

Consultee Name / organisation	Comments	Response
Charlton Parish Council	On behalf of Charlton Parish Council I would like to make the following comments on the strategy paper, I will admit that I have not read every single word so apologise if these points are already covered in the document. In making these I am aware that we are a village where there has been a history of flooding and where those residents who are likely to be impacted continue to be extremely worried. In our particular circumstances the river, the Merry Brook, is designated as a main river through the Village to its outlet into the river Avon. Above the village it is designated as an ordinary watercourse.	
Charlton Parish Council	SUDs – to help minimise flood risk. When new developments are being started it should be policy that the Suds scheme, and particularly the attenuation ponds or equivalent, is put in place prior to top soil being removed on the site to be developed. This will avoid increasing flood risk whilst the development is progressing.	Noted. Chapter 7 Flood Risk Management considers SuDs in details. No further amends required.
Charlton Parish Council	Where flooding occurs on a river such as ours we need a whole river strategy for reducing flood risk. For us in my view this would be driven by the Environment Agency as they are responsible for the river where the flooding to the majority of properties occurs. We need to get away from the situation where one party says the other is responsible because they only deal with that part of the river. All parties would need to buy into this whole river strategy including WCC Highways.	Noted. WCC are currently working with a range of partners including Environment Agency and Severn Trent to develop whole catchment management approaches. Chapters 7 and 9 consider this. No further action required.
Charlton Parish Council	Rapid Response Catchments – I cannot see any mention of these in the document. They are defined as:	Noted. The document does not currently refer to Rapid Response

	<p>Rapid response catchments (RRC) contain rivers and streams (including smaller tributaries and ordinary watercourses) that we expect to react rapidly to extreme rainfall, resulting in extreme flash flooding. Extreme flash flooding is where a river or stream reacts very rapidly to rainfall, and generates dangerous flood depths and high velocities of water that pose an extreme threat to life.</p> <p>As far as I am aware in Worcestershire the following rivers are categorised as Rapid Response Catchments:</p> <ol style="list-style-type: none"> I. Dick Brook – High risk II. Badsey Brook – Very high risk III. Merry Brook – Very high risk <p>I believe the strategy should include a statement that plans are put in place to cover these risk situations when heavy rain occurs. In addition that schemes are put in place to reduce the flood risk on these rivers/watercourses.</p>	<p>Catchments, or any particular approach to them. Chapter 3 will be amended to specifically reference these catchments.</p>
<p>Charlton Parish Council</p>	<p>The EA and Inland water boards have permissive powers to require land owners to undertake work to keep watercourses clear and maintain the flow of water. Where the EA are concerned for those who decline to do this seems to be little they can do to insist this is done as they do not have the manpower for this work. They need to be able to delegate this power to others to enable work to be undertaken. I appreciate that this is probably a national issue and one to lobby the Government on</p>	<p>Noted. This is beyond the scope of this document and would require legislative changes.</p>
<p>Resident, Stoke Prior, Bromsgrove</p>	<p>With regard to the Local Flood Risk Management Strategy, in 2013 we experienced a serious flooding risk from surface water drains outside our property. The water reached our front door and was surcharging from the drains. At the time Bromsgrove town centre also experienced serious flooding. We considered that:-</p> <ol style="list-style-type: none"> a) The flooding was due to extra pressure put onto inadequate drainage systems by the building of new housing on John Corbett Way by BDHT. b) Our letter to Bromsgrove District Council was ignored, however BDHT did respond. It appears that the drainage pipe connection leads to and appears to end in a field and passes under the railway line. 	<p>Noted. A surface water management plan is being prepared for Bromsgrove in response to flooding issues in the town centre. This will include an action plan setting out projects and priorities for the</p>

	<p>c) Severn Trent Water have ascertained that this pipe has collapsed and therefore needed repair which we believe is still outstanding. (Severn Trent Water job ref: 2001319935 refers). Recent queries with BDHT (who have been helpful in their efforts to assist) would indicate no responses from either Bromsgrove District Council or Network Rail to their own queries regarding this.</p> <p>Obviously with changing weather conditions we are concerned that the drainage outlet pipe which was jettted out in 2013 will no doubt build up to a blockage again at some point putting our property at risk.</p> <p>Surface water drainage in Shaw Lane and Stoke Prior is very poor at best and with planning permission granted for several hundred more houses on the Westonhall Road site this really needs addressing.</p>	<p>town.</p> <p>This proposal is outside of the scope of the LFRMS. However, comments on the application from North Worcestershire Water Management require a drainage strategy and SuDs proposals to be submitted. No further action required.</p>
Suckley Parish Council	<p>The general view of the Council was that although the parish had seen some flooding, it had not been as severe as in 2007. However, the main point they wish the County Council to take into account is - not to build on flood plains.</p>	<p>Noted. The role of planning and development is discussed in chapter 7 and 9. No further action required.</p>
Resident, Bromsgrove	<p>I have recently read an article in the Bromsgrove Advertiser about flooding in Bromsgrove which shows a picture of Stoke Prior which has suffered badly in recent years.</p> <p>I fell that upstream catchment management should definitely be utilised wherever possible as moving water downstream is only likely to cause problems elsewhere.</p> <p>I would like to suggest that consideration be given to creating a flood plain on some wasteland which I believe to be a former car park to the Garringtons factory. This land is at the bottom right of the Breme Park housing estate and follows the railway line heading towards Fish House Lane. It is just before the East Worcestershire Water Works Depot</p> <p>The land runs alongside a natural stream, slopes down towards the stream and away from the railway</p>	<p>Noted</p> <p>This issue is too detailed for the LFRMS . No further action required. The issue will be referred to the Bromsgrove and</p>

