



Multi Agency Flood Plan

Site Specific Plan for: Lancaster District

Public Version

Box 1	Generic
Box 2	Risk Specific
Box 3	Site Specific

Version 4.3
Issued 25/11/2021
Live 25/11/2021

OFFICIAL

This completely revised flooding plan for Lancaster now covers every ward and parish in the district, rather than just Environment Agency Flood Warning Areas as previously.

The flooding plan is a living document and will be regularly updated. Any errors or omissions should be notified to resilience@lancaster.gov.uk

Mark Bartlett

Civil Contingencies Officer

November 2021

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Plan Administration

Ownership and Access

This Emergency Plan is prepared, maintained and published by Lancaster City Council on behalf of the Lancashire Resilience Forum.

Lancashire Resilience Forum will ensure that:

- a) Live plan is held on Resilience Direct.
- b) It is updated and reviewed when necessary.
- c) It will be tested and exercised when necessary.

Further information and advice on any aspect of this plan can be obtained from: -
Lancashire Resilience Forum Flooding Sub-Group through the LRF Secretariat:

Plan Review

The plan will be reviewed and updated, as a minimum, on a three yearly basis. However, consideration should be given to reviewing the plan following an activation, exercise, or changes in legislation and national guidance. The plan owner will ensure the document is reviewed as stated

Version Control

Version	Date Issued	Reason for Publication
4.0	04/11/2021	Completely revised, using LRF template, replacing Version 3.3
4.3	25/11/2021	Updated FWA information inc property numbers, trigger levels etc

Amendment History

Version Number	Date	Section/page Number	Amendment Notes	Officer Initials
4.1	10/11/2021	Pages 6 to 10	Single RD link replaces individual document links	MRJB
4.2	12/11/2021	Page 44	New Flood Warning Area for Wennington included	MRJB
4.3	25/11/2021	Zone appendices	New EA FWA info on property numbers, trigger levels etc.	MRJB

Record of Exercises

Date	Event	Type	Description
12/11/19	Flooding training for partners and communities	Tabletop	Scenario developed across all FWAs testing that areas of risk and actions were included in plan.
20/10/21	Flooding training for partners and communities	Tabletop	Scenario developed across all FWAs testing that known areas of risk and appropriate actions are included in revised Box 3 plan.

Recent major flooding incidents (other incidents recorded in respective Zone appendices)

Date	Incident Type	Plan Activated	Area	Incident Overview
05/12/15	Storm Desmond flooding	Y	Widespread across district	City Centre and other communities flooded from River Lune and surface water incidents
23/11/17	Flooding – River Conder, Whitley Beck, Burrow Beck and surface water incidents	Y	Galgate, Halton and Hala	Extensive flooding of Galgate properties. Also flooding on Hala estate from Burrow Beck and in Halton.
05/08/20	Flooding – Burrow Beck	Y	Hala Estate	Evacuation of flooded Hala properties due to blockage in beck.

Risk identification

Risk ID	Risk	CRR Rating
HL16	Local coastal tidal flooding (more than one region)	Very High
HL17	Local coastal tidal flooding (one region)	Very High
HL18	Local urban flooding (fluvial or surface water run off)	Very High
HL19	Local fluvial flooding	High
HL20	Localised flash flooding	Medium

How to use this document

Purpose

The purpose of a Multi-Agency Flood Plan Part 2 is to facilitate a coordinated multi-agency response to a flood incident in Lancashire.

Lancashire Resilience Forum (LRF) delivers the above through a suite of documents that form a three-box model. Please scroll down for the MAFP Part 2 and use the tabs along the right-hand side to access the supplements. The model comprises of:

Box 1 – Generic	
The Civil Contingencies Act and its supporting Regs provide a framework defining what civil protection tasks should be performed and how cooperation should be achieved by all parties involved in planning for and responding to emergencies. Standard information applicable to all plans and could be used during any type of emergency, including:	
Lancashire Emergency Response Plan	Link for Response agencies only
The aim of the LRF Lancashire Emergency Response Plan is to set out the response arrangements of agencies who are Category 1 and 2 Responders. The plan sets out: <ul style="list-style-type: none"> ▪ The command, control and co-ordination arrangements for emergencies and other circumstances that require multi-agency response and/or recovery. ▪ Support an effective, integrated multi-agency approach to optimise the collective effort applied to the emergency. ▪ Outline the multi-agency processes within operational, tactical and strategic co-ordinating groups. ▪ Outline communication and reporting processes between operational, tactical and strategic levels. 	
Lancashire Recovery Plans	Response agencies only
The plan sits alongside the LRF Generic Emergency Response Plan and will be activated when the emergency moves to the recovery phase and used to support the recovery process.	
LRF Multi-Agency Emergency Contact List	Response agencies only
This contains all Local Authority, Emergency services and voluntary organisations contact details, also industry specific contacts and any other organisation required during an emergency and should be read in conjunction with the site specific plan or generic plan. All organisations are responsible for ensuring that any amendments to entries in this plan should be done via the LRF Secretariat.	
Roles and Responsibilities	Response agencies only
This document details the roles and responsibilities of responding organisations, including:- <ul style="list-style-type: none"> ▪ Category 1 responders under the Civil Contingencies Act (emergency services, local authorities, Environment Agency, British Transport Police, 	

- Coastguard, Met Office, NHS, and Public Health England).
- Category 2 responders (utility providers, Health (incl. STAC) & Safety Executive, Highways England, Network Rail)
- Central Government – APHA, CEFAS, FSA, Defra, DCLG etc and the military
- Other responders such as Canal and River Trust, voluntary organisations (i.e. British Red Cross, faith responders, Salvation Army etc)

Warning and Informing

Response agencies only

The purpose of this guidance is to provide a multi-agency framework in which agencies can effectively work together with the media and others, with the aim of providing accurate and timely information to the public about an emergency. It is designed for press and public relations practitioners to the general principles of providing a coordinated communications response but should be considered by other responders. The document gives an overview of media activity and coordination, roles and responsibilities and information on Warning and Informing Cell, Forward Media Briefing Point and Media Briefing Centres.

Airwave Inter-operability

Response agencies only

The Guidance document provides a Standard Operating Procedure for the use of Airwave which has been signed up to by Lancashire Constabulary, Lancashire Fire & Rescue and North West Ambulance Service. This document aims to allow commanders to access and share the information they need to make crucial decisions, primarily aimed at tactical level.

Humanitarian Assistance

Response agencies only

Contains the **Emergency Centre Guidance** that provides details on the level of rest centres, prompt cards, roles and responsibilities and a list of the pre-identified rest centres at each level for each district.

There are 3 levels of Rest Centres which have been pre-identified:- Level 1 Small halls for up to approximately 100 people; Level 2 Larger premises for up to approximately 500 people; Level 3 Football stadia for incidents involving 1000+ people

The **Faith Guidance** details ways in which members of Faith Communities can be activated to provide an initial response to an emergency. The document also details the roles and responsibilities of organisations, advice and guidance and prompt cards.

Mass Casualties

Response agencies only

This plan provides operational concepts unique to a mass casualty response, assigns responsibilities to county and regional agencies and coordinates response efforts in order to meet the Lancashire needs following a mass casualty-producing emergency.

Mass Evacuation Strategy

Response agencies only

This strategy covers an emergency in the range of 5,000 and 50,000 evacuees. The expectation is that an evacuation significantly below that level would be adequately addressed through existing plans. The document covers an evacuation from a source within Lancashire to a destination outside, also from a source outside Lancashire to a destination within Lancashire and finally the source and destination both within Lancashire. The strategy provides usual considerations for responders.

Mass Fatalities	Response agencies only
This Plan outlines the procedures following a Mass Fatality emergency, including the response at site, the decision to open a Response Mortuary, post-mortem facilities, family viewing facilities, and care for the bereaved in the immediate aftermath of the emergency, during the identification procedures, and in the longer term. Where the detail is available in other agencies' plans and/or other LRF plans, these are signposted.	
Media Response	Response agencies only
The purpose of this guidance is to provide a multi-agency framework in which agencies can effectively work together with the media and others, with the aim of providing accurate and timely information to the public about the emergency in question. It is designed for press and public relations practitioners to the general principles of providing a coordinated communications response but should be considered by other responders. The document gives an overview of media activity and coordination, roles and responsibilities and information on Warning and Informing Cell, Forward Media Briefing Point and Media Briefing Centres.	
Multi-Agency Strategic Holding Areas	Response agencies only
The document sets out the arrangements for the activation and use of a MASHA, for Lancashire this is named as Truckhaven Carnforth (M6 J35) and is shared with Cumbria. The document details the location, contact details, facilities and limitations of the site.	
Resilient Telecomms	Response agencies only
This plan details the resilient communications arrangements for responders, some or all of which may be required during an emergency. This document provides best practice, analyses, identifies and acts as a toolbox of information and options. It details activities reliant on communications (i.e. command levels, warning and informing the public, liaison with partners etc) and also provides a list of communications available to each responder.	
Voluntary Agencies Search & Rescue	Response agencies only
This covers emergencies involving Independent Voluntary Search and Rescue Organisations (IVSARO) and partner agencies as specified in the agreement. These will include searches for high risk missing persons, mud rescue, maritime incidents, animal rescue, flooding and severe weather related emergencies, and any other emergencies deemed appropriate by IVSARO and the co-ordinating authority, the Police or Maritime & Coastguard Agency (MCA).	
Box 2 Multi Agency Flood Plan Part 1 Generic	Link for Response agencies only
The Multi Agency Flood Plan Part 1 is the risk specific document. This plan details any information or arrangements relevant to flood incidents across Lancashire. This includes but is not limited to: <ul style="list-style-type: none"> • Activation of the plan and notification • Flood Specific Roles and Responsibilities • Communication arrangements during flood events 	

- County wide procedures and principles relating to flood incidents and flood warning

Box 3 Site Specific[Link for Response agencies only](#)

All the information and arrangements relevant to flood incidents within each Lancashire district and comprises of:

- Information relating to each flood risk area
- Maps of flood risk areas
- Flood Warning Area details for applicable fluvial and tidal areas
- Surface water hotspots
- Rapid response catchment information
- Flood risk asset details where relevant

Links to other Plans and Guidance

National Documents	<ul style="list-style-type: none"> ▪ National Flood Emergency Framework for England (2014) https://www.gov.uk/government/publications/the-national-flood-emergency-framework-for-england ▪ National Recovery Guidance https://www.gov.uk/guidance/national-recovery-guidance ▪ Public advice for before, during & after flooding https://www.gov.uk/government/collections/flooding-health-guidance-and-advice ▪ Flood Warning registration https://www.gov.uk/sign-up-for-flood-warnings ▪ Flood Rescue National Asset Register https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844303/frco-november-2019a.pdf
Lancashire Resilience Forum	<ul style="list-style-type: none"> ▪ Preparing for Emergencies in Lancashire https://www.stayintheknow.co.uk/Documents/PreparingForEmergenciesBooklet.pdf
Local Plans	Lancaster District Emergency Plan: Link for response agencies only
Community Plans	Community Emergency Plans are referred to in the respective Zone appendices with RD links.

