	Rivers Derwent, Team, Don and estuarine tributaries	Rivers Derwent, Team, Don, their tributaries and south bank tributaries of the Tyne Estuary.	04/12/2015 16:30:29
121WAF923	River Skerne	The Carr Areas including Mainsforth, Bradbury and Morden.	04/12/2015 16:30:29
121WAF907	River Rede	River Rede and its tributaries from Catcleugh Reservoir to the Redesmouth	04/12/2015 16:30:29
121WAF908	River North Tyne	River North Tyne and its tributaries from source to the confluence with the River Tyne	04/12/2015 16:30:29
121WAF915	Lower River Wear	Lower River Wear from Escomb to Chester-le-street including the Rivers Browney, Cong Burn and Lumley Park Burn	04/12/2015 16:30:29
121WAF917	River Gaunless	The River Gaunless and its tributaries	04/12/2015 16:30:29
121WAF910	River Tyne	The River Tyne from Hexham to Wylam and its tributaries	04/12/2015 16:30:29
121WAF914	Upper River Wear	Upper River Wear from source to Witton Park	04/12/2015 16:30:29
121WAF903	Upper River Coquet	Upper River Coquet, River Alwin and their tributaries from source to Pauperhaugh	04/12/2015 16:30:29
121WAF925	Lower River Tees and Estuarine Tributaries	Low lying land in the Lower Tees valley, from Middleton St George to the Tees Barrage, including Lustrum Beck, Greatham Beck and the Riverside footpaths at Yarm	05/12/2015 06:05:21

B.2 Storm Eva 24<sup>th</sup> – 26<sup>th</sup> December 2015

TA Code	TA Name	TA Description	Date / Time Issued
121WAF907	River Rede	River Rede and its tributaries from Catcleugh Reservoir to the Redesmouth	24/12/2015 10:48:13
121WAF908	River North Tyne	River North Tyne and its tributaries from source to the confluence with the River Tyne	24/12/2015 10:50:15
121WAF909	River South Tyne	River South Tyne and its tributaries from source to the confluence with the River Tyne	24/12/2015 10:52:04
121WAF924	Upper River Tees	Low lying land in the Tees Valley, including Teesdale Way footpath at Croft	24/12/2015 10:53:43
121WAF914	Upper River Wear	Upper River Wear from source to Witton Park	24/12/2015 10:55:31
121WAF910	River Tyne	The River Tyne from Hexham to Wylam and its tributaries	24/12/2015 10:59:34
121WAF904	Lower River Coquet	Lower River Coquet and its tributaries from Brinkburn to Warkworth	24/12/2015 11:01:48
121WAF915	Lower River Wear	Lower River Wear from Escomb to Chester-le-street including the Rivers Browney, Cong Burn and Lumley Park Burn	24/12/2015 11:03:10
121WAF903	Upper River Coquet	Upper River Coquet, River Alwin and their tributaries from source to Pauperhaugh	24/12/2015 11:05:37
121WAF925	Lower River Tees and Estuarine Tributaries	Low lying land in the Lower Tees valley, from Middleton St George to the Tees Barrage, including Lustrum Beck, Greatham Beck and the Riverside footpaths at Yarm	24/12/2015 11:07:57
121WAF925	Lower River Tees and Estuarine Tributaries	Low lying land in the Lower Tees valley, from Middleton St George to the Tees Barrage, including Lustrum Beck, Greatham Beck and the Riverside footpaths at Yarm	25/12/2015 11:05:59
121WAF923	River Skerne	The Carr Areas including Mainsforth, Bradbury and Morden.	25/12/2015 11:06:00
121WAF901	River Tweed South Bank	The River Tweed, South Bank from Carham to Union Bridge	25/12/2015 11:06:00
121WAF917	River Gaunless	The River Gaunless and its' tributaries	25/12/2015 11:06:00
121WAF929	Coastal Streams in Redcar and Cleveland	Coastal Streams in Cleveland and Redcar including the Skelton Beck and Skinningrove Beck	25/12/2015 22:01:06
121WAF918	Coastal Rivers in North Northumberland	Coastal rivers in Berwick and Alnwick Districts including the River Aln and Waren Burn	26/12/2015 06:41:26
121WAF927	River Leven	Low lying land on the banks of the River Leven including Great Ayton and Stokesley.	26/12/2015 09:06:19
121WAF912	Rivers Derwent, Team, Don and estuarine tributaries	Rivers Derwent, Team, Don, their tributaries and south bank tributaries of the Tyne Estuary.	26/12/2015 09:40:33
121WAF900	River Till and tributaries	The Rivers Till, Glen, Breamish, Wooler Water and their tributaries	26/12/2015 15:16:37



