

Calderdale Catchment Plan

Draft actions from the Technical Solutions Working Group

Session 1 – 16 July 2016

Overall contribution of different interventions

Participants were asked:

Are there actions that can be taken within each of the following themes that can reduce flood risk, and so will have a place within the Catchment Plan?

Theme	Yes	Probably	Possibly	Unlikely	No
Natural Flood Management	15	3			
Traditional flood defences e.g. walls, weirs	18				
Dredging / channel clearance	2	7	7	2	
Use or reservoirs / canals	9	5	5		
Land drainage / use of historic infrastructure	6	5	5	1	
Urban drainage	8	8	1		

The 16 July session worked on the first three of these themes. The actions drafted by the Working Group are set out below. The group agreed to re-convene on 6 August to address the remaining three themes.

THEME: NATURAL FLOOD MANAGEMENT

DRAFT ACTION:

1. Woodland management – beech removal to encourage understory and minimise erosion risk. Balsam removal (balsam out competes perennials leaving bare ground which then erodes)

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Cloughs	Landowners, woodland management contractors, SOURCE partnership		Now	Visual evidence of bare ground creating an erosion risk	-	How? Could we develop an incentive for landowners? Give woodlands over to community management

DRAFT ACTION:

2. Avoid large areas of non-permeable surfaces. Address the planning process that does not enforce this

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
-	-		-	-	-	Unpack this action in the SUDS theme. Not just in towns – applies to new farm developments also

DRAFT ACTION:**3. Co-ordinate schemes across the valley / catchment. Consider Working Group and Governance**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Calderdale wide	EA / CMBC	Local organisations	Now	-	No	Could this be the new Calderdale Flood Partnership NFM group? Who would be on this? Chaired by Yorkshire Water? Inform the Terms of Reference for this group

DRAFT ACTION:**4. Slow the flow from the moors**

- tap into local knowledge of wider catchment
- key areas need to be investigated
- sphagnum inoculation
- re-vegetation of bare peat

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Moors and upper catchments	Calder Catchment Flood Studies Group, The SOURCE (outside SAC), Moors for the Future (SAC)	EA, Yorkshire Water, NE, CMBC, Landowners, Wind Farm Companies, National Trust, Commoners, Tenant Farmers, North Pennine Peatland Restoration, Pickering Moorland Association	Soon	Via surveys ongoing and Pickering Case Study	Yes	Moorlife £16m (5 years) New plan being produced at end of this year Deliver Moorlife 2020 (new action), monitoring to demonstrate flood risk and accumulative flood reduction Develop a plan for the non SAC uplands, ensure moorland restoration of wind farms

DRAFT ACTION:**5. Tree planting**

- understand what species to plan to take up the most water (Treesponsibility)
- understand how we manage existing woodlands to increase water take up, interception, erosion control
- look for suitable areas for tree planting
- create better quality impact on runoff

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment wide	Treesponsibility, landowners, EA, CMBC	Yorkshire Water, NE, National Trust, Moors for the Future, White Rose Forest Woodland Trust, local community volunteers	Now and ongoing	SOURCE partnership, various sources, Moors for the Future, Pontbren	To identify where to plant	Need to think big. Need more money! Challenge GIA funding calculator to fund NFM

DRAFT ACTION:**6. Erosion control**

- fascines (and woodland management – see other action 1)
- landslip control – removal of detrimental deposit build ups and minimise sedimentation into the rivers

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment wide	SOURCE partnership	-	Now	-	-	Linked to land drainage and dredging also

DRAFT ACTION:**7. Managing the moors (inc. common land)**

- re-incentivise landowners to maintain their land
- educating landowners on why and what to maintain
- identify where streams have been diverted
- agree a burning cycle

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Moors	CMBC / EA / Landowners / NE / National Trust	Yorkshire Water, NFU, Defra	Now	SOURCE partnership, also self evident	Not sure	Large scale engagement programme Eco-system services (Natural Capital) provision Much of this is already in place

DRAFT ACTION:**8. Sphagnum Moss and Grouse Moors**

- Single most important action to regenerate blanket bog environment
- Massive FRM opportunity over 650 sq. km of this SAC

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
All SAC	Moors for the Future, Moorlife 2020	Landowners, NE	Now	See Moors for the Future	Yes	What is the action? Next step is to work this up Very long term