Glossary

An up to date glossary can be found at the following location:

[Lexicon of UK civil protection terminology - version 2.1.1](#)

Introduction

This plan sets out the arrangements and actions to be taken by LRF partners should a flood event occur in Lancaster district.

The Civil Contingencies Act (2004) requires Category 1 Responders to have plans in place that enable it to respond to emergencies. The Lancashire Resilience Forum has identified flooding as a key risk and has developed plans to deal with the consequences.

The intention is for this tactical plan to be activated in conjunction with the Lancashire Multi Agency Flood Plan Part 1 which outlines the strategic response.

Aim and Objectives

Aims

- To identify and detail the multi-agency preparedness and response arrangements to a flooding event within Lancaster district.

Objectives

- To complement and support other emergency response plans and documentation.
- To support the principles of JESIP (Joint Emergency Services Interoperability Principles) in order to enable an effective multi-agency response.
- Outline the LRF response to flooding from rivers, the sea and surface water.
- Identify the local critical infrastructure assets and highlight risk.
- To liaise and engage with local communities and vulnerable people.

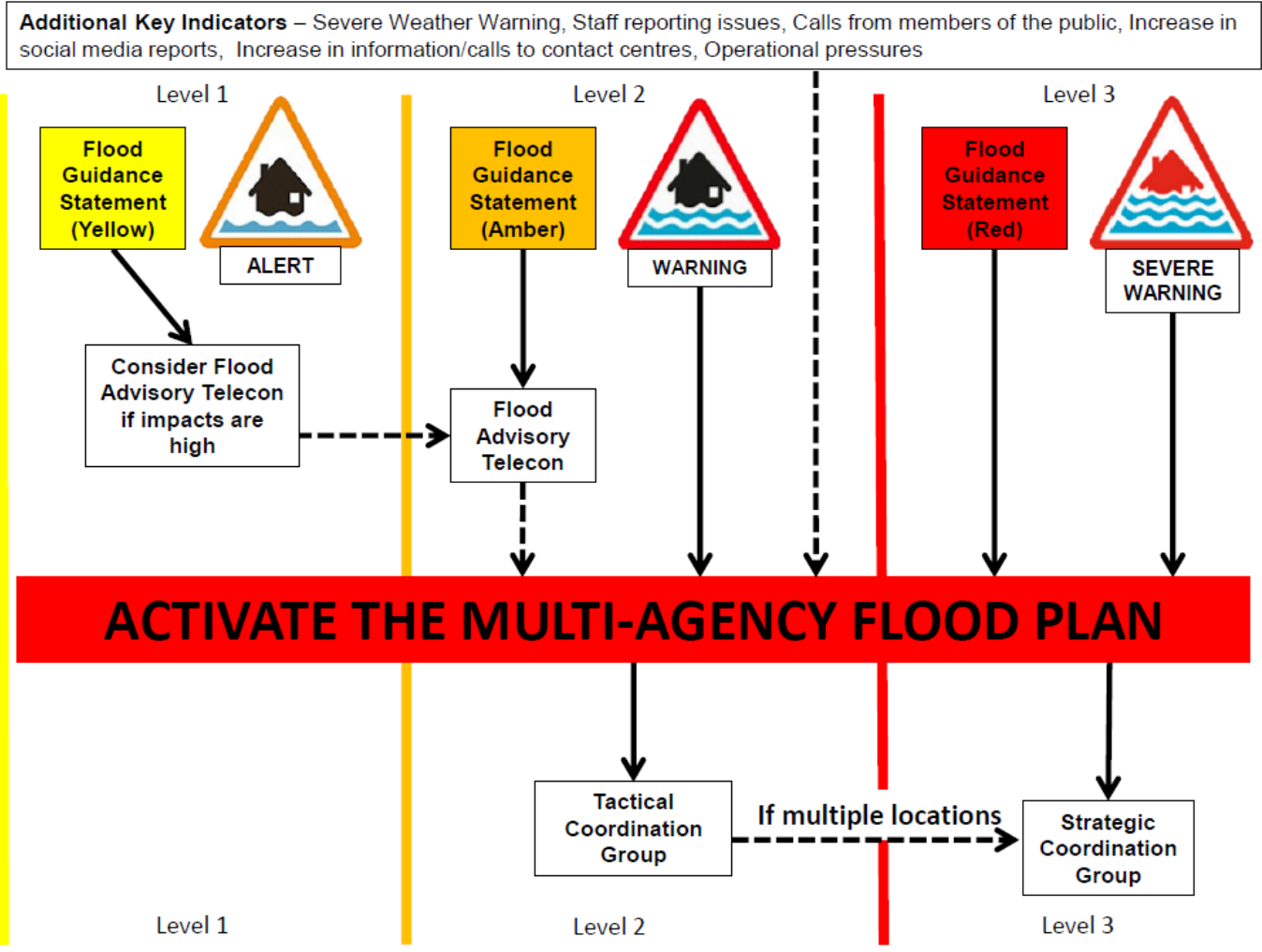
Strategic Objectives:

To mitigate the effects of flooding in order to:

- Save life
- Minimise damage to property
- Protect the environment
- Provide information for warning and informing
- Provide an effective response alongside other responders

Plan Activation

Activation Decision Flowchart



MAFP Activation Triggers

LEVEL 1: MODERATE FLOOD RISK		
Triggers <ul style="list-style-type: none"> Yellow Flood Guidance Statement (FGS) Flood Alerts for river catchments or stretches of coastline Yellow Severe Weather Warning Forecasts of high tides, tidal surges or strong winds Forecast or recorded heavy rainfall with the potential to cause flooding Forecast or recorded water levels with the potential to cause flooding Snow melt forecast which could cause flooding 	Impacts: Minor disruption <ul style="list-style-type: none"> Fast flowing and/or bank full rivers Overland flow from watercourses Localised flooding of low lying land and roads Local disruption to travel 	Actions <ul style="list-style-type: none"> CONTINUE TO MONITOR Flood Advisory Service call may be arranged by the EA if the FGS is amber, or yellow for significant or severe impacts.
LEVEL 2: SUBSTANTIAL FLOOD RISK		
Triggers <ul style="list-style-type: none"> Amber Flood Guidance Statement Flood Warnings issued by Environment Agency Amber Severe Weather Warning Heavy rain (or snow melt) that could cause flash flooding Observed rising water levels Site observations (e.g. blockages or defence failures) Reports of flooding to property 	Impacts: Significant disruption <ul style="list-style-type: none"> Flooding to property Damage to structures/buildings possible 	Actions <ul style="list-style-type: none"> ACTIVATE THE MAFP Pre-flooding: EA arrange Flood Advisory Service telecon. for cat 1 & 2 responders Flooding occurring: Police arrange and chair LRF teleconference TCG to be established SCG to be established if multiple locations/districts are experiencing flooding.
LEVEL 3: SEVERE FLOOD RISK		
Triggers <p>As for level 2 plus:</p> <ul style="list-style-type: none"> Red Flood Guidance Statement Severe Flood Warning issued by EA Red Severe Weather Warning Reports of severe flooding Major problems with infrastructure and/or services due to flooding. Forecasts predict a worsening situation and severe 	Impacts: Severe disruption <ul style="list-style-type: none"> Widespread flooding to properties and communities Large scale evacuation occurring/may be required Collapse of structures/buildings possible Danger to life to due fast flowing/deep water/wave overtopping/inundation Widespread loss of/disruption to key sites identified in flood plans e.g. railways, utilities Severe disruption to travel 	Actions <ul style="list-style-type: none"> ACTIVATE MAFP if not already done so SCG to be established if not already

flooding likely <ul style="list-style-type: none"> • Predictions of major surges threatening coastal locations • Professional judgment of category 1 & 2 responders 	<ul style="list-style-type: none"> • Significant resource impacts affecting responders • Flood defence failures (risk of or actual) which could result in extreme flooding 	
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Responsibility for Activating the Plan

If the flood risk is at **Level 2 or 3** (substantial or severe) as described in the above tables, inform the Police Force Incident Manager.