	<p>line. Because of this I think it would make an ideal water storage area as on overspill of water could be taken from the stream preventing it all heading towards Stoke Prior and beyond. Some rough tarmac would need to be removed and some digging out would be required but the natural lie of the land would also work to an advantage,</p> <p>Perhaps flooding on the Stoke Road by Morrison could also be helped by draining water from the roadway via the stream to this area.</p> <p>If this land could not be made available then perhaps a similar flood water storage area could be created at the Water Works depot.</p>	Surface Water Management Plans for investigation.
Coeval	<p>Further to your recent article in the Redditch advertiser (article attached), I would like to put forward our companies potential services regards our flood warning system, I have attached information re this and also the below link to our website for you further consideration.</p> <p>http://www.coeval.uk.com/product/flood-warning-system/</p>	<p>Noted</p> <p>No further action required.</p>
Highways England	<p>COUNTY COUNCIL - LOCAL FLOOD RISK MANAGEMENT STRATEGY CONSULTATION</p> <p>Thank you for your consultation dated 7 December 2015 for the above referenced consultation. HIGHWAYS ENGLAND (“we”) has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN).</p> <p>The SRN is a critical national asset and as such works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.</p> <p>We have reviewed the consultation and acknowledge the document correctly makes reference to Highways England as the highway authority responsible for the SRN in Worcestershire. We have no further comments to make as we are satisfied there is no significant impact to the SRN.</p>	<p>Noted.</p> <p>No further action required.</p>
Worcestershire Acute Hospitals NHS Trust	<p>Further to your email of 7/12/15 below relating to the Worcestershire Local Flood Risk Management Strategy 2015-2021 consultation exercise, I can confirm on behalf of the Worcestershire Acute Hospitals NHS Trust, that whilst we do not have any specific comments on points of detail, the Trust does support the general flood management and partnership working approach outlined in the document. In this connection the Trust Emergency Preparedness Manager is of course a member of the West Mercia Local</p>	Noted. No further action required.

	Resilience Forum, along with his counterpart from the local Worcestershire Health and Care Trust	
Resident, Bromsgrove	I believe that you want comments from the public. I just want to say that I very much support the idea of planting many more trees in strategic places to reduce flooding risk downstream	Noted. This approach is included in the strategy as something to be promoted and included where appropriate in chapter 10. No further action required.
H&W Earth Heritage Trust	<p>I am writing on behalf of Herefordshire & Worcestershire Earth Heritage Trust (EHT). Information about the flood risk consultation was forwarded to us via the Local Nature Partnership (LNP) and one of our trustees, Prof Ian Fairchild, Professor of Geosystems at the University of Birmingham, has now considered the content. His comments are as follows:</p> <p>I have looked through the Strategy document and found it to be quite comprehensive, appropriate and forward-looking. I struggled to think of anything particularly relevant from the EHT point of view that needed emphasis or adjustment. Historical and archaeological assets have been catalogued in terms of risks to them from flooding or roles that they could play in alleviating flooding. There may be a risk that some designated geological sites might likewise be damaged (e.g. by erosion) during a flood event, but this seems to me to be marginal.</p> <p>I would simply add that the planning department at the county council does have a recent update of all the designated geological sites in the county (written lists and GIS format), so it should be possible for you to compile a list / map of geological sites that coincide with flood risk areas. If you need EHT to check this list if it is compiled, do let me know.</p>	Noted. Comment of support, no further action required.
	Hi, I have read your flood risk strategy and am a little concerned that there is no mention in it of the Multi Agency Flood Plan put together for Pershore. This involves the Town, District and County Councils	Noted. This plan is not

<p>Pershore Town Council</p>	<p>as well as the EA and Severn Trent. It is a vital part of our flood defences and involves the monitoring of the surface water pond and calling for pumps if the river is up and the water is unable to get away through the flap valves.</p> <p>We have had to put the plan into action on at least 2 occasions in the past 5 years since our flood defences were constructed.</p> <p>I have tried to contact you by phone but to no avail. If you could contact me I would happy to explain</p>	<p>referenced within the LFRMS, but will can be referenced within the revised plan as an example of good practice and partnership working.</p>
<p>Redditch Resident.</p>	<p>With reference to your letter dated 8 Dec. 2015</p> <p>Comments with particular reference to: "The Council, as Lead Local Flood Authority, has a duty to manage flood risk from surface water, groundwater and ordinary watercourses across the county"</p> <p>* Generally there is far too much surface water on minor rural roads/lanes during wet weather. Especially narrow country lanes. The highway surface edges often have pools/large puddles of water and erosion occurs.</p> <p>Roadside ditches adjacent to field hedges - the verges - are often not maintained - like they were <u>many</u> decades ago.</p> <p>If the landowners (eg. the farmer) is responsible to keep the ditches/verges clear, then it really appears that the County Council doesn't bother with enforcement.</p> <p>As far as I'm aware many decades ago the County Council employed many, perhaps hundreds of <i>lengthsmen</i> whose job was to maintain the sides of all roads. It's very rare to see a lengthsmen now.</p> <p>Several years ago I raised this issue of very poorly maintained country roads/lanes at two different Highways Forums, unfortunately the issue was not considered a priority.</p>	<p>Noted.</p> <p>Worcestershire has spent £14million on capital projects for flooding and drainage. . Flood Risk Management and Highway Drainage are now part of the same team which will assist in integrating these two operations. Chapter 9 will be amended to include this information.</p>
<p>Resident</p>	<p>I am a farmer and have lived all my life off the land, my great concern is that we no longer DREDGE the rivers and so the water has no depth in which to flow. I know that the 'clever' ones will say that that is</p>	<p>Noted. This is beyond the</p>

	<p>not the answer but I know from a lifetime of water management that it would help, at least to make flooding less likely.</p> <p>Having spoken to fishermen on the Severn over the years they tell me that now the river is only 20 feet in places where it used to be 40/60 feet deep years ago, so what does that tell us??</p> <p>When will the 'clever' ones listen to those of us that can advise on these matters and not rely on university qualifications ----a great deal of education can be learnt from 'us older ones'</p>	<p>scope of this plan as it concerns main rivers.</p> <p>No further action required.</p>
Resident	<p>Dredging the rivers would help. Years ago this was done on a fairly regular basis. Haven't seen any dredging being done for 40 years plus,</p>	<p>Noted.</p> <p>This is beyond the scope of this plan as it concerns main rivers.</p> <p>No further action required.</p>
Upton Resident	<p>Lots of very fine and I feel sure, well-meaning words. I note many pictures of the scheme delivered since the 2007 floods, notably Upton upon Severn. Nice to see my old house with the new flood gate in New Street.</p> <p>I do not feel qualified to comment outside of Upton, so the Action Plan is more likely to be of interest to property on east waterside. I note there is no mention of any plan or reference, as far as I could see, to protecting the Hanley Road on west waterside. Securing both these east and west linked access roads into the town, would it seems, be a key investment. If the Hanley Road scheme is not viable for reasons of engineering, this would be good to understand. Or, is it that such a scheme would create a knock-on effect?</p> <p>I also did not see any funding figures or estimates against any of the Action Plan schemes.</p> <p>I note in the FRMS the item on communications is woefully short. Communication at times of pending disaster ought to be given better priority than a few sentences.</p> <p>I do hope that what has happened in Cumbria and elsewhere in the last week will be a giant wake-up call</p>	<p>Noted.</p> <p>Not all the action plan schemes have as yet been properly costed. The action plan is a live document and costs will be refined and added as they are developed.</p> <p>We note the comments on communication in the plan and will refine to give</p>