TA Code	TA Name	TA Description	Date / Time Issued
121WAF905	River Wansbeck	The Rivers Wansbeck, Font, Hart Burn and their tributaries	26/12/2015 17:39:17

### B.3 Storm 5<sup>th</sup> – 6<sup>th</sup> January 2016

TA Code	TA Name	TA Description	Date / Time Issued
121WAF901	River Tweed South Bank	The River Tweed, South Bank from Carham to Union Bridge	03/01/2016 20:10:48
121WAF918	Coastal Rivers in North Northumberland	Coastal rivers in Berwick and Alnwick Districts including the River Aln and Waren Burn	03/01/2016 20:12:31
121WAF915	Lower River Wear	Lower River Wear from Escomb to Chester-le-street including the Rivers Browney, Cong Burn and Lumley Park Burn	03/01/2016 20:14:27
121WAF924	Upper River Tees	Low lying land in the Tees Valley, including Teesdale Way footpath at Croft	03/01/2016 20:16:09
121WAF925	Lower River Tees and Estuarine Tributaries	Low lying land in the Lower Tees valley, from Middleton St George to the Tees Barrage, including Lustrum Beck, Greatham Beck and the Riverside footpaths at Yarm	03/01/2016 20:18:50
121WAF905	River Wansbeck	The Rivers Wansbeck, Font, Hart Burn and their tributaries	03/01/2016 20:20:34
121WAF917	River Gaunless	The River Gaunless and its tributaries	03/01/2016 20:23:21
121WAF903	Upper River Coquet	Upper River Coquet, River Alwin and their tributaries from source to Pauperhaugh	03/01/2016 20:25:42
121WAF904	Lower River Coquet	Lower River Coquet and its tributaries from Brinkburn to Warkworth	03/01/2016 20:27:25
121WAF912	Rivers Derwent, Team, Don and estuarine tributaries	Rivers Derwent, Team, Don, their tributaries and south bank tributaries of the Tyne Estuary.	03/01/2016 20:29:10
121WAF911	Ouseburn and estuarine tributaries	Ouseburn, its tributaries and north bank tributaries of the Tyne Estuary.	04/01/2016 20:13:21
121WAF907	River Rede	River Rede and its tributaries from Catcleugh Reservoir to the Redesmouth	04/01/2016 20:13:21
121WAT916	Wear Estuary	The Wear Estuary from Lamb Bridge at Chester-le-street to the North Sea Coast	04/01/2016 20:13:21
121WAF929	Coastal Streams in Redcar and Cleveland	Coastal Streams in Cleveland and Redcar including the Skelton Beck and Skinningrove Beck	05/01/2016 06:34:43
121WAF900	River Till and tributaries	The Rivers Till, Glen, Breamish, Wooler Water and their tributaries	05/01/2016 06:34:43
121WAF906	Rivers Pont and Blyth	The Rivers Pont and Blyth and their tributaries	05/01/2016 09:53:47
121WAF910	River Tyne	The River Tyne from Hexham to Wylam and its tributaries	05/01/2016 11:08:39
121WAF908	River North Tyne	River North Tyne and its tributaries from source to the confluence with the River Tyne	05/01/2016 15:26:54

## Appendix C – Summary of Flood Warnings Issued by Event

### C.1 Storm Desmond 4<sup>th</sup> – 5<sup>th</sup> December 2015

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF223	River Wear at Lower Stanhope	Properties and low lying areas around Horn Hall, Weardale Community Hospital, Rose Terrace, Newtown House, Waterside Court and Unthank Mill.	05/12/2015 04:24:00	32	30	21	0
121FWF235	River South Tyne at Brigwood & Middle Lipwood at Haydon Bridge	Properties and low lying areas around Brigwood, Innerhaugh, Innerhaugh Mews, Radcliffe Road and Middle Lipwood	05/12/2015 05:11:38	61	60	61	9
121FWF208	River South Tyne at Slaggyford and Lambley	Properties and low lying areas around Slaggyford, including Lake House and Knarburn Cottage. Also around Lambley, including Eals Village and Waughold Holme	05/12/2015 05:22:42	19	19	14	0
121FWF221	River Tyne at Wellbank Riverside, Corbridge	Properties and low lying areas around Wellbank and St. Andrews Terrace	05/12/2015 06:05:21 Upgraded to Severe 05/12/2015 09:33:41	5	5	8	6
121FWF210	River South Tyne at Haltwhistle	Properties around Castle Glen, Station Court, Seldom Seen, Hadrian Varnish Works, Albion Works and Bellister Lodge	05/12/2015 06:12:11	28	30	13	2
121FWF237	River Tyne at Corbridge	Properties and low lying areas around Station Road, Little Croft and The Stanners, Cemetery Lodge, Corbridge Mill	05/12/2015 07:10:55 Upgraded to	55	55	59	64