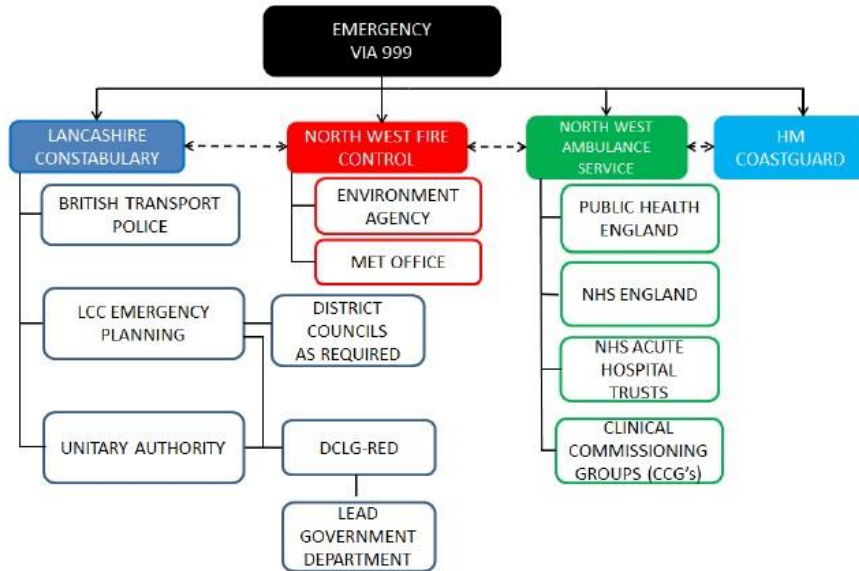
The Police FIM will activate the Multi-Agency Flood Plan

Any agency can request the activation of the Multi-Agency Flood Plan. They should contact the Police Force Incident Manager stating ‘This is (agency) and we are asking for the Multi Agency Flood Plan to be activated, please carry out actions as stated in Police Plan E20

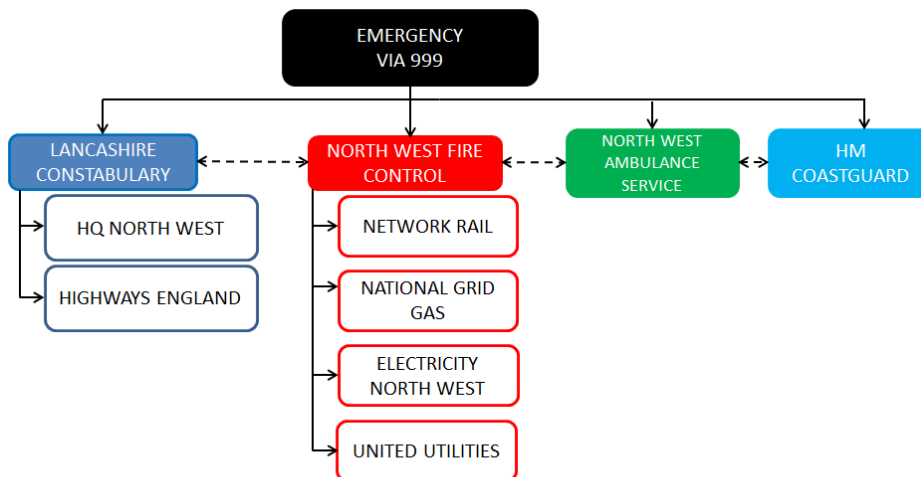
Notifications

Upon activation, notifications will occur as per the LRF Lancashire Emergency Response Plan:

Notification Cascade – Category 1 Responders



Notification cascade – Category 2/Other Responders



Initial Response

Actions at level 1

Lead Agency	Actions
All organisations	<ul style="list-style-type: none"> • Monitor the situation to determine the level of flood risk • Initiate or continue internal routine responses. • Resources: <ul style="list-style-type: none"> ○ Inform appropriate personnel ○ Ensure appropriate level of resources available ○ Ensure appropriate level of staff available for key functions ○ Ensure appropriate level of staffing in place for out of hours service • Activate local response procedures as appropriate and necessary: <ul style="list-style-type: none"> ○ Clear trash screens ○ Activate pumping stations ○ Check known problem areas • Collate information on the ground
Environment Agency	EA to consider holding a multi-agency Flood Advisory Service teleconference.
Lancaster City Council Resilience Officer/Duty Emergency Incident Officer checklist	<ul style="list-style-type: none"> • If appropriate discuss the situation with the Senior or Assistant Operations Manager at White Lund Depot including available resources, personnel, equipment, flood vans and whether additional staff should be put on standby. Discussion should take place as soon as possible in working hours as once staff have left it can be difficult to muster a team. <p>Consider:</p> <ul style="list-style-type: none"> • Advising City Council Emergency Call Centre • Informing the Senior Emergency Officer • Specific checklist for the zone(s) for which the Alert or other trigger has been received. Where necessary carry out any additional actions such as those for Sunderland Point. • Warning other Community Emergency Groups as appropriate. • Installing storm boards for predicted tidal events. • Be aware that flooding could occur in the specified or other areas. • Be aware that the situation could worsen. • Monitor local conditions • Maintain operational log of events and decisions.

Actions at level 2

Lead Agency	Actions
<i>Environment Agency</i>	<i>EA to hold a multi-agency Flood Advisory Service teleconference.</i>
<p>Lancaster City Council</p> <p>Resilience Officer & Duty Emergency Incident Officer checklist</p>	<ul style="list-style-type: none"> • Inform the Senior Emergency Officer and discuss deployment of additional Emergency Incident Officers and/or other resources needed on standby (See Appendix 'D'). Discussion should take place as soon as possible in working hours as once staff have left it can be difficult to muster a team. • Inform DECC Room Manager • Inform Duty Emergency Incident Officer (if not already aware). • Inform the Director of Communities and the Environment (or nominated deputy), and the Duty Manager at Salt Ayre Leisure Centre. • Discuss with Engineering team if a tidal event requires deployment of storm boards. • Establish contact with EA Flood Warning Officer at the control room on private number then maintain regular contact. • Study the information from the EA, from Flood Risk maps (in the Engineering Section), the Zone clusters information in this plan and any other sources of information such as from Community Emergency groups and/or local residents (including social media reports) to determine likely areas where action will be required. • Arrange for staff to visit areas likely to be affected to make 'on the ground' observations of conditions and report back (Consider issuing the relevant cluster appendices to deployed staff). At weekends or 'out of hours' visits will initially be done by the DEIO, possibly supplemented by additional officers on standby or the cleansing team. A log must be maintained of such visits and the conditions found recorded. • Maintain regular contact with deployed staff. • Dependant on the area(s) likely to be affected be alert to the special needs of vulnerable people (e.g. sheltered accommodation, schools and care homes). • Consider with Senior Emergency Officer opening the DECC. • Inform the Council's 24 hr Emergency Call Centre. • Ensure telephone calls from the public are received and recorded. • Establish contact with Lancashire Constabulary, Lancashire Fire & Rescue Service and Lancashire County Council Emergency Planning Unit. The police will nominate a local supervisor to coordinate the emergency response to flooding incidents and this officer should be contacted to discuss the need for a multi-agency control. Maintain liaison with all. • Request further support from Assistant EIOs if necessary. They will be deployed to monitor local conditions as directed.

	<ul style="list-style-type: none"> • Consider the checklist, Zone appendix or Community Emergency Plan for the area(s) concerned and implement any necessary local actions (such as those for Sunderland Point). • If there is a Community Emergency Group covering an area likely to be affected, make contact and brief on the forecast. Ascertain if any assistance is likely to be needed. • Mobilise resources as necessary, including Environmental Services Emergency Response Team (See Appendix 'E'), equipment, floodsax and AFIOs to areas where most needed. • Maintain regular contact with deployed officers and the Emergency Response Team to monitor the overall situation and determine priorities. • Consider how messages and information will be passed to the public. • Liaise with other agencies regarding properties with occupied basements that may be affected and the need to warn the residents. The Council Communications Team will also use social media messages to keep the public informed. • Liaise with County Council Highways regarding the need for warning signs and/or to close roads to traffic, under the approval and direction of the Police. • Consider the need for further Council resources or external organisations. Consult with and obtain the approval of the Senior Emergency Officer before making significant expenditure or requesting mutual aid. • Call out additional Environmental Services resources as necessary from • Consider the need and prepare for the possible evacuation of the public in areas of risk. • Maintain an operational log of events, and ensure EIOs maintain detailed personal logs • Ensure that the incident is debriefed after the event has concluded.
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Actions at level 3

Lead Agency	Actions
Lancaster City Council Resilience Officer & District Controller checklist	<p>Senior Emergency Officer, or other nominated senior officer, to act as District Controller. Carry out all actions as at Level 2 checklist above and in addition:</p> <ul style="list-style-type: none"> • Confirm with the locally nominated police supervisor and other responder agencies the need for multi-agency Strategic and Tactical coordinating groups to be established. • Discuss with Engineering team if a tidal event requires any other responses. • For incidents outside normal working hours, inform the Council's 24 hr Emergency Call Centre and request that they receive and

	<p>log calls to the Council until a Customer Services Team can be established. The council's out of hours telephone number may then be redirect over to a telephone within customer services or the DECC once it has been established.</p> <ul style="list-style-type: none"> • Open the DECC for overall planning and control of Council operations. Once established the Resilience Officer (or an EIO) should relocate there and work alongside the District Controller to interpret the likely effect of EA and Met Office predictions and advise on likely developments that will need a Council response. • Consider nominating an EIO to be based at the Customer Service Centre, as most public calls will be flooding related. It may also be necessary to have a Police representative in attendance. • Arrange issue of public safety messages through the Council Communications Team. If an officer is deployed to any broadcasting location, such as Beyond Radio, they should be given a council radio so that contact can be maintained with the DECC and the most up to date information passed for broadcasting. Council Communications Team to use social media to put out Facebook and Twitter messages to regularly update the public. • Dispatch council response teams to areas where most needed but recognise the potential dangers of a Severe Flood Warning situation, and their limited capabilities. Ensure staff are properly briefed and do not put themselves in danger. Maintain regular contact. Teams will be needed for 'clean up' when waters have subsided and should not be unnecessarily committed to floods. • Liaise with County Council Highways regarding the need to erect warning signs and/or close roads to traffic, under the approval and direction of the Police. • Call out further resources as necessary from Environmental Services and Contractors. • Discuss with Ops Manager at WLD any need for more sandbags to be filled or obtained. • Consider extra resources/mutual aid from external organisations. Consult and obtain approval from District Controller as necessary. • Update the Emergency Call Centre/DECC/Customer Service Centres on a regular basis, particularly with information that can usefully be passed to the public. • Consider with other agencies the need for evacuation of the public in areas of risk and, if necessary, open rest centres. • Dependant on the area(s) likely to be affected be alert to the special needs of vulnerable people (e.g. sheltered accommodation, schools and care homes). • Consider with other agencies whether any properties with occupied basements may be affected and warn occupiers. • Consider the need to protect vulnerable Council properties or infrastructure and to move vulnerable equipment and vehicles from White Lund Depot or other premises to safer locations. • Consider the need to make parking available for vehicles displaced from flooded areas • If the flooding is expected to continue for an extended period, the District Controller must arrange a shift rota for all personnel
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	<p>involved to ensure continuity of cover and adequate rest periods.</p> <ul style="list-style-type: none">• If major flooding and disruption is experienced, the District Controller <u>will</u> declare a Major Incident and bring the Council's District Emergency Plan into operation.• Arrange the early establishment of a Recovery Group to allow parallel working and a seamless transition into the Recovery phase once the operational response has concluded. The Council's Community Recovery Plan explains how this group and other sub-groups will work and should be used for this aspect of the Council's response.
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Roles and Responsibilities

In addition to [Response agencies link](#) specific actions for responding agencies are detailed below:

The following table shows the role of each organisation in response to declaration of a flood incident in [Lancaster].