DRAFT ACTION:**9. Modelling to demonstrate benefits**

- monitoring of NFM schemes, natural experiments, to validate models
- modelling to identify NFM sites
- modelling framework to simplify future work
- establish cost base for delivery of NFM

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment wide	EA, CMBC	-	Now	This is an evidence generator	YES	Benefits are: Sustainable funding strategy Lobbying for barriers to be removed Build capacity and relationships Build communication

DRAFT ACTION:**10. Design a business model which is able to pay for Eco System Services**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment wide	Natural England	All organisations and landowners	Now	Some – peatland code	YES	This is DEFRA's Natural Capital programme to develop a valuation tool. Action is develop a local approach to identifying value

DRAFT ACTION:

11. Decrease the use of grips

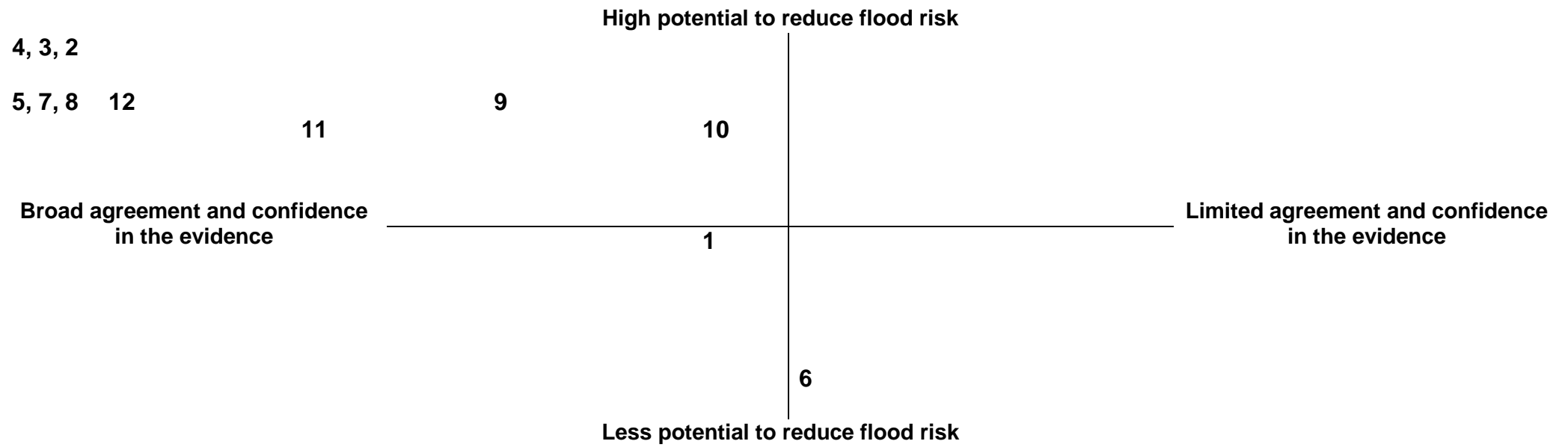
WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
-	-	-	-	-	-	Good recommendation but needs turning into an action

DRAFT ACTION:

12. Attenuation ponds

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
-	-	-	-	-	-	Covered by land drainage actions?

NATURAL FLOOD MANAGEMENT PRIORITISATION:



THEME: LAND DRAINAGE / USE OF HISTORIC INFRASTRUCTURE

DRAFT ACTION:

1. Field drains to be linked to attenuation rather than going straight down into the rivers (Rural SUDS)

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment wide	SOURCE partnership, landowners, EA, CMBC	NE	Now	Soil maps	Yes	Could be old mill ponds or new ponds Is there potential for the development of hydro schemes within this? How do you do this? Needs an overall strategy for land drainage (EA) and/or draw up key principles of good land management to guide Upper Calder landowners

DRAFT ACTION:

2. Develop a communication plan to raise awareness, reporting, developing understanding of flood risk

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Calderdale wide	CMBC / EA	Stakeholders who deliver the plan	Soon	-	-	This was covered in the Community Resilience actions

DRAFT ACTION:**3. Develop catchment sensitive farming practices and advice for the Uplands (Calder Catchment)**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Catchment level	EA / NE	Landowners	Soon	Other Catchment Sensitive Farming practice across the country	Not sure	Previous consideration by DEFRA for CSF in Calder Valley (pollution, water quality) Possible funding through LEADER?