	<p>to all our elected representatives at national and local level and that we pay more attention to looking after our own 'house and grounds' and that we raise our sights above allocating millions to allocating billions to this threat. The cost to householders, communities, businesses is not just the replacement of possessions and repair of property and the local infrastructure, it is about the follow-on effect of being classed as uninsurable. Investment is needed to create security which will give peace of mind to the human factor so often overlooked when disasters occur.</p> <p>Upton upon Severn is an example of what can be achieved. The much maligned Environment Agency opened its doors to the town's plight, but nevertheless there were those, some of them elected, who said 'no'.</p>	greater emphasis in Chapter 7.
Resident	<p>BECAUSE of humanity's misdeeds, not least in building a 'Technology Park' at the bottom of my road, (now downgraded to a 'business park' I see), and, despite God's promise in the Book of Genesis not to send another flood in retribution it is indeed a breach of covenant. Loh! Behold the Fir Tree Inn** at Oddingley and Noah's Ark charity at Lowesmoore. To quote but two examples of God's retribution (**the former being for a dodgy pint of Hooky!). You cutteth down three oak trees. Another flood awaits lest you desist.</p>	<p>Noted.</p> <p>No specific issues identified and no further action required.</p>
Childswickham Parish Council	<p>It would appear the Strategy falls short for Childswickham as this doesn't cover the work required to alleviate Badsey Brook and specifically how it will be funded.</p>	<p>Noted</p> <p>This is referred to as a specific scheme in the LFRMS action plan. No further action required.</p>
Woodland Trust	<p>Thank you for the opportunity to respond to the above consultation.</p> <p>As when we responded in July 2015, we are pleased to see Footnote 6 on p.60 (<i>Trees in our towns</i>). As mentioned before, we have a companion document to <i>Trees in our Towns</i> for rural areas entitled <i>Planting trees to protect water: The role of trees and woods on farms in managing water quality and quantity</i> - https://www.woodlandtrust.org.uk/mediafile/100263184/rr-wt-71014-planting-trees-to-protect-water.pdf?cb=00fc1952d2dd4affaacf7f23232a8121. This sits with – and compliments – the urban angle in <i>Trees in our Towns</i> and we would therefore strongly suggest that it is included as well.</p>	<p>Noted.</p> <p>Chapter 10 test to be amended to provide greater clarity.</p>

	<p>We therefore suggest amending paragraph 10.38 to read (upper case amendments) to read :- <i>“Planting trees and woodland will not stop all flooding. Engineered flood defences will continue to be needed to prevent inundation of many places. But it is clear that strategically-located trees and woodland, IN BOTH URBAN AND RURAL ENVIRONMENTS (7), can play an important part in reducing flood risk, whilst also improving water quality and contributing to biodiversity conservation. Footnote 7 Planting trees to protect water: The role of trees and woods on farms in managing water quality and quantity (Woodland Trust)”.</i></p>	
Isbourne Catchment Group	<p>Please be advised that I am writing on behalf of the Isbourne Catchment Group. We are an organisation that aims to promote good practice to avoid future flooding in the Isbourne Catchment in South Worcestershire. Please see http://www.isbournecatchment.org.uk/</p> <p>We are the kind of community based organisation that your strategy embraces. We are delighted by your understanding of the issues involved.</p> <p>Within our catchment are Winchcombe, Sedgeberrow and parts of Evesham which have been severely affected by the flooding of the River Isbourne where hundreds of buildings were damaged in the flood of 2007.</p> <p>The Isbourne Catchment Group therefore offers our support and approval of this document.</p>	<p>Supporting comment.</p> <p>No action required.</p>
NFU	<p>Thank you for giving the National Farmers Union the opportunity to comment on the second consultation on the Worcestershire Local Flood Risk Management Strategy. The NFU is a professional body which represents the interests of 75% of all farmers and growers. Our views are on behalf of the farming and land management sector in general.</p>	Noted

	<p>As you know, food security is a key concern for our Worcestershire members. It is vital that food production is safeguarded in the county and that farmers are equipped to meet the many challenges of increasing productivity, maximising output and minimising inputs in order to achieve environmental sustainability and adapt to a changing climate.</p> <p>The important role of agriculture within Worcestershire as a major industry, rural employer and producer of food should be recognised within the strategy. This area is home to a variety of agricultural and horticultural business and there is some highly fertile land in the county.</p> <p>As an example recent discussion of flood risk management has focused on the use of hill lands. However farmgate sales of lamb are worth over £1bn to UK agriculture, while lamb exports generated £382 million in 2012. The tourist revenue from areas where a proportion of the land is maintained by beef and sheep production is also estimated at around £1.49 billion. In England, total sheep and lamb numbers have already reduce by 25% since 1992/1, reducing livestock density in the uplands. These economic factors must be included when deciding on the viability of reducing livestock density further or implementing large scale landscape change. Agriculture and the rural economy must be a priority for local flood risk management.</p> <p>Defra (2014). Livestock Numbers in England. Available online: https://www.gov.uk/government/statistical-data-sets/structure-of-the-livestock-industry-in-england-at-december</p> <p>Important lessons can be learnt from the winter floods of 2013-14 and from the previous flood events in 2000, 2007 and 2012. Policy and practices must find resilient ways of managing flood risk which defend life, property and farmlands. Prompt action needs to be taken which uses all available methods including, dredging, de-silting, repairing banks and managing vegetation. Slowing flow, water storage and improved infiltration also has a role to play in appropriate locations.</p> <p>Large new developments in urban areas have the potential to cause downstream impacts, even when new SUDs techniques are employed. It is important to recognise that farmers have to deal with these impacts as they are responsible for maintaining many of the counties watercourses and it's drainage infrastructure. Some farmers have to cope with flashy flows and rapid flooding arising from urban development. This can give them significant operational difficulties when land is inundated and</p>	<p>This information provides a context for food and farming in Worcestershire. This is recognised in the LFRMS. No further action required.</p> <p>This reflects national figures and data. No further action required in the LFRMS.</p> <p>Noted. The LFRMS currently advocates a range of approaches to flood risk mitigation.</p> <p>Noted. The LFRMS includes detailed information on SuDS and their implementation, which is now a</p>
--	---	---