Emergency designation and Role	Location	Fulfilled by (Post)	Main Responsibilities
Organisation Name			
			•
			•
			•

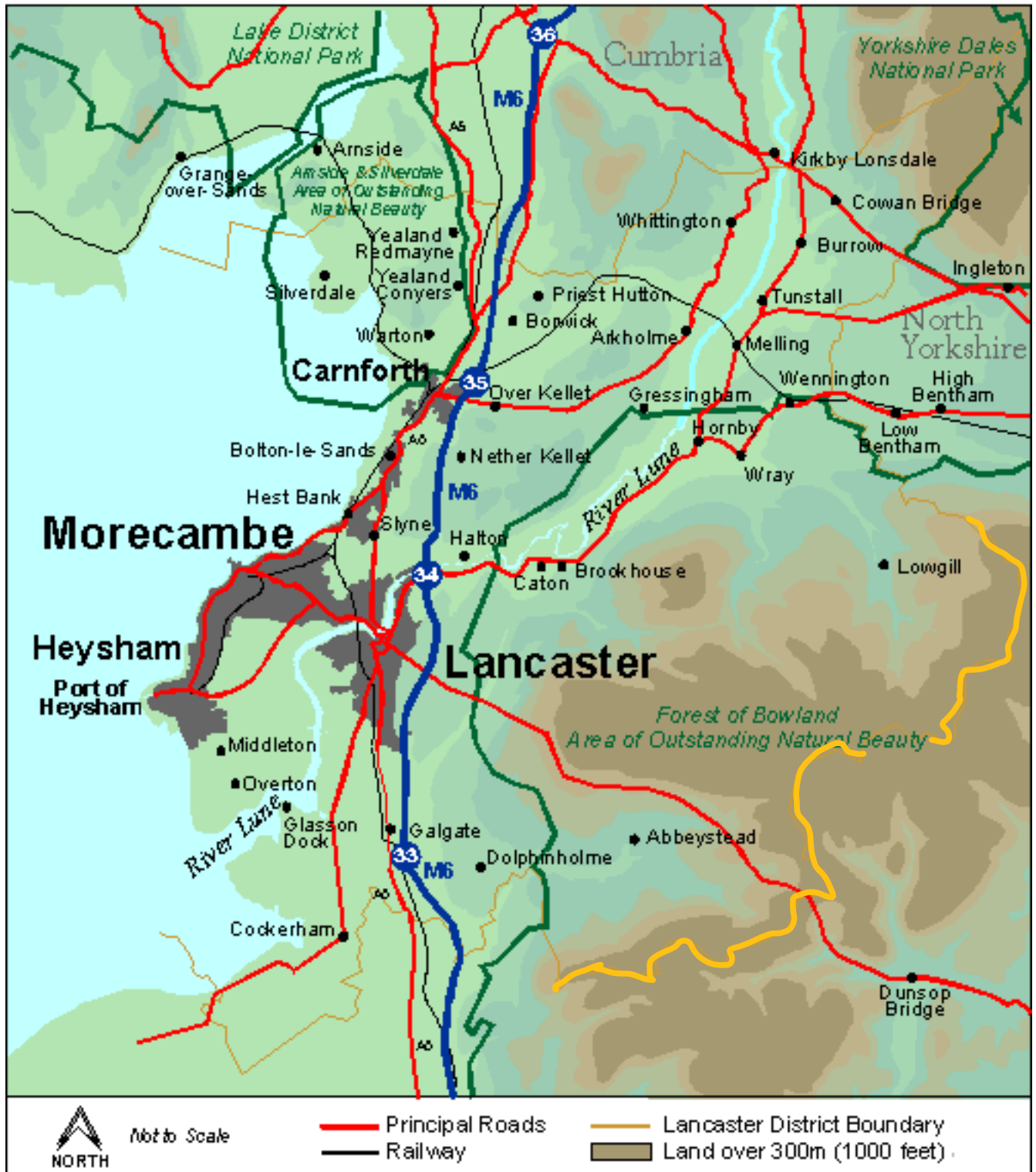
Ongoing Response

Cross Border Arrangements

Lancaster has borders with the districts listed below. The response to flood incidents which cross these borders will need to be coordinated by the agencies involved and if necessary, by the SCG.

- Wyre Borough Council
- Ribble Valley Borough Council
- South Lakes District Council (Cumbria)
- Craven District Council (North Yorkshire)

Map showing Lancaster District and shared borders



Appendix A: Overview

Sandbag Policy for Lancaster City Council

Sandbags can make a critical difference in diverting shallow flowing water that has somewhere else to go, or deflecting waves caused in shallow water by passing vehicles. However, they are not waterproof and will fail to keep floods out of buildings where the mean water level outside is higher than the doorstep or any airbrick ventilators.

Local Authorities have no statutory obligation to provide materials for flood protection. A stock of sandbags is retained for emergency repairs to council owned flood defences and could be made available to the responder agencies in some emergency circumstances, but these are not available for the public to protect their property.

Advice: Householders and businesses, particularly those in Flood Warning Areas, should not rely on the Council being able to respond to all needs in an emergency and should reflect upon measures they can take now to prepare for potential future flooding. The Council recommends that occupiers of vulnerable properties use recognised flood defence products rather than sandbags to provide proper protection. **Removable Flood Boards**, air brick covers and other similar devices are a significantly more effective and convenient means of preventing water entry to properties than sandbags and can be fitted by any reputable local builder.

If property owners decide that sandbags will still form part of their flood defence preparations these **Builders Merchants** in and around the City Council area have advised the Council that they will supply empty sandbags and sand and will deliver these. Delivery charges vary dependent on the value of the order and distance involved but, in some cases, free delivery is offered.

Also, some firms will fill the bags before delivery although an extra charge will be levied for this.

Builders Supplies (West Coast) Ltd, Middlegate, White Lund Industrial Estate, Morecambe.

01524 842299 www.bswc.biz

C & C Supplies (Collinson) Ltd, Nateby Works, Garstang PR3 0JB

01995 606311 <http://ccsupplies.co.uk>

Jewson Ltd, White Lund Rd, Morecambe.

01524 68878 www.jewson.co.uk

Keyline Builders Merchants Ltd, Marsh Point, Lancaster

01524 34141 www.keyline.co.uk

Naylor Myers Ltd, Cumberland Close, Low Bentham Road, Bentham LA2 7BP

01524 261389 www.myersgroup.co.uk

Travis Perkins, Euston Rd, Morecambe LA4 5LN

01524 410056 www.travisperkins.co.uk

(Branches also at Sandside and Kendal) Travis Perkins also has submersible pumps available for hire.

Flood risk zones Lancaster District: Appendix ‘B’



Index to numbered parishes and wards on next page

Zone A - City, Quayside and Skerton: Bulk, Marsh, Castle, Skerton West, Skerton East, Scotforth West and Aldcliffe with Stodday

Zone B - Burrow Beck: John O’Gaunt, Scotforth East, University and Scotforth Rural plus Scotforth Parish.

Zone C – Caton, Claughton, Halton and Quernmore:

Zone D: Lune Valley (North): Gressingham, Arkholme with Cawood, Melling with Wrayton, Whittington, Burrow with Burrow, Leck, Tunstall, Cantsfield, Ireby

Zone E – River Wenning: Hornby with Farleton, Tatham, Roeburndale, Wray with Botton, Wennington and Bentham.

Zone F – Lancaster South Rural: Cockerham, Ellel, Thurnham with Glasson and

Zone G – Morecambe Coastal: Bare, Harbour, Poulton, Torrisholme and Westgate

Zone H – Heysham and Rural: Heysham North, Central and South. Heaton with Oxcliffe, Middleton and Overton (inc Sunderland Point).

Zone J – Carnforth and Coastal: Bolton-le-Sands, Carnforth, Silverdale, Slyne with Hest, Warton, Yealand Conyers and Yealand Redmayne.

Zone K – Kellet Communities: Borwick, Nether Kellet, Over Kellet and Priest Hutton

Index of numbered wards and parishes.

1	Silverdale	16	Ireby	31	Skerton West	46	Scotforth Rural
2	Yealand Redmayne	17	Wennington	32	Skerton East	47	Scotforth East
3	Yealand Conyers	18	Bolton Le Sands	33	Bulk	48	Quernmore
4	Warton	19	Nether Kellett	34	North Quernmore	49	Middleton
5	Carnforth	20	Gressingham	35	Caton with Littledale	50	Overton
6	Over Kellett	21	Hornby with Farleton	36	Roeburndale	51	Thurnham
7	Borwick	22	Bare	37	Wray with Bolton	52	Scotforth West
8	Priest Hutton	23	Slyne with Hest	38	Tatham	53	University
9	Arkhholme with Cawood	24	Halton with Aughton	39	Heysham Central	54	Ellel
10	Whittington	25	Cloughton	40	Heysham South	55	Over Wyresdale
11	Burrow with Burrow	26	Poulton	41	Heaton with Oxcliffe	56	Cockerham
12	Leck	27	Torrisholme	42	Marsh	57	Sunderland Point
13	Tunstall	28	Heysham North	43	Castle		
14	Melling with Wrayton	29	Harbour	44	Aldcliffe with Stodday		
15	Cantsfield	30	Westgate	45	John O’Gaunt		

Flood Risk Zones:

The following pages detail the cluster zones A to K shown above and includes maps of the zones, Environment Agency flood warning areas, specific risks, critical infrastructure and details of community emergency groups where appropriate

Zone A - City, Quayside and Skerton

1. Description of zone

Zone A covers the Wards of Bulk, Marsh, Castle, Skerton West, Skerton East and Scotforth West. It also includes the rural parish of Aldcliffe. The zone roughly comprises the River Lune from the motorway down to the city centre urban area and continues down the estuary on the southern bank.