DRAFT ACTION:**4. Improve practice in new land drainage – horses, sheep, cattle - incentives and education (in absence of enforcement)**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Agricultural landowners	CMBC / NFU	Installation Engineers	Soon	Generating evidence	Yes	-

DRAFT ACTION:**5. Develop good practice schemes that could be 'off the shelf' for landowners to use**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Calderdale wide	Universities, EA, NFU, CMBC, Catchment Partnership	Installation Engineers	Later	Developing and determining the earlier actions	Yes	-

DRAFT ACTION:**6. Assess the contribution and issues caused by Field Boundaries especially dry stone walls and positioning of gates**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
In bye land and grazing land on the upper catchment prioritised by cost benefit	CMBC / EA	NFU, Landowners, National Trust, big landlords	Soon	Evidence exists for leaky dams which are basically what dry stone walls are	Yes	-

DRAFT ACTION:**7. Build the evidence base to understand drainage characteristics (tralling schemes)**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Upper Calder	EA / Universities	CMBC	Soon	Generating evidence	Yes	Needs clarifying what it is that we want to understand e.g. capacity for storage and conveyance, gather info from landowners so you can also discuss future management

DRAFT ACTION:

8. Map historic / heritage infrastructure e.g. dams, impoundments, goits, mill ponds etc. to determine opportunities to store and slow water flow

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Calderdale wide	EA	Industrial museums, historic societies, landowners, ATC	Now	Generating evidence	Yes	-

DRAFT ACTION:

9. Do not drain the moorlands – block the grips to encourage sphagnum / reduce erosion and siltation and promote habitats

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Hebden Water catchment – Walshaw Moor, Garple and Widdop Moor, Noah Dale, Langfield Common, Wind Farm areas including Todmorden Moor	Moors for the Future, SOURCE partnership, NE	Yorkshire Water, United Utilities, Wind Farm companies, Walshaw Moor Estate	2017 and ongoing	Water at Leeds Studies / Ember report / Slowing the Flow / Nick Odain modelling study / Making Space for Water	Yes	-

DRAFT ACTION:**10. Map opportunities for restoration / roughening of river channels upstream of areas at risk**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Headwaters and main channel	EA	Rivers Trusts, Wildlife Trust, Conservation orgs, Flood Science Studies Group	Soon	Generally – yes, locally, not sure	Yes	Aidan Foley is doing Blake Dean Study

DRAFT ACTION:**11. Reference base for who owns water courses in whole catchment and outside of EA's current responsibility**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
-	-	-	-	-	-	-

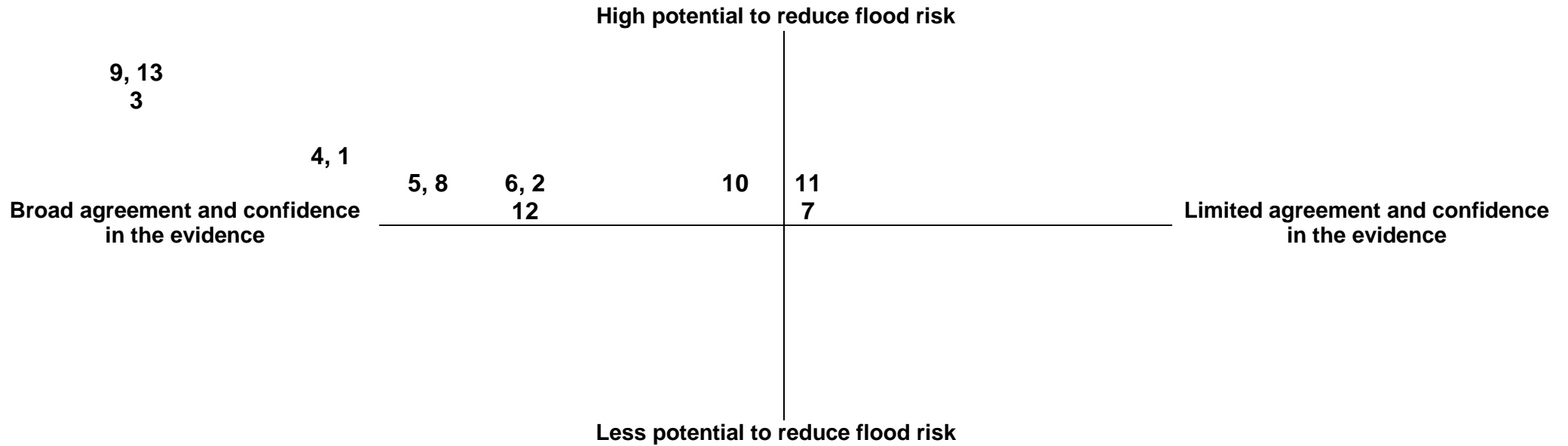
DRAFT ACTION:**12. Physical infrastructure maintenance – needs thinking about and resourcing at design stage otherwise initial investment will possibly be wasted**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
All designed infrastructure	AE / CMBC / landowners	SOURCE partnership, implementation agencies	Now	Evidence will be generated	Not sure	Is this about influencing the planning process? Also part of maintenance workshop