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
		and The Willows	Severe 05/12/2015 09:33:41				
121FWF305	River Tyne at Ovingham and Low Prudhoe	Properties at Low Prudhoe Industrial Estate, Princess Way, East Cottage, West Cottage, Bleach Green Farm, Castle Lea and The Old School House	05/12/2015 07:43:20	101	102	39	22
121FWF306	River Tyne at Bywell and Prudhoe	Properties and low lying areas around, Bleach Green Farm, The Old School House, Tyne House, Main Road, Bywell Hall, Bywell Castle, Bywell Castle Cottage and The Old Station House.	05/12/2015 07:43:20	34	32	24	25
121FWF236	River South Tyne at Temple Houses, Haydon Bridge	Properties and low lying areas around Martins Close, Rocksprings Crescent, John Martin Street, Temple Houses and Haydon Bridge Sewage Works.	05/12/2015 07:54:50	35	35	39	18
121FWF020	River Tees at Hurworth Place and Newbus Grange	Properties at Linden Court, Baxby Terrace, Linden Drive, Hurworth Road and Tees View (A167), at Hurworth Place. Also the Caravan Park at Newbus Grange.	05/12/2015 09:03:32	78	78	52	0
121FWF213	River Tyne at Hexham	Properties around, Tyne Green, Ferry Road, Tyne Mills, Bridge End, Anick Road, The Hermitage, and Kingshaw Green.	05/12/2015 09:59:56	111	129	54	30
121FWF025	River Tees at Low Dinsdale	Properties at, Spa Wells and Old Fishlocks at Low Dinsdale.	05/12/2015 10:34:37	2	2	2	0

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF207	River North Tyne at Chollerford	Properties affected include Old Mill, Ferry Cottage, Mill Cottage, Haughton Mill House, Haughton House, The Beeching and Waterside Farm	05/12/2015 11:19:43	28	29	20	1
121FWF218	River Wear at Frosterley	Properties in low lying areas around Broadwood Lodge, Broadwood Plant, The Batts and The Old Vicarage on Church Lane	05/12/2015 13:20:14	22	22	14	0
121FWF211	River South Tyne at Warden	Properties at, South Tyne Mill, West Boat, Hard Haugh, the Toll House, Bridge End Cottages, Westboat Cottages, Yew Tree Cottage, Joiners Shop, The Old Smithy, Coastley Burnfoot Farm and Boatside Inn	05/12/2015 14:08:04	32	33	36	14
121FWF204	River North Tyne at Falstone	Properties at Stannershaugh Farm, Falstone Farm and those properties situated around The Croft.	05/12/2015 14:21:27	15	15	10	0
121FWF055	River Tees at Croft	Properties in Croft-on-Tees, including Monk End Farm and Spa Cottage	05/12/2015 14:36:23	127	129	109	0
121FWF217	River Wear at Stanhope	Properties around Wear Lodge, The Butts, Crescent, Park View, Wear Terrace, Sycamore House, Stanhope Caravan Park, Bondisle Way and Riverwood Lodges.	05/12/2015 15:15:47	113	111	73	0
121FWF202	River Rede at Otterburn, West Woodburn and Redesmouth	Properties around Otterburn Bridge, Mill House and Brownchesters, in Otterburn. As well as White Acre, The Close, Bridge End, Brae Well Close and Redeside in West Woodburn and Redesmouth Mill in Redesmouth.	05/12/2015 15:24:04	32	31	28	0
121FWF315	River Wear at Croxdale Riverside	Properties and low lying areas around the Old Bridge House and the Honest Lawyer Hotel.	05/12/2015 15:45:12	2	2	4	0

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF200	River South Tyne at Haydon Bridge	Properties at Victoria Terrace, Ratcliffe Road, Brigwood, Land Ends Road, Shaftoe Street and John Martin Street.	05/12/2015 17:00:44	136	105	96	11
121FWF206	River North Tyne at Bellingham	Properties around West View, Hawthorn Terrace, Brookside Place and Boat Road	05/12/2015 17:13:31	34	33	29	1
121FWF126	River Tweed at Boat House, Norham	Properties and low lying land around the Boat House and the Boat House Cottage	05/12/2015 17:28:42	2	2	1	0
121FWF330	River Wear at Durham Riverside	Properties along Durham Riverside including Houghall, Elvet Bridge, High Street and the access road below The Gates Shopping Centre.	05/12/2015 18:45:34	79	75	44	0
<b>Total</b>				<b>1183</b>	<b>1164</b>	<b>850</b>	<b>203</b>