2. Map of zone: <https://arcg.is/18DGT00>

3. Recent flood history

This area badly flooded during Storm Desmond in December 2015. Further flood defences have been installed since that event, but the area remains at some risk.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert areas:

- Flood alert for Lower River Lune and Conder

The Flood Warning Areas within this zone include:

Flood Warning Area Code	Flood Warning Area Name	Flood Warning Area Description	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
SC2 River Lune Lancaster Quay	012FWTSC2		1732	
	012FWTSC2A River Lune at Lancaster Quay, area around Morecambe Rd and Owen Rd	Low lying land including Our Lady's Catholic College and properties off and including Lune Street, Earl Street, Greyhound Bridge Road, Morecambe Road and Owen Road	330 6.89m Lancaster Quay	<ul style="list-style-type: none"> • Confirm floodgates are being closed • Consider closing main roads with diversions • Where possible warn occupiers of properties in Zones 'A' 'B' and 'C', which includes properties on the roads shown (left) and consider evacuation.
	012FWTSC2B River Lune at Lancaster Quay, between St Georges Quay, River Street and Damside Street	Low lying land including properties on St Georges Quay, River Street and Damside Street	238 7.75m Lancaster Quay	
	012FWTSC2C River Lune at Lancaster Quay, comprising area from Lune	Low lying land including Lune Industrial Estate, Properties off and Including	1164 8.05m Lancaster Quay	

	Industrial Estate to Lune Street	Lune Street and Lancaster Cricket Club		
SC3 River Lune at Skerton Pool	012FWFSC3		672	
	012FWFSC3A River Lune at Skerton Pool, areas around Riverside Industrial Estate and Halton Training Camp	Low lying land including Lansil Way, Riverside Industrial Estate and Halton Training Camp	2 2.23m Skerton Weir	<ul style="list-style-type: none"> Where possible warn occupiers of properties in Zones 'A' and 'B', which includes properties on the roads shown (left) and consider evacuation.
	012FWFSC3B River Lune at Skerton Pool, bordering Caton Road, Damside Street and North Road	Low lying land including properties off and including Damside Street, North Road, Parliament Street, Kingsway, The Ramparts and Aldrens Lane, Lansil Industrial Estate and Riverside Industrial Estate	670 2.99m Skerton Weir	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location
Bulk: i.) Caton Road at various points between Skerton Bridge and Junction 34 M6 ii.) Back Caton Road/Bulk Road junction – Berendsen (laundrette) and the car wash both flood, in part due to the river but also when extreme rainfall events compromise Mill Race capacity. iii.) Around Stonewell and associated roads off one-way system iv.) Flooding from the Newton Beck has caused problems and various 'slow the flow' measures have recently been implemented.
Marsh: West Road
Castle: Around Stonewell and associated roads off one-way system
Skerton West: Torrisholme Road under the railway bridge
Skerton East: i.) Around the junction of West Road and Lune St. ii.) Aldrens Lane junction Mainway and Halton Rd (Surface water and river flooding. The new flood defences are intended to prevent the latter)
Scotforth West: Brunton Road near the railway bridge

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Marsh: Scaleford Retirement Home	River Lune	Lune Road LA1 5QT SC2		Registered for 32 residents	
Marsh: Willow Lane Community Primary School	River Lune	Willow Lane LA1 5PR SC2		School Roll 210 pupils	
Skerton East: Our Lady's Academy	River Lune	Morecambe Road LA1 2RX SC2		School Roll approx. 900 pupils (Max 1145)	
Skerton West: Salt Ayre Leisure Centre	River Lune	Doris Henderson Way LA1 5JS SC2		Centre outside flood area but approach roads may be affected.	
Scotforth West: Royal Lancaster Infirmary	Surface water	Ashton Road LA1 4RR		Main hospital for district. c300 beds. Not previously directly affected by flooding. Some approach roads may be affected during heavy rain.	

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
Bulk: Caton Road electricity sub station	SD 485636 SC3	River Lune overtopping	Following 2015 flooding, electrical equipment has been raised on 'stilt' structure and site now protected by new riverbank flood defences.
Bulk and Skerton East Wards: Skerton and Greyhound Bridges	Skerton: SD 479623 Greyhound: SD 477621 SC2	River Lune debris during severe flooding	During 2015 both bridges struck by shipping container carried in river and had to be closed until inspected and confirmed safe to use.
Marsh and Skerton West Wards: Carlisle Bridge	SD 472624 SC2	River Lune debris during severe flooding	Substantial bridge carrying West Coast Main Line at high level. Not previously affected by flooding.
Bulk: Lancaster Fire and Ambulance Station.	SD 477619 SC2	River Lune overtopping. Surface water flooding	During 2015 the fire station was flooded. It has since become combined fire and ambulance station.
Castle: Lancaster Railway Station.	SD 473616	Surface water flooding	Principal WCML station has been affected by run-off water during heavy rain conditions.
All wards in zone: Principal road network around city.	SC2 SC3 and other locations on A6, A683, A588 and A589.	River Lune overtopping. Surface water flooding	During 2015, and other earlier events, the city centre road network and main roads into and out of the area were affected by River Lune flooding and many instances of surface water flooding. B5231 Torrisholme Road at railway bridge can be blocked by flooding.

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
South Lancaster Community Emergency Centre	Lancaster Methodist Church, Scotforth LA1 4TE
Lancaster Community Emergency Centre (Not yet operational)	The Cornerstone, Sulyard St, Lancaster LA1 1PX
Salt Ayre Leisure Centre	Doris Henderson Way LA1 5JS
University of Cumbria Sports Centre	Bowerham Road LA1 3JD

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
See comments at Section 8.	

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken
Environment Agency	Close flood defence gates on Quayside

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Community Volunteers	South Lancaster Community Emergency Centre	Lancaster Methodist Church (Sec 9 above)	

Zone B – Burrow Beck Communities

Description of zone

Zone B covers the Wards of John O' Gaunt, Scotforth East and University & Scotforth Rural. It also includes the rural parish Scotforth. The zone roughly comprises the wards that sit either side of Burrow Beck but includes all flooding risks in the zone.

1. Map of zone

<https://arcg.is/0nKCW5>

2. Recent flood history

Burrow Beck FWA was created in March 2011 when the potential 'flash flood' characteristics of the beck were identified. It flows through residential areas of Bowerham and Hala before passing under the A6 and the main railway line. There are several low bridges and culverts that easily block resulting in water flowing over the top when the stream is swollen and the green on Hala Estate is sometimes under water. The area was not seriously affected by Storm Desmond in 2015. During November 2017 the beck flooded in numerous locations and several properties from Canterbury Avenue to Lentworth Drive were flooded. During heavy rainfall in 2020 a low bridge (since removed) blocked resulting in flooding on Canterbury Ave, Barton Rd, Lentworth Drive and Hala Square.

3. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert areas:

- Flood Warning for Burrow Beck

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
L42 Burrow Beck			182	
	012FWFL42A	Burrow Beck at Lancaster, around Canterbury Ave, Cranwell Avenue and Bowerham Road	79 0.85m Burrow Beck	<ul style="list-style-type: none"> Inspect and evaluate Verify conditions Monitor conditions Escalate or downgrade as deemed necessary
	012FWFL42B	Burrow Beck at Lancaster, between Newlands Avenue, Lentworth Drive and Whinfell Drive.	103 0.98m Burrow Beck	As above

4. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
Burrow Beck is a Rapid Response Catchment – see LFRS tactical plan at Appendix 'C'		

5. Surface Water Hotspots within the zone

Location
Scotforth East: A6 Scotforth Road around junction with Palatine Avenue
Scotforth East: Gloucester Avenue
Scotforth West: Newsham Road
Scotforth West: Bridge Road
Scotforth West: Avondale Road
University and Scotforth Rural: Blea Tarn Road adjacent to the reservoir
John O'Gaunt: Bowerham Road near junction with Barton Road

6. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include FWA if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
St Bernadette's Primary School, Bowerham Rd LA1 4HT	Flooding from Burrow Beck	SD488600 L42		Max number on roll 210. (Moorside primary school (Max No. 630) is next door but higher up away from the flood risk.)	
Scotforth Court				Sheltered accommodation.	

7. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
Scotforth East: <i>Infrastructure</i>	L42	Flooding from Burrow Beck	
Scotforth East: A6, junction Collingham Park, bridge over beck. Main railway adjacent has bridge over beck.	SD479585 L42	Flooding from Burrow Beck	A6 junction occasionally flooded but railway not normally affected.
John O'Gaunt: <i>Infrastructure</i>	L42	Flooding from Burrow Beck	

8. *Emergency Evacuation Assembly Points*

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
South Lancaster Community Emergency Centre	Lancaster Methodist Church, Scotforth Road LA1 4TE
University of Cumbria Sport Centre	Bowerham Road LA1 3JD

9. *Vulnerable transport routes*

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
A6 from Jcn 33 M6 into Lancaster	Vulnerable to flooding in Galgate
See comments at Section 8.	

10. *Responsibilities*

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken
Environment Agency	Check watercourse for blockages, clear screens

11. *Additional response equipment and personnel*

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided

Zone C - Caton, Claughton, Halton and Quernmore (CCHQ)

1. Description of zone

Zone C is within the Wards of Halton with Aughton and Lower Lune Valley. It covers the parishes of Caton with Littledale, Claughton, Halton with Aughton and Quernmore. It is dominated by the River Lune but there are surface water flooding hot spots on higher ground away from the Lune.