	<p>waterlogged. Waterlogging and flooding has the potential to directly impact upon the productivity of agricultural land so it is important to value and maintain our existing drainage infrastructure.</p> <p>Farmers, and other rural landowners, are subject to flooding from multiple sources (pluvial and fluvial). Often this flooding is influenced by decisions taken regarding the maintenance of watercourses and assets, or other factors outside of their control e.g. new development and urban creep when developers pay little regard to the down-stream impacts on agricultural land. This flooding can also take place over a wide area meaning that it is more significant than an issue affecting adjoining landowners. As we believe that a large inundation of farmland should be classed as locally significant because of the effects on the rural economy.</p> <p>The NFU released its flooding manifesto in February 2014, a copy can be found at http://www.nfuonline.com/flooding-report_final_low-res_v2/</p> <p>Detailed comments:</p> <p>5 Worcestershire Partnerships</p> <p>We are supportive of partnership approaches to flood risk management. There is much to commend efforts being made by Risk Management Authorities to work in partnership to deliver maintenance works in the most cost effective way. However, co-ordination is needed between all bodies involved. Collaborative working with landowners will be key to Flood Risk Management in the future.</p> <p>5.4 The NFU was an active member of the Worcestershire Land Drainage Group established following the 2007 floods. This was a very valuable forum where knowledge was exchanged between Local Authorities and various other groups. The group has not met regularly for some years and therefore there has not been a forum for farmers and landowners to discuss flood risk management issues. We remain committed to the group and are pleased that a 2016 meeting has been scheduled.</p>	<p>requirement of the planning system. No further action required.</p> <p>The role of land management is explored in the LFRMS and the NFU is a member of the Worcestershire Land Drainage Group where detailed issues concerning flood risk and land management will be discussed.</p> <p>Agreed. The LFRMS does stress the role of partnership and this is reflected in working practices.</p> <p>Noted. Outside of the scope of the strategy, but WCC will ensure that a meeting cycle is established for this group to ensure that this valuable partnership is</p>
--	--	---

	<p>7 Planning Planning decisions should take full account of local flood risk and seek to reduce local flood risk through development.</p> <p>Urban creep is a significant issue, recent studies have shown that extensive areas become impermeable each year due to extensions, hard paving and the loss of urban green space. Therefore policy should make allowance for future urban creep within new and existing developments. Some flood risk authorities add an additional modelling requirement on any drainage system serving a development, in order to take account of urban creep and climate change. This approach could help to address flashy flows from urban runoff that often cause issues for farmers and other rural landowners.</p> <p>8 Actions to Manage Flood Risk</p> <p>2.4 We would be supportive of initiatives to work with landowners to reduce surface water runoff. However, such projects must be able to access expertise in agriculture, land drainage and soil management in order to be able to provide the appropriate level of technical support to farmers and land managers. Such initiatives must also recognise the significant and detailed local knowledge held by farming and rural communities.</p> <p>9 Flood Risk Management</p> <p>9.1 As stated above, any discussions with landowners to review land management methods must be supported by staff with sufficient expertise in agriculture, land drainage and soil management in order to be able to provide the appropriate level of technical support to farmers and land managers.</p> <p>9.10-12 Upstream catchment management The NFU recognises that natural flood management techniques, in the right location, can have their place, but they are not the universal panacea and should only be used as part of a cohesive and carefully</p>	<p>maintained and supported for its contribution to flood risk management.</p> <p>Noted.</p> <p>Worcestershire does ask for additional allowances to reflect urban creep. Chapter 7 and 9 be to be amended to reflect this.</p> <p>Noted and agreed. Farmers and land managers will be included in projects as appropriate.</p> <p>Noted and agreed as above.</p> <p>Agreed. Chapter 9 to be revised to reflect the</p>
--	--	---

	<p>planned package of measures. These could include maintenance, de-silting, upstream attenuation and maintaining downstream conveyance to address shorter and longer term flood risk. However these measures cannot mitigate against very high or unprecedented rainfall, as seen in large parts of Northern England during the winter of 2015/16.</p> <p>There are a wide range of catchment types within Worcestershire with a range of existing land uses. We agree that a greater understanding on the relevant natural flood management techniques is required. An assessment of catchment types needs to be undertaken to try to understand which catchments would respond well to natural catchment techniques as they would yield better results in some catchments.</p> <p>Prior to the development of Natural Flood Management schemes, special consideration needs to be given to the following:</p> <ul style="list-style-type: none"> • The need to actively and fully consult, engage and seek agreement with land managers, especially farmers, to ensure schemes can work alongside other land uses, including agriculture and food production; • Decisions on natural flood risk management options should be supported with careful site analysis of the benefits, dis-benefits and risks, with special attention given to local catchment knowledge. Defra’s Working with Natural Processes (WwNP) is a programme of research into sustainable flood and coastal erosion risk management. At its core are principles of using pilot studies and technology such as Global Positioning Satellite Technology (GPS) to model the effects of the scheme upon the catchment as a whole across the full spectrum of flood flows, catchment conditions and scales. Poorly located schemes can have the inadvertent effect of increasing the frequency or extent of flood inundation. • Natural flood management measures bring their own suite of maintenance issues that need to be addressed in a scheme’s development and long term Flood Risk Management resource planning. These occur both where measures are applied and for channels and structures downstream; • Agricultural land forms part of a viable business that maintains food security and boosts rural economies. Where Natural Flood Management techniques are implemented, suitable financial support and compensation should exist. Agri-environment schemes may not be suitable, particularly for bespoke, longer-term schemes; as such greater awareness is required on the sources of funding available. 	<p>complexities of this approach.</p> <p>Noted. No action required.</p> <p>Noted. We note the complexities of these schemes in the plan, and the need for involvement of a wide partnership. Detailed discussion of the approach is not appropriate within the LFRMS, but text to be amended to reflect the role of landowners, funding and partnership.</p>
--	--	--