DRAFT ACTION:**13. Link drainage from roads and paths to attenuation systems**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Hillside roads and paths	CMBC CROWS (footpath team), Green Streets (LEP, YWLNP)	Farmers	Soon	-	No	How do you action this? A feasibility study? Using agri – environment schemes. Use short-term opportunities when landowners renew schemes. Long-term aspect of changing the current regime. Issue of Midgely Road and Hill Bank Lane / Scout Road, Myholmroyd flooding in rainfall

LAND DRAINAGE / USE OF HISTORIC INFRASTRUCTURE PRIORITISATION:



THEME: DREDGING / CHANNEL CLEARANCE

DRAFT ACTION:

1. **Transparent review of previous studies and budget / policy context which have informed the EA approach to dredging / gravel removal. Consider if further evidence / studies are needed. QUICK ACTION to potentially lead to gravel removal before winter on the Callis Bridge to Brierley Playing Field Section**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
PRIORITY = Callis Bridge to Brierley Playing Fields section	EA	CMBC / Experts – EA consultants, UCV Flood Group / Calder Flood Studies Group	Now	Multiple studies from different organisations	Yes / Not sure	Talk to Project Managers for Mytholmroyd and Hebden Bridge to ensure link with gravel removal being considered as part of these schemes are made Link to sediment transport study in action 6 Need to do study first before taking potentially damaging action Better communicate the outputs of this work.

DRAFT ACTION:

2. Riparian enforcement to keep channels clear of debris that can wash down and cause blockages. Remind CBMC there is a duty to enforce. Explore how to facilitate this using river stewardship / other brokers / CBMC staff

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Ordinary watercourses	CMBC	Landowners, other land agents or brokers / Yorkshire Water / National Trust	Now	-	-	This is an ongoing process and commitment

DRAFT ACTION:

3. Remove vegetation from the channel this summer from known hotspots

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Identified sites	EA	Local community organisations	Now	Yes, 2013 study	No	Avril South (EA) to get list of known hotspots Slow the Flow to identify other hotspots in tributaries and confluences

DRAFT ACTION:**4. Source of Calder to Aire confluence – management to lead to eradication of invasive plant species**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
All catchment to prevent re-colonisation	EA	Riparian landowners, other landowners, community organisations, Calder Futures, Treesresponsibility	Now	-	-	

DRAFT ACTION:**5. Source of Calder to Aire confluence – investigate removal of silt as a growing medium for invasive plants to prevent re-colonisation**

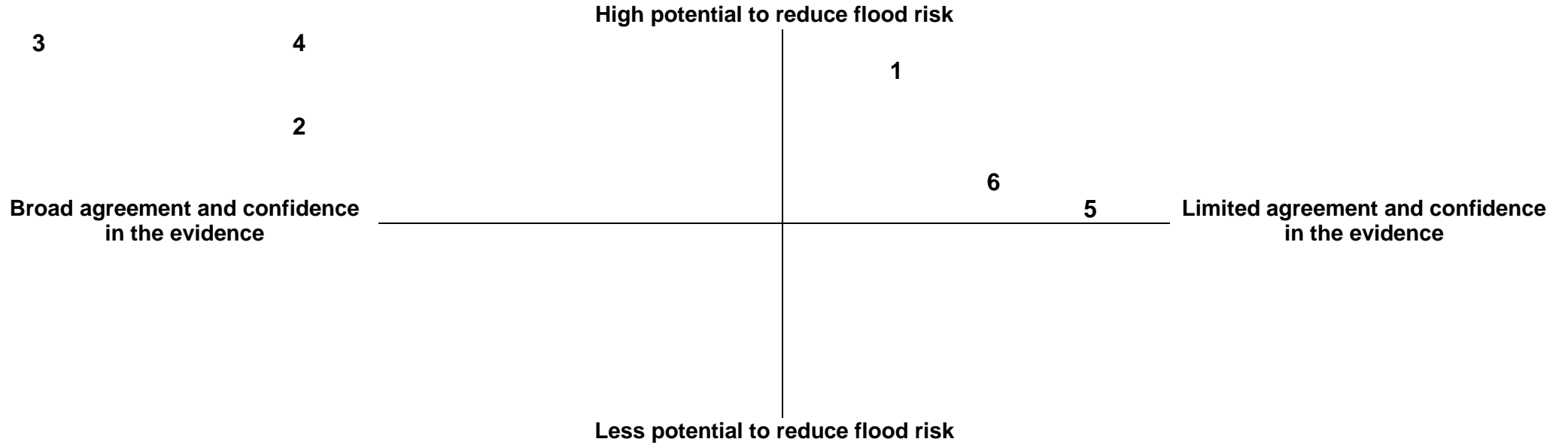
WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
All catchment to prevent re-colonisation	EA	Riparian landowners, other landowners, community organisations, Calder Futures, Treesresponsibility	Now	-	-	