2. Map of zone

<https://arcg.is/0jLKeP>

3. Recent flood history

The River Lune caused flooding in Halton during Storm Desmond and the lower lying parts of the village, and of Quernmore parish on the opposite bank, remain vulnerable. There have also been repeated flooding incidents in other parts of Halton caused by surface water or overflowing becks. Artle Beck running through Caton is also a concern to residents as is the Bull Beck and its tributaries in Brookhouse.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert areas:

- Flood alert for Lower River Lune and Conder

The Flood Warning Areas within this zone include:

Flood Warning Area Name	Flood Warning Area Code and Official name	FWA Description	Number of properties within flood warning area and trigger level	Actions additional to general Alert and Warning checklists
L50 River Lune at Halton	012FWFL50			
	012FWFL50A River Lune at Halton, adjacent to river from Forgebank Walk to M6 bridge	The Boat House, Tithebarn Cottage, Tower House, Church View, Clock House, Forgebank Walk and Mill Lane	44 2.23m Skerton Weir	Consider general items in Flood Alert checklist (Page 16) and in addition: <ul style="list-style-type: none"> • Inspect and evaluate • Verify conditions • Monitor conditions Escalate or downgrade as necessary
	012FWFL50B River Lune at Halton, bordering M6, Church Brow, Mill Lane and Denny Beck Lane	Station Road, Riverside Close, Ivy Cottage, White Lion Hotel, Church Brow, Denny Beck, Beck Lane and Farm	112 2.99m Skerton Weir	As above

L55 River Lune at Caton	012FWFL55			
	River Lune at Caton, Aughton Barns to Brow Cottage 012FWFL55A	River Lune at Caton, including Aughton Barns, Lanesfoot, Greenup, Ellers Farm and Brow Cottage	6 6.0m at Caton	Consider general items in Flood Alert checklist and in addition: <ul style="list-style-type: none"> Inspect and evaluate Verify conditions Monitor conditions Escalate or downgrade as necessary
	River Lune at Caton, Claughton Terrace to Low Mill 012FWFL55B	River Lune at Caton, Claughton Terrace, Lunesdale Terrace, Holme Lane, Ball Lane and Low Mill	83 8.0m at Caton	As above

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location	Additional details
Halton	
High road Halton, NE end.	Heavy water run-off from the fields with unsuitable drainage. Run off will still flood Penny Stone road if the drains are not clear
Halton Road under the motorway bridges	
Halton Road near Red Door Cafe.	
Area around Halton side entrance to the iron bridge.	
Low Road	Will fill with water if the drains are not clear
Crook of Lune road bridge	Dips either side of the main arch catch field run off or acute heavy river run off
Caton Road under the M6 Motorway Bridge and around the south bound junction	
Denny Beck Lane at various points along length	
Caton Road around the Holiday Inn (See also Zone A Skerton Pool)	

Caton & Brookhouse	
A683 junction with Low Rd (Escow Beck)	
A683 junctions with Ashcroft Close	
Quernmore Rd junction with Copy Lane	
Quernmore Rd at Lythe Brow	Run off from adjacent fields
Copy Lane near Willow Mill	
Ashcroft Close	
Artlebeck Rd at north end	
Hawthorn Close	Run off from adjacent field
Moorside Rd.	In dips between Tarn Beck and 61 Moorside Rd and between Tenters Farm and Heywood House.
Caton Green Rd close to Hillcroft Nursing Home	

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Caton Primary School & Infinity pre-school	Artle Beck	Broadacre, Caton LA2 9NH	Lancashire County Council	31 on roll for primary school (2019) 20 places for pre-school (2016)	Contact Primary School and pre-school 01524 770104 if conditions give rise to concern.
Caton St. Pauls CofE Primary School	Bull Beck and Kirk Beck	Moorside Road, Brookhouse LA2 9PJ	Lancashire County Council/Diocese of Blackburn	174 on roll (2020)	Contact Primary School and pre-school 01524 770241 if conditions give rise to concern.
Caton Green Nursing Home	Flooding to access roads	Caton Green Road, Lancaster LA2 9JH	Hillcroft Nursing Homes	Up to 31 elderly vulnerable residents	Contact Home 01524 770334 if conditions give rise to concern.
Sheltered Housing	Artle Beck	Beckside and Artlebeck Road	Lancaster City Council	Numerous individual sheltered accommodation bungalows.	Check area if conditions give rise to concern and if necessary contact individual residents and arrange support for evacuation.
Littledale Hall Addiction Treatment Centre	Flooding to access roads and from Artle Beck	Caton, Lancaster LA2 9EA SD567620	Littledale Hall Therapeutic Community	33 bed residential treatment centre	Contact Home 01524 771500 if conditions give rise to concern.

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
<i>Infrastructure</i>			

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Halton Community Centre (See Community Emergency Plan - building has emergency power)	Low Road, Halton LA2 6NB
Victoria Institute, Caton (See Community Emergency Plan - building has emergency power)	Brookhouse Rd, Caton LA2 9QT

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
Halton Road, from Bay Gateway junction down into lowest point	Dip under motorway bridge can fill with flood water as can lowest section of road nearer village. Alternative route via A683 and Crook o'Lune.

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken
N/A	

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Community volunteers, local emergency centre	Caton & North Quernmore Community Emergency Group	Caton Victoria Institute	Floodsax, battery radios, torches, one fully submersible pump.
Community volunteers and local emergency centre	Halton Community Emergency Group	Halton Community Centre	

Zone D - Lune Valley Communities (North)

1. Description of zone

Zone D includes rural communities in the Wards of Upper Lune Valley and Kellet. It covers the parishes of Gressingham, Arkholme with Cawood, Melling with Wrayton, Whittington, Burrow with Burrow, Ireby with Leck, Tunstall and Cantsfield.

A Community Emergency Plan has been completed for Ireby with Leck and are in preparation at Gressingham and at Whittington.

2. Map of zone

<https://arcg.is/H1THb0>

3. Recent flood history

This zone experienced scattered flooding incidents throughout the various communities during Storm Desmond in 2015 and again in November 2017.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert areas:

- Flood alert for Upper River Lune

The Flood Warning Areas within this zone include:

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
None				

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
None		

6. Surface Water Hotspots within the zone

Location	Additional details
Gressingham to Hornby Road on west side of Loyne Bridge	Affected by very high river levels as well as surface water.

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
<i>To be identified with local community information</i>					

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
<i>To be identified in conjunction with LRF partner agencies</i>			

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Fraser Hall (County Council Level 1 Rest Centre – capacity 100)	Cowan Bridge, Carnforth LA6 2HS
Melling Village Institute (County Council Level 1 Rest Centre – capacity 60)	Melling, Carnforth LA6 2RB
Tunstall Parish Hall (County Council Level 1 Rest Centre – capacity 120)	Church Lane, Tunstall LA6 2QP

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided

Zone E – River Wenning Communities

1. Description of zone

Zone E is within the Ward of Upper Lune Valley and covers the rural communities in the Lancaster District parishes of Hornby with Farleton, Roeburndale, Tatham, Wennington and Wray with Botton. Beyond Wennington in the east it continues to follow the River Wenning to include the North Yorkshire town of Bentham.

2. Map of zone

<https://arcg.is/1aj8OS>

3. Recent flood history

Surface water flooding causes problems on Lodge Lane at Wennington. There is a formal Flood Warning area at Hornby but the village hasn't been flooded in recent years. The River Roeburn, flowing down to Wray Village, is a recognised Rapid Response Catchment. In 1967, during a violent storm, Wray was the scene of a catastrophic (Boscastle style) flood which destroyed several houses and bridges. Thankfully no-one was killed but it illustrated the power of the Roeburn in spate. Flood warnings are not available for the Roeburn but the area needs to be considered during storm conditions.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for Upper River Lune

The Flood Warning Areas within this zone include:

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 general Alert and Warning checklists
River Wenning at Hornby L4				
	012FWFL4A	River Wenning at Hornby, area to the west of Post Horse Lane, Hornby Hall Close and Sewage Works	5 2.45m/Hornby	Consider closing A683 and implementing diversions.
	012FWFL4B	River Wenning at Hornby, beside Main Street, including Post Horse Lane, Hornby Hall Close and Monteagle Drive.	124 3.14m/Hornby	
River Wenning at Wennington L56	012FWFL56	Low lying area next to River Wenning at Wennington, including Smithy House,	1 4.20m/ Low Bentham	

		Wennington Green, Wennington Bridge and buildings closest to the river at Forgewood House		
River Wenning at Low Bentham Y3	012FWFY3A	River Wenning at Low Bentham Main St, Cedar House School Punch Bowl Hotel and Rose Cottages	36 3.01m Low Bentham	
	012FWFY3B	River Wenning at Low Bentham, Collingwood Dve, Mill Lane and Millers Ford	35 4.37m Low Bentham	
River Wenning at High Bentham Y2	012FWFY2A	River Wenning at High Bentham, at Wenning Avenue, Mayfield Rd, Riverside Caravan Park and the Sewage Works	8 2.0m Bentham Bridge	
	012FWFY2B	River Wenning at High Bentham, Todhill, Wenning Ave, Mayfield Rd and Riverside Caravan Park	24 4.0m Bentham Bridge	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
Wray	River Roeburn	Catastrophic deluge flood in 1967. Flood warnings not available for the Roeburn.

6. Surface Water Hotspots within the zone

Location	Additional details
B6480 from Spout Lane to Ravens Close Brow	Surface water
Lodge Lane, Wennington	Surface water
Wenning Ave, Bentham	Water from upper part of High Bentham
Mayfield Rd, Bentham	Water from upper part of High Bentham
Hill Croft, Bentham	Water overflows from Church Beck
Stone Cotts, Albert Cotts LA2 7DX	Water sits in dips

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Old Vicarage care home	River Wenning	Main St, Hornby LA2 8JT L4 Flood Warning Area		Licensed for 15 residents	

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
Hornby fire station	Main Street SD585685	Sited within L4 FWA	

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Wray Village Hall (County Level 1 rest centre) Capacity 120	Main Street, Wray LA2 8QA
Bentham Town Hall. Capacity 300 (See Bentham Community Emergency Plan)	Station Rd, High Bentham, LA2 7LF
Low Bentham Victoria Institute. Capacity 200 (See Bentham Community Emergency Plan)	Main St, Low Bentham LA2 7BX

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
B6480 road from Wennington to Bentham	Frequently flooded when river levels are high. Extreme events have seen parts of road washed away.
A683 Hornby	Passes through L4 Flood Warning area.
Carnforth to Settle Junction railway line	Several locations vulnerable to flooding necessitating temporary line closures.

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Radios, high viz PPE. Access to other community equipment resources.	Wennington and North Tatham Community Emergency Group	Wennington	See Wennington and North Tatham community emergency plan.
High viz PPE. Access to other community equipment resources.	Bentham Community Emergency Group	Bentham Town Hall	See Bentham community emergency plan

Zone F – Lancaster South Rural Communities

1. Description of zone

Zone F is comprises the Ellel Ward and covers the rural communities in the Lancaster District parishes of Cockerham, Ellel, Thurnham with Glasson and Over Wyresdale.

2. Map of zone

<https://arcg.is/1HGKmr1>

3. Recent flood history

Flooding can occur in the Galgate area from the River Conder, Whitley Beck and Ou Beck. In Lower Dolphinholme there is potential for flooding from the River Wyre.