	<ul style="list-style-type: none">• Any natural flood risk management measures must work for both the landowner and tenant(s). The NFU supports the opportunity for farmers to work in partnership with other catchment stakeholders to undertake these activities. <p>9.13 SUDs</p> <p>We welcome the SUDs initiatives set out by the strategy as it is vital that new developments make space for water attenuation. This approach does make sense but unfortunately it cannot compensate for the hard surface developed in the last fifty years.</p> <p>Both existing and new development of urban areas have the potential to cause impacts elsewhere within connected parts of the catchment, even when new SUDs techniques are employed. Waterlogging and flooding has the potential to directly impact upon the productivity of agricultural land so it is important to value and maintain our existing drainage infrastructure. It is important to recognise that farmers often have to deal with the consequential impacts downstream of development. Developers should be required to investigate and address these down-stream effects and it would be interesting to explore whether there could be scope for some of the new developments to become involved in flood alleviation projects in the rural areas of the county.</p>	<p>Noted. The role of SuDs is explored fully in the strategy. Developers are currently required to produce models which do consider the downstream impacts of their development. The primary mechanism for involving developers in flood mitigation projects will be through Community Infrastructure Levy which is included as a potential funding stream in the strategy.</p> <p>No further action</p>
--	--	--

	<p>A mechanism must be put in place to safeguard the future management of SUDs systems, particularly in residential settings where they may be subject to urban creep. It would be prudent to put a local policy in place to offset even small extensions to urban areas as there will be effects on total runoff quantity.</p> <p>Review Land Management Methods</p> <p>9.22 The maintenance of existing drainage infrastructure and watercourses is a vital part of flood risk management.</p> <p>There should be a focused package of support and communications for rural landowners, covering their current rights and responsibilities, consenting, managing vegetation, obstructions to flow and maintenance. It is also important to communicate with non-farming rural landowners and householders in rural areas who can be responsible for stretches of significant watercourses. Any communication with riparian landowners should cover a wide range of land management issues.</p> <p>While a collaborative approach to flood risk management is favoured, there are some situations where it is simply not possible for farmers to undertake large scale maintenance activities on the wider rivers in the catchment, for example the larger rivers Severn, Teme Avon and Salwarpe. Farmers do not have the experience or equipment necessary to undertake these potentially dangerous works. The EA must</p>	<p>required.</p> <p>The amendments to nPPG which established the requirements for SuDS, require all relevant developments to include a plan for the future management of SuDS.</p> <p>No further action required.</p> <p>These issues are outside the scope of the strategy as they are beyond the remit of the LLFA and remain the</p>
--	--	---

	<p>continue to maintain these larger rivers and prioritise key watercourses that will impact upon agricultural land and rural communities.</p> <p>9.23 Farmers appreciate that they have maintenance responsibilities and therefore barriers to effective drainage and watercourse maintenance should be identified and the complexity of consenting should be reduced. Farmers are in a position to be able to carry out works at much lower costs than the EA or flood risk authorities and therefore can achieve more with less. The EA and local flood risk authority should support householders and businesses who want to undertake maintenance themselves.</p> <p>9.25 Agricultural practices have changed over time in response to government policy and the need to provide food for an ever growing population. Farmers are acutely aware of the need to manage soils sustainably, to reduce soil compaction and erosion and thereby minimise surface water runoff.</p> <p>Over two-thirds of farmers undertake regular soil sampling, or are involved in voluntary schemes to reduce soil erosion rates from agricultural fields. Changes in practices are also used, in a recent survey of agricultural contractors, over 90% of respondents said that they use minimum tillage equipment to increase organic matter content in the top layer of the soil. These techniques improve soil structure and reduce compaction, which can increase infiltration rates and slow the flow of water.</p> <p>The NFU has worked closely with research institutes such as the Game and Wildlife Conservation Trust and Rothamsted to link farmers with researcher studying how grassland and arable systems can reduce overland flows. For example a recent event at Rothamsted’s research station at North Wyke discussed the links between water quality and volume with differing grassland species, which provide greater dry matter yield or legume clover content, and varying grassland management systems which can reduce</p>	<p>responsibility of the Environment Agency.</p> <p>No further action required.</p> <p>The LLFA works in partnership with landowners and framers where ever possible and recognises their valuable contribution. Through the LFRMS we hope that this will continue into the future. No further action required.</p> <p>Noted.</p> <p>Farmers and land owners in the county make a positive contribution to the environment and are involved in a</p>
--	--	--

	<p>compaction and retain organic matter content within soils.</p> <p>Numerous factors will influence crop selection and hedgerows are no longer removed on a large scale (this is governed by the Hedgerow Regulations). Many thousands of miles of new hedgerows have been planted in England under a range of Agri Environment schemes.</p> <p>Worcestershire’s farmers produce local food while caring for the environment by managing hedgerows, watercourses and undertaking other forms of voluntary environmental enhancement. For many farmers environmental management is a core business activity but this is not acknowledged by the strategy. Any changes in land management practices must be undertaken with full consultation and an agreement with the landowner.</p> <p>Case Study The Pontbren project demonstrates the importance of such initiatives being farmer led. The project has had many positive outcomes for the farmers involved. However it must be noted that the area is in the uplands and the landscape and farm economics are not directly comparable to the Worcestershire situation.</p> <p>Skills and capacity 9.67 This section should also include and understanding of land drainage practice as well as law. An understanding of agriculture and soil management would also be helpful.</p> <p>Environmental Objectives 10.3 Environmental considerations must not become a barrier to maintenance or impose additional costs that make the process unaffordable for businesses to undertake. For example while there may be biodiversity benefits from staging maintenance work over a number of years, having to hire equipment and possibly labour in on separate occasions would add considerably to the costs. Where biodiversity improvement is proposed the additional costs must be examined and unnecessary burdens must not be imposed.</p>	<p>range of different schemes which are contributing positively to flood risk management and environmental quality. Chapter 10 will be amended to reflect this.</p> <p>Noted and agreed.</p> <p>Noted. Land</p>
--	---	---