DRAFT ACTION:

6. A study to be carried out into the effects of canalisation on the sediment regime of the river and tributaries to include analysis of rate of flow in relation to sediment removal and the impact on habitats of changes to sediment regime

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Wider catchment but main river central	EA	Universities, CRT	Soon	Yes – Lanes sediment balance theory (1952) and fluvial geomorphology understanding since that time	Yes	Expand to the Rochdale Canal Study to show id un-canalising in specific areas would be beneficial Could do this for Hebden Water Bit confused by reference to Canal

DREDGING / CHANNEL CLEARANCE PRIORITISATION:



Notes re Urban Drainage for August 6th session:

- SUDS and influence of urban drainage on new developments (Town Planning legislation)
- Flow of White Lee Clough into Midgley Road / River Calder
- Flow from Scout Road and Hall Bank Lane – where is this supposed to go?

THEME: USE OF RESERVOIRS / CANALS

DRAFT ACTION: 1

CMBC to return to its statutory responsibility to maintain and rehabilitate all culverts, drains that are under and next to the canals. (This has been added by another group)

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Not stated	CMBC		Soon	-	No	Returning responsibility would have questionable effectiveness. (i.e. would a change of responsibility improve or reduce actions?)

DRAFT ACTION: 3

Identify ways to increase capacity of the canal and ensure the overspill is linked to an appropriate flood water management facility such as using automatic lock paddles to release water when an appropriate level is reached

Prioritise and schedule work and model works to prove benefits if necessary

Assess capacity of canals to identify if there is potential to increase capacity.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Affected areas such as stubbing wharfe	CRT	Adjacent building owners	Now	Modelling needed	Yes	1a) Xxx out of boats 1b) Increase overflows 1c) CRT will not do this 2a) Resource return to pre-privatisation customary practices to let canal flow downstream not overflow in winter.

DRAFT ACTION: 4

Utilise the ongoing Environmental Audit Commission consultation for Water management to influence the way that Reservoirs are managed.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Nationally	Central Government	EA, Defra	Now	Don't know	Not sure	1) Defra also involved, and when happening – now? 2) 2) Not an action we just need to be aware of its existence and findings

DRAFT ACTION: 5

- 1. When planning for the use of reservoirs and canals take into consideration the use of Moorland restoration to promote Sphagnum in order to slow the flow of waters into the reservoirs.**
- 2. Encourage Walshall estate that covers 1/3 of the catchment to use Spagnum and other measures to slow the flow of water into reservoir.**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Upper Catchment	Moors for the future, Treesresponsibility	CMBC, YW, UU, landowners	Now	Evidence exists	Yes	1 –xxx YW to understand moor holding to effectively keep the resource. Consult with landowners (Walshall) and YW and United utilities. 2 – Reincorporate major moorland landowners and farmers with in local Governance voice (later commented on by originating group “what does this mean”?)

DRAFT ACTION: 6

Assess current capacity of canals as a pathway to take water down the valley. Would need monitoring network installed along the canal. Identify ways to increase capacity e.g. dredging/ bank stabilisation, increase bywashes (at locks), towpath restoration. Barriers at the back of the towpath should be installed to take overspill down the valley to an appropriate water storage facility. (Will require modelling to identify water capacity areas)

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
	CRT	EA, CMBC	Soon	These actions will provide evidence	Yes	Could dredge canal to xxxx xxx dredge to design depth (CRT) 2) Resource CRT to return to pre-privatisation maintenance schedules.