In Aug 2004 eighteen properties flooded when Whitley Beck surcharged at Laund Fields access bridge due to the volume of water. Water flowed down Stoney Lane and flooded properties on Stoney Lane and Salford Road. Water only got back into the channel when residents and the fire brigade knocked down a wall at No. 10 Salford Road although one-way valves have since been fitted into this wall.

Galgate was not affected by flooding during Storm Desmond in 2015 but during a 'cloudburst' event in November 2017 there was extensive flooding from both Whitley Beck and the River Conder. This required evacuations and >150 properties were affected. The A6 road also had to be closed due to serious flooding.

The flooding plan was activated again in October 2020 when some road flooding occurred but properties were not directly affected.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for: 1.) Lower River Lune and Conder 2.) Upper River Wyre

The Flood Warning Areas within this zone include:

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
River Conder at Galgate	L35		Note that some properties are in both FWAs - L35A and L35WB	
	012FWFL35A River Conder and Ou Beck at Galgate	River Conder and Ou Beck at Galgate Main Rd, Chapel St, Chapel Lane, Salford Rd, Vernon Crescent and Leachfield Rd areas	274 2.15m Galgate	Consider closing A6 and implementing diversions.

Whitley Beck at Galgate	L35WB			
	012FWFL35WB Whitley Beck at Galgate	Whitley Beck at Galgate, Main Rd, Stoney Lane, Salford Rd, Chapel St and Ashley Gdns	94 1.5m Stoney Lane	Consider closing A6 and implementing diversions.
Lancashire Coastline at Thurnham	TL22			
	012FWCTL22A Lancashire coastline at Thurnham, around Cockersands Abbey, Thurnham Moss and Conder Green	Glasson, Chapel Hill, Plover Hill, Cockersand Abbey, Thurnham Moss, Banks Houses and Conder Bridge	30 6.3m Bank Farm	
	012FWCTL22B Lancashire coastline at Thurnham, between Glasson and Marsh Lane A588.	Glasson, Thurnham Moss, Hillam Lane Farm, Wheatsheaf Cottages and Thurnham Bridge	89 6.7m Bank Farm	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
Galgate	Whitley Beck	See LFRS tactical plan at Appendix 'C' Flooded in November 2017 causing damage to commercial and residential properties in Galgate.

6. Surface Water Hotspots within the zone

Location	Additional details
Stoney Lane, Galgate	Flooding under M6 bridge
A6 road south of Hampson Island	Flooding near Salt Oke
A588 various locations south of Upper Thurnham and bottom of hill on Moss Lane	

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Hillcroft Nursing Home, Galgate	River Conder	Chapel Lane FWA L50 Galgate	Hillcroft	40 vulnerable elderly residents.	Home shouldn't be directly affected but Chapel Lane may be flooded either side.

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
<i>Infrastructure</i>		In Conder FWA	
<i>Infrastructure</i>		In Conder FWA	

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Cockerham Village Hall (County Level 1 rest centre) Capacity 200	Main Street, Cockerham, Lancaster, LA2 0EF
Ellel Village Hall (Community plan in preparation)	Main Rd, Galgate, LA2 0LQ (Behind Plough Inn)
Dolphinholme Village Hall (Community plan in preparation)	Dolphinholme LA2 9AJ
Consider also South Lancaster Community Emergency Centre	Scotforth Methodist Church – see Zone B

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
A6 main road in Galgate village centre.	This area was extensively flooded in November 2017.
Stoney Lane at M6 bridge	The dip under the motorway bridge floods, removing an alternative route into the village.
Hazelrigg Lane at M6 bridge	Area under motorway bridge floods regularly
Salford Road near viaduct	Prone to flooding when the Conder is very high.
A6 road south of Hampson	Surface water flooding at junction with Bay Horse Lane
A588 road at Conder Green and Ship Road to Glasson Dock	Both roads under water during very high tides.

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
High viz PPE. Access to other community equipment resources.	Ellel Community Emergency Group	Ellel and/or Dolphinholme Village Halls	See Ellel community emergency plan when complete

Zone G – Morecambe Coastal Communities

1. Description of zone

Zone G comprises the Bare, Harbour, Poulton, Torrisholme and Westgate Wards. The zone is covered Morecambe Town Council in addition to the City Council.

2. Map of zone

<https://arcg.is/08vq1q0>

3. Recent flood history

There have not been any significant floods in the area since the promenade sea defences were built and later enhanced.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for: Morecambe Bay

The Flood Warning Areas within this zone include: TL01 Coastline at Morecambe

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
Coastline at Morecambe	TL01			
	012FWCTL01NA Lancashire Coastline at North Morecambe Town, along Marine Road East and Central to Midland Hotel	Marine Road East, Elm Grove, Elms Road, Promenade, Marine Road Central, the Leisure Park and Jetty	449 7.9m Morecambe North	Consider installing storm boards – see list. Consider closing coastal road and implementing diversions.
	012FWCTL01NB Lancashire Coastline at North Morecambe Town, between Great Hestham, Torrisholme and Bare.	Great Hestham, Torrisholme and Bare	4141 8.1m Morecambe North	If flooding occurs pay particular attention to properties with basement flats
	012FWCTL01SA Lancashire Coastline at South Morecambe Town	Marine Road West and Sandylands Promenade	165 6.7m North Heysham	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location	Additional details
Coastal Road nr Happy Mount Park	

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
Morecambe Town Hall	Marine Road East SD439647	Tidal flooding	Building unlikely to flood but approach routes may be under water
RNLI lifeboat and hovercraft bases	Marine Road East SD435646 and SD427645	Tidal flooding	

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Stanley Road Baptists Church (Plan in preparation) (In Zone H)	Stanley Road, Heysham LA3 1UP

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
A589 main road along coast.	Affected by splashing water during storms and very high tides.

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken
Lancaster City Council	Installation of storm boards between Battery and Happy Mount Park when advised by Council Engineering Service. See list.

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided

Promenade Storm Boards – Labelling from East to West	
• <i>Happy Mount Park</i>	(One opening)
• <i>Lansdowne</i>	(One opening)
• <i>Beach</i>	(3 posts, 4 openings)
• <i>Park</i>	(One opening)
• <i>Seaborn</i>	(One opening)
• <i>Broadway</i>	(One opening)
• <i>Broadway</i>	(3 posts, 4 openings)
• <i>Royal</i>	(One opening)
• <i>Victoria</i>	(One opening)
• <i>Church</i>	(One opening)
• <i>Lord</i>	(3 posts, 4 openings)
• <i>Play Park</i>	(One opening)
• <i>Q</i>	(One opening)
• <i>R</i>	(Marine View, one opening)
• <i>S</i>	(One opening)
• <i>T</i>	(1 post, 2 openings)
• <i>U</i>	(Clock Tower, 1 opening)
• <i>U1</i>	(Euston Rd. 2 posts, 3 openings)
• <i>V</i>	(One opening)
• <i>V1</i>	(One opening)
• <i>W</i>	(Midland, 1 post, 2 openings)
• <i>1</i>	(Station, 2 posts, 3 openings)
• <i>2</i>	(Central Drive, 3 posts, 4 openings. LHS & RHS)
• <i>3</i>	(Supermarket, 1 post, 2 openings)
• <i>4</i>	(Frontierland, 2 posts, 3 openings. 6 No LHS)
• <i>5</i>	(West End Rd, 1 post, 2 openings)
• <i>6</i>	(Regent Rd, 3 posts, 4 openings)
• <i>7</i>	(Regent Rd, 1 post, 2 openings)
• <i>8</i>	(W/E Gardens Ramp, 1 opening)
• <i>9</i>	(W/E Gardens Ramp, 1 opening)
• <i>9</i>	(Sefton Rd Ramp, 1 opening)
• <i>10</i>	(Stanley Rd Ramp, 1 opening)
• <i>11</i>	(Snowden Ave Ramp, 1 opening)
• <i>12</i>	(82 Sandylands Prom, Ramp, 1 opening)
• <i>13</i>	(Grosvenor Apartments, 1 opening)
• <i>14</i>	(Rydal Road, 1 opening)

Zone H – Heysham and Rural Communities

1. Description of zone

Zone H comprises the Heysham North, Central and South Wards. Part of the zone is covered by the smaller councils of Heysham, Heaton with Oxcliffe, Middleton and Overton. Community emergency groups cover Overton and Sunderland Point

2. Map of zone

<https://arcg.is/58nPj0>

3. Recent flood history

The coastal community of Sunderland Point is very vulnerable to tidal flooding.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for: Morecambe Bay, Lune Estuary

The Flood Warning Areas within this zone include: TL01 Coastline at Morecambe (see Zone G), TL04 Coastline at Heysham and TL05 Coastline at Sunderland.

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
Coastline at Heysham	TL04			
	012FWCTL04A Lancashire Coastline at Heysham	North Wharf, Fish Quay, South Quay and West Quay	5 7.15m Heysham Harbour	
Coastline at Sunderland	TL05			
	012FWCTL05A Lancashire coastline at Sunderland, around Sunderland Point, Bazil Point and Potts Corner	Oxcliffe Hill Farm, Heaton, Bazil Point, Sunderland Point, Sunderland Brows Farm and Alderley Bank	44 5.8m Sunderland Point	
	012FWCTL05B Lancashire coastline at Sunderland, between Sunderland Brows Farm and Hawthorne Caravan Park	Riverside Farm, Sunderland Brows Farm and Hawthorne Caravan Park	4 6.4m Sunderland Point	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location	Additional details
Junction of Lancaster Road and Downyfields Rd to north of Overton	
Junction of Middleton Road and Borrans Lane near the Business Parks	

6A. Sea defences.