	<p>Sustainable Development 10.18 Alerting the flow of water may also impact on downstream landowners who may rely on it as a source of water for livestock.</p> <p>Green Infrastructure 10.37 Natural Flood Management options such as tree planting need to be located carefully. The local effects of woodland creation in uplands to slow the flow can have unpredictable and counter-intuitive effects when looked at in the context of a whole river catchment. This includes increased risk of downstream flooding due to washout of large woody debris and enhanced risk of upstream flooding, due to the backing up of flood water.</p> <p>The effectiveness of woodland to mitigate against flooding largely depends on its species, size and age. Greater water use of forests only becomes fully established when canopy closes (after 10-15 years for conifer plantations, significantly later for broadleaves). This permanence of woodland leads to long term landscape change and impacts on land use and value, therefore it must be evident that the woodland can provide long term benefits and consider the ownership and costs of woodland maintenance.</p> <p>10.39 This approach must also take into account existing land uses and recognise that farm business underpin the rural economy. These approaches must be farmer led and WCC must identify mechanisms</p>	<p>drainage practice is already included in chapter 9. Agricultural understanding to be added.</p> <p>Noted. Environmental objectives alongside the economy and social factors, are three pillars of sustainable development value for money will be considered in all proposals. This chapter is reflecting on environmental opportunities, no further action required.</p> <p>Upstream catchment management is considered elsewhere in the strategy.</p>
--	--	--

	<p>to support them.</p> <p>Many of the floodplains in Worcestershire already function well as storage areas and the contribution they already make should be recognised.</p> <p>Creating managed storage areas could be an option in appropriate locations. This storage could take many forms, from wash-lands for flood storage to measures to improve infiltration, or rural suds therefore we need further information about how this would be achieved. Any measures must be undertaken with full consultation and an agreement with the landowner and a mechanism of compensating farmers for losses needs to be developed.</p> <p>Land Use Planning</p> <p>3.6.4 This section refers to Natural Catchment Management techniques. This approach must be carefully balanced with the farmers need to retain drainage capacity of the land, manage drainage infrastructure and produce food profitably. Natural management is a very subjective term, particularly as almost all of the land within the county has been subject to management by people.</p> <p>Floodplain restoration could take many forms, from wash-lands for flood storage to measures to improve infiltration, or rural suds. However we are concerned that the benefits of establishing woodlands in floodplains are being overplayed. The impacts of wooded areas will be highly dependent on the current land use, soil type and also highly dependent on season, leaf cover and woodland type. Each catchment must be approached on its own merits. Any decisions about natural management must involve local landowners and take account of the economic impacts of management change.</p> <p>As mentioned above there is a role for slowing the flowing appropriate locations. However a mechanism for long term funding and management of these features has still to be identified. This needs to be acknowledged within this section as changes in land management could result in significant loss of income and additional maintenance costs for landowners and farmers.</p>	<p>Opportunities to include green infrastructure in development or to retrofit can have a significant impacts on flood risk management at a local scale and form part of SuDS. No changes required.</p> <p>Noted. Farmers and land owners are critical to the rural economy in the county. This is reflected throughout the strategy and in the sections on partnership and land management. No further action required.</p> <p>These comments refer to chapter 10; sustainable development and green infrastructure</p>
--	---	--

	<p>Other comments:</p> <p>The Aftermath of flooding One of the key issues for farmers following a significant flooding event is the accumulation of waste on land as waters recede. The recent flooding events resulted in the deposition of significant volumes of household waste on land and wheelie bins etc. were washed away. This is a significant issue for farmers and in the past EA and local authorities have been supportive and assisted with clear up. This issue must continue to be a feature of recovery and response plans.</p> <p>Significance of flooding Our view is that in order for the strategy to adequately reflect the impacts of flooding on the rural areas of the county, large flooding events on farmland should be classed as 'locally significant'. At present this terminology is only used with reference to domestic and 'commercial' properties and therefore does not include the economic impacts of significant flooding events on rural businesses. This is an important issue as there is scope for farmers to find themselves at risk in extreme flood events, for example where they have to move stock at night.</p> <p>I hope that you find our contribution to the consultation useful. The NFU is keen to assist the council with the development of planning policy so if you require further information or clarification of any of the points raised in this response please do not hesitate to contact me at the West Midlands Regional Office</p>	<p>sections, and not land use planning as stated.</p> <p>This section considers natural techniques as one of a number of approaches to flood risk management and 10.38 explains that this will not stop all flooding, but is part of a more sustainable approach. Funding is a part of this sustainable approach. No further action required.</p> <p>Noted and agreed. No further action required.</p> <p>Noted. The definition of "Locally</p>
--	--	---

		<p>significant" flood risk is currently set nationally. Changes to this are beyond the scope of the LLFA .</p> <p>No action required.</p>
Pershore Town Council	<p>I wondered whether it was important that some reference in this document is made to the Pershore Multi Agency Flood Plan which is a very good example of multi partnership working and which has now been tested on two occasions and works very well.</p>	<p>Noted. Strategy to be amended to include reference to multi-agency flood plans.</p>
Worcestershire Wildlife Trust	<p>Thank you for sending us details of the draft Local Flood Risk Management Strategy consultation. This is an important document and we therefore welcome the positive strategic aims set out in para 8.2, which we believe must be followed in order to deliver sustainable flood risk management in Worcestershire. Similarly we are pleased to support the Environmental Objectives set out in Chapter 10 and in particular the mechanisms listed in the bullet points associated with para. 10.3 and the comments on using natural processes in para 10.39. Indeed we are fully supportive of the document in general and have only small detail comments to make. These are as follows.</p> <ol style="list-style-type: none"> 1. The document is necessarily quite long and involved and it would be helpful to have a concise executive summary (perhaps just a few bullets associated with each of the Strategic Aims) so that those without the time to read the whole document can still take away its important messages. 2. Similarly, it would be helpful if each of the chapters could have a short summary section setting out one or two key messages for the sake of clarity. 	<p>Agreed. This will be included in the final published version of the document.</p> <p>Agreed. This will be included in the final published version of the document.</p> <p>Agreed. We will</p>