DRAFT ACTION: 7

Develop winter 16 capacity in reservoirs so that they are kept no more than 75% full.

- a) What is the highest recorded rainfall we have had
- b) What is the longest period of rainfall we have had
- c) Find out what level YW are optimizing reservoir usage at
- d) Find out against weather forecast what levels are expected and report on a weekly (or daily if level above 90% full)
- e) Implement level monitors within the next month for reservoirs and pump data into a web site at YW
- f) Push Human rights issue to encourage YW to publish relevant information on the levels of reservoirs

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Reservoirs across Calderdale	YW	CMBC, EA, Flood Study science group	Soon continuing into later	Unknown	Yes	Transparency of information to community and needs a workshop with the community to share ideas 75% causes bank erosions, 500cm max. Return to pre-privatization customary practice of maintaining 500cm spare capacity throughout autumn and late spring. Reintroduce mothballed reservoirs – now and does not need evidence to support benefit.

DRAFT ACTION: 8

Is there a moral argument for YWS not using out xxx to subsidise other parts of Yorkshire – should we make this argument

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
						Half a metre is a tiny amount and won't affect grid. Not an action

DRAFT ACTION: 9 Rivers being fed by Reservoir

Implement level monitors on rivers to record when and if we are opening reservoir outlets

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
YW/ EA catchment	YW/ EA	Community	Now	Yes generated by this action	Yes	Benefit ongoing understanding. See NO 1 comments

DRAFT ACTION: 10

**Statement for YW on their responsibilities to catchment communities and need it on a website.
Statement / policy (ofwat) to instruct YW when to drain and what is appropriate level to maintain
If no response from ofwat, go to ombudsman and ensure resources are available to build the case.**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES

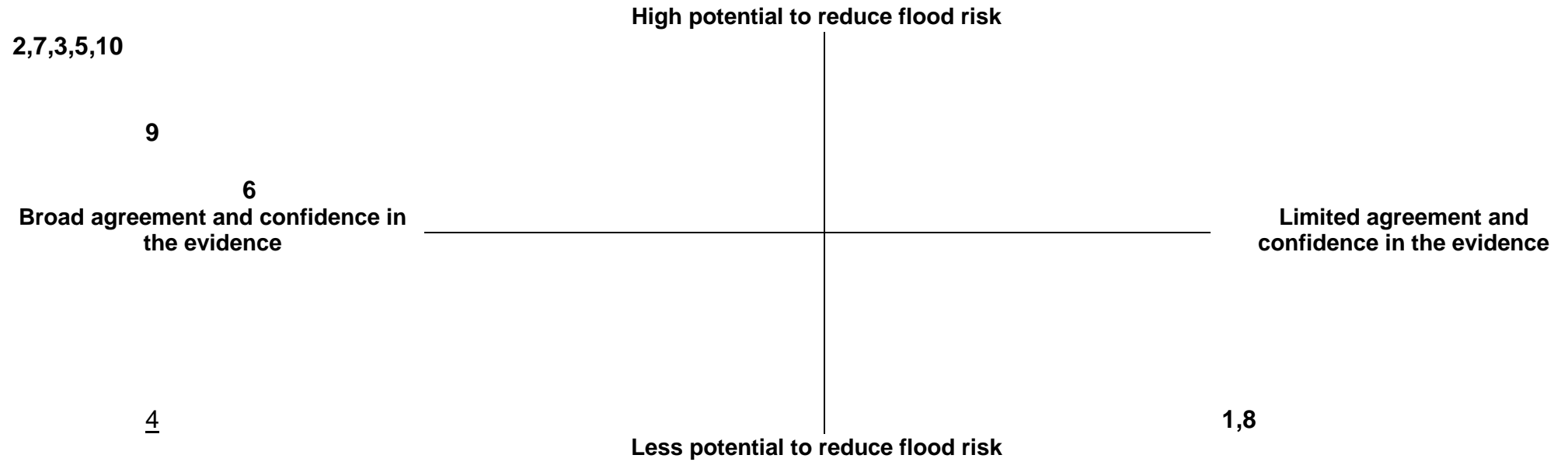
	YW	Ofwat, Ombudsman	Now through to later	Yes – lots	Yes	Legislation already exists around drought. Lobby DEFRA to pressurize for an amendment to include flood. 2) Statutory requirements need changing to allow flood protection as equal priority to water supply and water quality.
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DRAFT ACTION: 11

Use Canals as a flood defense. Make statutory changes to allow flooding as priority rather than only water quality and water supply.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Parliament	Ministers	YW, CRT	Soon continuing to later		Yes	

Reservoir and canal PRIORITISATION:



THEME: Traditional Flood Defenses

DRAFT ACTION: 1

Potential wetland sites could be created and used for water storage. These could be linked to walls and excess water diverted to the wetland sites.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES

DRAFT ACTION: 2

Implement new leaky weirs instead of impermeable weirs.