There are number of defences in this area. From the upper extent of the Flood Warning Area on the Lune to the lower extent of the Flood Warning Area at Shore Fields Caravan Park, including:

- Section A (River Lune from Lancaster to Sunderland):** On the right bank of the River Lune there are a number of flood defences that protect areas of low-lying land. At the outfall of Oxcliffe Dyke there is an embankment between Lancaster Road and high ground at the household refuse site. Farther downstream along the River Lune there is an embankment between high ground north of Oxcliffe Pool and high ground at Moss Road, and an embankment that is positioned east of Heaton. East of Overton there are privately maintained embankments from Wandales Point to Bazil Point. North-west of Bazil Point there is an Environment Agency embankment that ties into high ground at Bazil and Overtop. From the left bank of Lades Pool, west of Overton, an embankment runs approximately west to Alderley Bank. Another embankment, which extends to Sunderland Point, ties into this embankment west of Overton.
- Section B (Sunderland):** The defences fronting Sunderland generally consist of square concrete blockwork jointed in bitumen placed on a slope of around 1 in 2 (vertical to horizontal). However, the defences do not defend the village itself or the access road across Lades Marsh, which will be flooded during regular tidal events.
- Section C (Potts Corner):** The defences at the site consist of a rubble mound revetment at a slope of around 1 in 2.5 (vertical to horizontal). The defences extend from Potts Corner in the north, to approximately 700 metres to the south with the exposure to wave action reducing along the length of the defence.
- Section D (Shore Fields Caravan Park):** No significant hard defences front the site. Rather, the defences at the site consist of a steeply eroded embankment with some ad-hoc rubble and concrete placed at areas of previous erosion along the site. The crest level of the embankment varies considerably along the length of the defence.

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Caravan sites					

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
Heysham Power Stations	SD 400595	Tidal flooding	Although unlikely to be affected by tidal flooding additional flood protection measures have been installed at the Power Stations to maintain operations in safety.
Heysham Port	SD 400604	Tidal flooding	Some buildings around the port complex may be vulnerable to very high tides in storm conditions.
White Lund Industrial Estate	SD 445625	Tidal Breach	The White Lund Industrial Estate and Business Parks would be at risk from extreme breach flooding.

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
<i>Stanley Road Baptists Church (Plan in preparation)</i>	Stanley Road, Heysham LA3 1UP
Overton Memorial Hall (County Level 1 rest centre capacity 150. See also Community Emergency Plan - building has emergency power)	Middleton Road, Overton LA3 3HB
<i>Sunderland Mission Church (Improvements taking place to make building suitable for emergency centre purposes).</i>	

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
Low lying roads between Heysham, Middleton and Overton	Roads have been impassable during previous flooding incidents e.g. 2017.
Causeway Road between Overton and Sunderland Point	Covered twice daily by all but lowest tides. (See separate emergency plan)

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Individual property flood defences	Sunderland Point Community Group	All properties at risk of tidal flooding	Flood gates and other property defences.

Zone J – Carnforth and Coastal Communities

1. Description of zone

Zone J comprises the Bolton and Slyne, Carnforth, Silverdale and Warton Wards. This area is also covered by the smaller councils of Bolton-le-Sands, Carnforth, Silverdale, Slyne-with-Hest, Warton, Yealand Conyers and Yealand Redmayne. There are community emergency groups covering Carnforth, Slyne-with-Hest and Warton

2. Map of zone

<https://arcg.is/Ojzva0>

3. Recent flood history

Areas of Warton are vulnerable to surface water flooding and this was particularly severe during Storm Desmond in 2015. The area around Gardner Road, Warton has been affected in the past and residents have formed an emergency group and invested in equipment.

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for: Morecambe Bay

The Flood Warning Areas within this zone include:

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
Coastline at Hest Bank	TL23			
	012FWCTL23A Lancashire coastline Hest Bank, around Marine Drive, Coastal Rd and railway line	Marine Drive and Poultry Houses	18 6.7m Hest Bank	
	012FWCTL23B Lancashire Coastline Hest Bank between railway line and Coastal Road	Lancashire coastline at Hest Bank,	9 6.9m Hest Bank	
Coastline at Bolton-le-Sands	TL24			
	012FWCTL24A Lancashire coastline Bolton-le-Sands, around Red Bank Farm, The Shore and	The Shore, Red Bank Farm, Sandside Caravan and Camping	31 7.3m Bolton-le-Sands	

	Railway Line			
	012FWCTL24B Lancashire coastline at Bolton-le-Sands, between Red Bank House and Coastal Road	The Shore, Red Bank Farm and Red Bank House	9 7.6m Bolton-le-Sands	
Coastline at Carnforth	TL27			
	012FWCTL27A Lancashire coastline at Carnforth, around Warton Bridge, Galley Hall and Marsh House Farm	Warton Bridge, Galley Hall and Marsh House Farm	19 6.7m Carnforth	
	012FWCTL27B Lancashire coastline at Carnforth, between Warton Grange Farm, Cotestones Farm and Crag Bank	Warton Grange Farm, Cotestones Farm and Crag Bank	33 6.9m Carnforth	

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location	Additional details
A5105 Coastal Road between Greenacre Park and Hatlex Lane.	
Houses on Gardner Rd, Warton	Community Group has a pump and volunteers
Underneath the railway bridge on Borwick Lane	Road quickly blocks when drains aren't clear. This is main route from village to A6 and M6 Jcn 35
Junction of Sand Lane and Main St in "Town End" area of Warton	This is main route to and from Carnforth.
Carnforth Railway Station subway	Station cannot be used by passengers when this occurs
A6 near southern end of Hest Bank Lane and near to Rosedene	
Manor Road outside the Slyne Londis	
Hanging Green Lane by recreation field and junction of Peacock Lane.	
Bottomdale Rd near to Slyne football ground and corner of Ancliffe Lane.	Flooding in dip makes road to Halton impassable
Hasty Brow Road near to and under the railway bridge.	

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements
Slyne Caravan Park Bottomdale Rd, Slyne	The 'dry' valley fills after prolonged rain and will impede access	SD?		83 static caravans	
Children's Home, Bottomdale Rd					
Croftlands Caravan Park, A6	A6 access can become impassable in heavy rainfall events	SD?		15 touring caravans capacity	

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures
<i>Infrastructure</i>		Tidal flooding	
<i>Infrastructure</i>			
<i>Infrastructure</i>		Prone to flooding, leading to inundation of local sewers	

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Slyne-with-Hest Village Hall (County Level 1 rest centre – See also Community Emergency Plan)	Hanging Green Lane, Hest Bank LA2 6JB
Carnforth Civic Hall (See Community Emergency Plan – building has emergency power)	North Rd, Carnforth LA5 9LJ
Warton Village Hall (See Community Emergency Plan – building has emergency power)	Back Lane, Warton LA5 9QX
Bolton-le-Sands Community Centre (County Level 1 rest centre capacity 200)	Packet Lane, Bolton-le-Sands LA5 8DW
Yealand Village Hall (County Level 1 rest centre capacity 100)	Footeran Lane, Yealand Redmayne LA5 9SU

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
West Coast Main Line	Passes close to shore at Hest Bank and could be vulnerable to extreme tides/storms.
A6 Slyne between Cross Keys and Bay Gateway lights	Becomes impassable during high rainfall events. (2015 & 2018)

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Community volunteers. High viz PPE. Access to other community equipment resources.	Carnforth Community Emergency Group	Carnforth Civic Hall	Carnforth community emergency plan.
Community volunteers. Water pump. Access to other community equipment resources.	Warton Community Emergency Group	Carnforth Civic Hall	Warton community emergency plan.

Zone K – Kellet Communities

1. Description of zone

Zone K comprises the Kellet Ward. This area is also covered by the smaller councils of Borwick, Nether Kellet, Over Kellet and Priest Hutton. There are community emergency groups covering all these parishes.

2. Map of zone

<https://arcg.is/0mH5zH>

3. Recent flood history

Some areas of Borwick and Priest Hutton are vulnerable to flooding

4. Flood Alert and Flood Warning Areas within the zone

This zone is covered by the following Flood Alert area:

Flood alert for: N/A

The Flood Warning Areas within this zone include: N/A

Flood Warning Area Name	Flood Warning Area Code	Official location name	Number of properties within flood warning area and trigger level	Actions additional to Page 16 Alert and Warning checklists
N/A				

5. Rapid Response Catchments within the zone

Location	Watercourse	Additional details
N/A		

6. Surface Water Hotspots within the zone

Location	Additional details
The Narrows, Kirkby Lonsdale Road, Over Kellett	Recent highway works may have improved situation - monitor
Kirkby Lonsdale Road, Over Kellett around Swarthdale Road, Netherbeck Haulage and near the canal	

7. Local Sensitive Sites within the zone

A sensitive site is a premises which is used for an extended period (either resident or full days) of time by individuals who may be vulnerable in an emergency, for example schools, care homes and hospitals.

Site Name and Address	Risk	Location (include Flood Warning Area if relevant)	Lead organisation	Details (Numbers of people etc.)	Arrangements

8. Infrastructure and Facility Hazards within the zone

Infrastructure and Facility Hazards Specific local infrastructure and facility hazards, including both those at risk or those that pose a risk, within

Name of structure	Location (Grid reference)	Hazard and Impacts	Control measures

the defined area. e.g. electricity sub stations, main transport networks, flood defences, pumping stations

9. Emergency Evacuation Assembly Points

The following options have been identified as suitable places for people to safely gather while further assessment is made of the incident. They are not intended for longer term shelter and it may be appropriate to move those assembled to the designated Rest Centres when safe to do so.

Name of site	Location
Borwick & Priest Hutton Memorial Hall (See Community Emergency Plan - building has emergency power)	Borwick Lane, Carnforth LA6 1JP
Nether Kellet Village Hall (See Community Emergency Plan)	Main Rd, Nether Kellet LA6 1EZ
Over Kellet Village Hall (See Community Emergency Plan – building has emergency power)	Church Bank, Over Kellet LA6 1DT

10. Vulnerable transport routes

Information on affected main roads and their bridges, railway lines, canals.

Note: Access and egress routes, RVPs and FCP will be a dynamic decision made by emergency services depending on circumstances.

Name of transport route and location	Details of vulnerability in flood incidents
See entries at Pt6.	

11. Responsibilities

Specific local responsibilities of statutory agencies within the defined zone. E.g. installing flood boards, attending site, operating flood defences

Responding Agency/Body/Group	Action to be taken

12. Additional response equipment and personnel

Specific local Response Equipment and Personnel to support the response within the defined area. e.g. community groups carrying out actions as part of a community flood plan

Type (Equipment/Personnel/Other)	Responding organisation	Deployment location	Details of resource provided
Community volunteers, local emergency centre	Borwick & Priest Hutton Community Emergency Group	Borwick & Priest Hutton Memorial Hall	
Community volunteers and local emergency centre	Nether Kellet Community Emergency Group	Nether Kellet Village Hall	
Community volunteers and local emergency centre	Over Kellet Community Emergency Group	Over Kellet Village Hall	



Appendix C: LFRS Rapid Response catchments –

LFRS restricted documents