	<p>3. We note one or two inconsistencies with the term main river. Though specialists will understand the difference between main river and 'Main River' (and we note that the formal term is highlighted in the glossary) it may be helpful to use a different term in general statements about bigger watercourses (Severn, Teme and Avon for example) so as to avoid confusion.</p> <p>Other than those very minor comments the document looks good and we would be pleased to support it as it is.</p> <p>I hope that these comments are of use to you but please do not hesitate to contact us again if we can be of further assistance.</p>	<p>address this is the final version.</p>
<p>Network Rail</p>	<p>Thank you for consulting Network Rail (NR) on the council's draft Local Flood Risk Management Strategy. Having consulted NR Asset Engineers responsible for drainage in the Western Region the following comments are brought to your attention:</p> <ol style="list-style-type: none"> 1. No soakaways shall be constructed within 20m of NR boundary. 2. Foul/Surface water where possible should be discharged into a public sewer. 3. Any work and development involving alterations to ground levels are to be such that any water flows away from the railway. 4. If water is discharged into the NR system, a licence for this discharge must first be obtained. 5. If water is discharged into the NR drainage system then necessary checks should first be carried out to ensure that the existing system can cope with the additional water flow – this will be an important requirement for granting of licence referred to in point 4. 6. NR consent will be required where NR Infrastructure is used as a Flood Defence. 7. Any work or development that may possibly have a drainage impact on NR land will require the carrying out of a Design Risk Assessment with specific regard to the railway i.e. Will the proposal have a detrimental impact on the safe operation of the railway and what are the proposed mitigation measures? 8. Experience has shown that where work may have an impact on NR land, we are often consulted at the latter stages of the design/work programme when it is often difficult and expensive to instigate changes that will protect NR assets. To avoid this problem NR should be one of the first 	<p>Noted.</p> <p>These are very detailed comments and apply where proposals are being developed which would impact Network Rail, directly and indirectly. Although it is not appropriate to amend the strategy to includes these, they are noted and will become part of the screening process for all projects.</p>

	<p>bodies to be consulted</p> <p>9. When assessing risk in areas that are prone to flooding, the risks to the railway should always be an important consideration.</p> <p>I would be grateful if the above comments could be taken into account in the preparation of this Local Flood Risk Management Strategy.</p>	
<p>Historic England</p>	<p>Re: Worcestershire County Council LFRMS and SEA consultation documents</p> <p>Thank you for your email of 7 December 2015 in respect of the above. We understand from a telephone conversation this week that the consultation includes the SEA at this time. I can confirm that Historic England has no comments to make on the HRA screening since we are concerned with the heritage aspects of the documents.</p> <p>General comments</p> <p>Historic England welcomes the opportunity to engage in the assessment and preparation of the LFRMS for the following reasons:</p> <ul style="list-style-type: none"> – The vulnerability of most heritage assets (designated and non-designated) to flooding, including occasional flooding, and the potential harm to, or loss of, significance; – The potential impact of flood risk management measures on heritage assets and their settings, including impacts on water-related or water dependent heritage assets; – The potential impact of changes in groundwater flows and chemistry on preserved organic and palaeo-environmental remains: where ground water levels are lowered as a result of measures to reduce flood risk, this may result in the possible degradation of remains through de-watering, whilst increasing groundwater levels and the effects of re-wetting could also be harmful; – The potential impact of hydro-morphological adaptations on heritage assets: this can include the modification/removal of historic in-channel structures, such as weirs, as well as physical changes 	<p>Noted; no action required.</p>

	<p>to rivers with the potential to impact on archaeological and palaeo-environmental remains;</p> <ul style="list-style-type: none"> – The potential implications of flood risk on securing a sustainable use for heritage assets, including their repair and maintenance; – The opportunities for conserving and enhancing heritage assets as part of an integrated approach to flood risk management and catchment based initiatives, this includes sustaining and enhancing the local character and distinctiveness of historic townscapes and landscapes; – The opportunity for increasing public awareness and understanding of appropriate responses for heritage assets in dealing with the effects of flooding as well as the design of measures for managing flood risk and improving resilience; and, – The opportunities for improving access, understanding or enjoyment of the historic environment and heritage assets as part of the design and implementation of flood risk management measures. <p>The comments set out below supplement our general comments on the SEA and the LFRMS by outlining considerations specifically relevant to the current consultation documents.</p> <p>Strategic Environmental Assessment (SEA)</p> <p>Historic England welcomes the SEA Objective 3 relating to the historic environment and notes that it extends to character and appearance of townscapes, as well as maintaining and strengthening local distinctiveness and sense of place. Furthermore, green belt can often contribute to the setting of a heritage asset so its inclusion as part of Objective 4 Material assets is welcomed. It is also helpful that Objective 4 refers to the reuse of vacant buildings, which can often be a heritage asset or relate to the historic environment and form part of its character, and also ‘heritage interests’.</p> <p><u>Para 1.9.2</u> Thematic Recommendations – Points 3, 4, 5 and 7 of this section are welcomed since they all relate to the historic environment directly or indirectly.</p> <p><u>Para 1.10.1</u> SEA Framework Indicators – Points 2, 3, 8, 9, 11, and 20 are welcomed. However, it is recommended that the reference to ‘<i>undesignated heritage assets</i>’ in point 8, and throughout the document, is changed to ‘<i>non-designated heritage assets</i>’ in line with NPPF wording.</p> <p><u>Section 2.2</u> Strategy Aims and Objectives – It is noted that <u>Aim 6</u> includes a historic environment objective at point 6.1 which is welcomed.</p>	<p>Noted. Final document to be amended to reflect this change.</p>
--	---	--