- 1) Assess where they could go and if any already exist
- 2) Understand where weirs are being removed
- 3) Identify where weirs built for mills need to be reinstated and negotiate on the use of weirs with the rivers trust

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Tributaries e.g cragg brook (black hole)	Flood Science study group	Rivers trust	Now and ongoing into soon	Need to identify and understand how weirs are effective	Not sure	This could be expensive and controversial – need a fish passage but has hydro potential

DRAFT ACTION: 3 Resilience

Use of inflatable flood barriers to be assessed and implemented where appropriate. Need advice on where these are best used.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Where flooding is imminent	EA/ Community flood groups	Flood Science study group / wardens, CMBC	Now	Yes	Not sure	

DRAFT ACTION: 4

Dry stone walls to be constructed to allow soak-aways.

- A) To identify funding source,
- B) Identify governing body
- C) Establish build quality / guidance
- D) Placement of gates location need advice / guidance.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Calder Valley Wide	To be established possibly CMBC	NFU, CLA	Soon continuing to later	Case Studies	Yes	Duplicated NFM

DRAFT ACTION: 5

Consider the protection within public realm with design.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Town centres and urban renewal sites	Community and local area participation	Community , EA,	Now		Yes	Prioritising main channel pinch points before aesthetics Too ambiguous and no points made.

DRAFT Action 6

Ongoing evaluation after an initial scheme completed to update and amend the scheme over 25 year period and beyond..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Ongoing	EA plus ongoing information	CMBC community	Now ongoing to later	Changes in climate	Yes	Ongoing

DRAFT ACTION: 7

Must be seen as part of a total catchment management rather than in isolation.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Throughout the area		Community and CMBC	Now		yes	Informed by estimates of scale comparative of different actions throughout catchment. Survey and record what is there now , what state it is in, what needs repair – prioritise repairs and carry them out

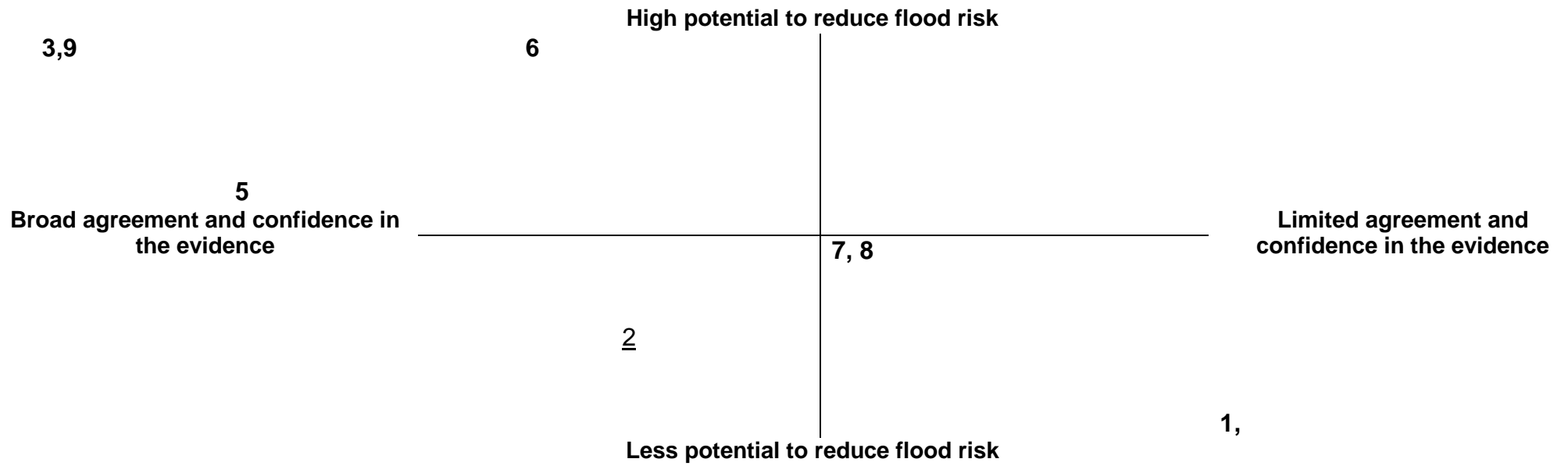
DRAFT ACTION: 8**Establish representative local knowledge and governance to prioritise plans and actions.**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
	Local flood governance group – elected / nominated	YW, LA local groups, source	Soon	Yes used to be undertaken by WY, CC but devolution has left vacuum – use of local contractors.	No	