### C.2 Storm Eva 24<sup>th</sup> – 26<sup>th</sup> December 2015

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF077	Lustrum Beck at Stockton-on-Tees	Properties at Hartburn Avenue, Gray's Road, St. Paul's Court, St. Paul's Terrace, Newtown Avenue, Mellor Street, Durham Road, and streets leading from Wrensfild Road, and the North Shore Academy.	25/12/2015 21:41:11	467	466	232	0
121FWF088	Lustrum Beck at Newtown and Oxbridge, Stockton-on-Tees	Properties adjacent to the Beck including, Hartburn Avenue, Burnside Grove, Oxbridge Lane, Wrensfild Road, Primrose Hill Industrial Estate, Bedford Street and Bishopton Road	25/12/2015 21:41:11	146	150	115	0

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF207	River North Tyne at Chollerford	Properties affected include Old Mill, Ferry Cottage, Mill Cottage, Haughton Mill House, Haughton House, The Beeching and Waterside Farm	26/12/2015 09:32:49	28	29	20	0
121FWF221	River Tyne at Wellbank Riverside, Corbridge	Properties and low lying areas around Wellbank and St. Andrews Terrace	26/12/2015 12:14:51	5	5	8	3
121FWF306	River Tyne at Bywell and Prudhoe	Properties and low lying areas around, Bleach Green Farm, The Old School House, Tyne House, Main Road, Bywell Hall, Bywell Castle, Bywell Castle Cottage and The Old Station House.	26/12/2015 13:34:46	34	32	24	0
121FWF110	River Coquet at Brinkburn and Weldon	Properties including, Brinkburn Priory, Weldon Bridge and Weldon Mill	26/12/2015 13:50:38	6	4	3	0
121FWF315	River Wear at Croxdale Riverside	Properties and low lying areas around the Old Bridge House and the Honest Lawyer Hotel.	26/12/2015 15:29:11	2	2	4	0
121FWF330	River Wear at Durham Riverside	Properties along Durham Riverside including Houghall, Elvet Bridge, High Street and the access road below The Gates Shopping Centre.	26/12/2015 17:24:25	79	75	44	0
121FWF020	River Tees at Hurworth Place and Newbus Grange	Properties at Linden Court, Baxby Terrace, Linden Drive, Hurworth Road and Tees View (A167), at Hurworth Place. Also the Caravan Park at Newbus Grange.	27/12/2015 00:21:52	78	78	52	0
<b>Total</b>				<b>845</b>	<b>841</b>	<b>502</b>	<b>3</b>

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF113	River Wansbeck at Bothal and Sheepwash	Properties at Bothal Village, Sheepwash Bank and Sheepwash Gardens	05/01/2016 03:38:53	71	70	44	0
121FWF315	River Wear at Croxdale Riverside	Properties and low lying areas around the Old Bridge House and the Honest Lawyer Hotel.	05/01/2016 14:11:49	2	2	4	0
121FWF110	River Coquet at Brinkburn and Weldon	Properties including, Brinkburn Priory, Weldon Bridge and Weldon Mill	05/01/2016 17:48:39	6	4	3	1
121FWF113	River Wansbeck at Bothal and Sheepwash	Properties at Bothal Village, Sheepwash Bank and Sheepwash Gardens	05/01/2016 17:55:51	71	70	44	1
121FWF128	River Coquet at Felton Riverside	Felton Mill and Station Cottages	05/01/2016 20:37:15	5	5	3	0
121FWF115	River Wansbeck at East Mill and Morpeth Riverside Leisure Centre	Properties and low lying areas at East Mill, Wansbeck Street and the Riverside Leisure Centre at Morpeth	05/01/2016 20:51:18	14	15	14	1
121FWF125	River Wansbeck at Abbey Mills	Properties and low lying areas at Abbey Mills	05/01/2016 20:51:18	9	9	5	0
121FWF119	River Font at Netherwitton and Longshaws Mill	Properties and low lying areas around, Cromwell Close, Netherwitton and Longshaws Mill.	05/01/2016 21:45:23	14	14	7	0

TA Code	TA Name	TA Description	Date / Time issued	Number of properties	Number of properties at risk	Number of properties sent a warning	Number of properties flooded
121FWF114	River Pont at Kirkley Mill, Darras Hall and Preswick Carr	Properties at Kirkley Mill, on the riverside at Darras Hall and West Road, Prestwick Mill Farm and agricultural land around Prestwick Carr.	05/01/2016 23:32:03	40	19	36	0
Total				232	208	160	3