DRAFT ACTION: 9**Walls to have maximum heights and type where can this be implemented and accepted. Engineer flood defenses.**

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Throughout the valley	EA	CMBC	Now through to later	Existing infrastructure	Yes	Remove sediment before building higher walls. Specific to river walls? Sidenote: General feeling of public is that CMBC is not listening and shunning public input and opinion.

Traditional Defences PRIORITISATION:



THEME: Urban Drainage

DRAFT ACTION: 1

Grants to residents / business for 1 way valves in waste water..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Urban areas	CMBC	Charities	Now	Sewerage entering properties	Yes	Toilets and drain have one way valves

DRAFT ACTION: 2

More one way valves on surface ground water..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
River system	EA	LA local knowledge	Now	Working in some places in Mytholmroyd flood wardens verification	No	Toilets and drain have one way valves

DRAFT ACTION: 3

Resource and enforce maintenance of existing drainage system under its authority (CMBC) roads highways lanes ditches road gullies river channels one way valves..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Urban areas	CMBC	EA	Soon			Link to local storage and attenuation schemes especially in flood conditions – should start now based on a prioritised plan.

DRAFT ACTION: 4

Reinstate planning requirement on surface water tanks on new builds

	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
						Enforce by LA SUDS legislation

DRAFT ACTION: 5

Continuing collaboration between EA LA and local knowledge.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
	EA	LA, local groups	Now		No	Ensure continuation

DRAFT ACTION: 6

Ducts for escape route for excess water on streets at surface..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
River bank	CMBC	EA	Soon	Costings	Not sure	Area specific action e.g water trapped on the road turning circle in Hebden water near stubbing pub.

DRAFT ACTION: 7

Resource and enforce maintenance by EA of main river and tributaries and channels.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Main river and tributaries	EA	CMBC	Now	Flooding	Yes	Publicise where happening and explain why not happening in other places. Identify prioritise scheme where maintenance required.

DRAFT ACTION: 8

Retrofit of suds e.g. rain gardens, green roofs, raise residents awareness – domestic. See save some space for a rainy day report section 2.2.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME	SUPPORTING EVIDENCE	FURTHER	NOTES
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			FRAME		EVIDENCE NEEDED?	
Urban areas	The source		Now	Yes report		Incentive payment? Report and research. Look at subsidizing residents to encourage them to use and take responsibility for environmental issues

DRAFT ACTION:9

CMBC housing plan, new builds must have permeable hard landscaping to reduce and prevent surface water run off (especially new builds on green field locations..

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
Valley wide	CMBC	House building developers	Soon			Role of soft landscape, principle of reducing green field run off, how determined site by site. Policing via planning conditions and covenants

DRAFT ACTION: 10

Long term maintenance of urban drainage systems e.g. new builds, who responsible for existing suds after builder finished. Pass to residents.

WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
L>A>	LA, planning requirement	Residents	At planning consent stage			e.g. annual fee for owners for management of new build schemes SUDS features facilities. Bring back FWM2010 scheme 3 suds approval body Single authority for drainage management based around YW.

DRAFT ACTION: 11

Scarifying land to improve drainage						
WHERE	PROPOSED LEAD	OTHERS INVOLVED	TIME FRAME	SUPPORTING EVIDENCE	FURTHER EVIDENCE NEEDED?	NOTES
	NFU farmers	NE,RPA to fund	Soon	Soil maps show most upper valley soils are impermeable , presentation to flood group by EGG consultants		Not drainage this is /soakaway.

Traditional Defences PRIORITISATION:



High potential to reduce flood risk

7,2,3

5,6

1

Broad agreement and confidence in the evidence

Limited agreement and confidence in the evidence

9,10,4,8

Less potential to reduce flood risk

11,