	<p><u>Para 3.1.3</u> – P.18 includes reference to the ‘Flooding and Historic Buildings’ document produced by HE. The reference to ‘English Heritage’ should be replaced with ‘Historic England’ and the 2015 document should be referred to rather than the 2010 issue which has been updated.</p> <p>The substantive number of historic environment related documents, which are set out as having been reviewed for the draft Scoping Report in 3.1.3 including the HE advice on SEA/SA and the Historic Environment, are welcomed.</p> <p><u>Section 5.2</u> The SEA Objectives – Objective 3 relating to the Historic Environment and the approach of addressing subject areas under subheadings including a section on the historic environment is welcomed.</p> <p>However, on p.31 (last paragraph) the historic environment text sets out that flooding and flood management measures can have ‘<i>serious</i>’ positive and negative impacts on the historic environment. It is recommended that ‘<i>serious</i>’ be replaced with ‘<i>significant</i>’ since the role of the SEA is to assess possible ‘significant effects’.</p> <p>In addition, the WAAS ongoing project is mentioned which will address some issues, but it is recommended that an additional sentence is included at the end of the existing text to refer to potential opportunities which would link with other objectives in a synergistic approach e.g. ‘<i>New and revised flood management schemes have the potential to offer opportunities for improved public access to the historic environment</i>’ – this would link with the stated intentions of the health, landscape and biodiversity objectives.</p> <p><u>Page 38</u> – Para 3 refers to access to the natural environment linking to the health objective, and you may wish to consider including ‘natural <u>and historic</u> environment’ as an alternative to further emphasise the synergy between objectives.</p> <p><u>Section 6.5.8</u> - Historic England welcomes the inclusion of historic environment and heritage assets throughout the commentary on actions in specific locations although there is a typing error on P.60 last box ‘... stretched sot the ...’</p> <p><u>Appendix 3 :</u> LFRMS Obj 2.2 develop flood alleviation schemes – P.75 historic environment section – it is</p>	<p>Noted. Final document to be amended to reflect this change.</p> <p>Noted. Final document to be amended to reflect this request.</p> <p>Noted. Final document to be amended</p> <p>Noted Final document to be amended</p> <p>Noted Final document to be</p>
--	---	---

	<p>recommended that the last sentence be revised to address landscape e.g. <i>'...buried archaeology and historic landscape character'</i> to emphasis the synergy between objectives and to provide a more robust reference to the historic environment.</p> <p><u>LF RMS Obj 2.3 Working with partners et al – P.80 historic environment section</u> – The matrix score indicates a negative/uncertain score. An uncertain score can indicate that further work on the SEA is required. However in this instance it is suggested that the comments box text could include reference to the HE advice on 'Flooding and the Historic Environment' (2015) as previously referred to in the list of documents considered which may add to the commentary and allow reconsideration of the 'uncertain' element since the document provides advice on appropriate PLP measures. If good practice examples are to come out of the WAAS study it may be worth including reference to that too to inform the comments further.</p> <p><u>LF RMS Obj 2.4 – Work with landowners, NGO's and other public bodies etc – P.83 historic environment section</u> – In terms of potential synergistic outcomes it is recommended that consideration is given to an additional sentence within the commentary to set out that surface water run off management schemes have the potential to offer opportunities for recreation in, and better understanding and appreciation of, the historic environment and heritage assets and their settings.</p> <p><u>LF RMS Obj 2.5 – Monitor ordinary watercourses and encourage appropriate maintenance – Pp.86 and 87 historic environment section</u> – The matrix score presents a '+' and a '-' which is of concern. A commitment to a Flood water management design and adoption guidance SPD would help address the negative score if this is something the County Council could consider. Information outputs from the WAAS study may also assist with addressing the negative score and it is recommended this aspect be explored further.</p>	<p>amended</p> <p>Noted. This will depend on details of schemes and their implementation which is still uncertain at the current time. No change required.</p> <p>Noted. Final document to be amended</p> <p>Noted. This is being strongly considered in the LFRMS and between districts and county, but has not finally been agreed. No change required.</p> <p>Noted. SEA to be refined to address</p>
--	--	--

	<p><u>LFRRMS Obj 2.5 – Monitor ordinary watercourses and encourage appropriate maintenance – P87 material assets section</u> – the materials assets comments state that <i>‘due to the nature of most watercourse maintenance (clearing blockages, de-silting etc) objective 2.5 is unlikely to lead to significant impact on the material assets...’</i> However, the material assets sections all include reference to ‘heritage interests’ and the historic environment comments above state that <i>‘there is a risk that historic structures..... could be damaged by insensitive methods of clearing watercourses’</i>. As such, the comments for SEA objectives 3 and 4 in relation to LFRMS Objective 2.5 are at odds with each other. As per previous comments above, a commitment to a flood water management design and adoption guidance SPD would help address the issue if this is something the County Council could consider. Notwithstanding this, the comments for the material assets need rewording so they do not conflict with the historic environment section comments.</p> <p><u>LFRRMS Obj 6.1 – Protect, enhance and conserve Worcestershire’s built and natural environment – Pp89-90</u> – The commentary on all SEA objectives in respect of this LFRMS objective is welcomed. In respect of SEA objective 6 climate change the ‘uncertain’ matrix score could be addressed through a commitment to a Flood water management design and adoption guidance SPD if this is something the County Council could consider. If so the commitment should be stated in the comments sections.</p> <p><u>LFRRMS Obj6.2 – Adapt to future projected climate change – Pp.91-92</u> – The landscape section uncertain score and the historic environment negative score are of concern. As per previous comments above, a commitment to a flood water management design and adoption guidance SPD would help address the issue if this is something the County Council could consider. If so the commitment should be stated in the comments sections.</p> <p>We would welcome any further opportunity to work with you in respect of the SEA for Worcestershire LFRMS.</p> <p>Local Flood Risk Management Strategy (LFRMS)</p> <p>The LFRMS section on the historic environment (pp.61-62) sets out general comments, but focuses heavily on potential WAAS project outcomes which have not yet occurred. It may be appropriate to consider strengthening this section by expanding para 10.44; setting out any potential benefits and opportunities which could be achieved as a result of flood risk management measures; and, also through a commitment to a flood water management design and adoption guidance SPD.</p>	<p>any contradictions.</p> <p>Noted. As above.</p> <p>Noted; as above.</p> <p>Noted; paragraph 10.44 advocates early engagement with WAAS, which is the most appropriate approach for ensuring that Historic</p>
--	--	--

	<p>Conclusion I hope the above comments are of use to you at this time. Historic England would be pleased to remain involved with the LFRMS for Worcestershire, and its' SEA.</p> <p>.</p>	<p>Environment is considered in proposed schemes. No further action required.</p>
<p>Sedgeberrow Parish Council</p>	<p>On behalf of Sedgeberrow Parish Council I would like to extend our thanks and approval of this draft document. This is a difficult subject that you have presented and clarified. Flood risk is very important to our village as almost one third of our properties suffered from internal flooding in 2007.</p> <p>The clarification of roles and responsibilities as well as several useful case studies we found very helpful. We at Sedgeberrow suffered greatly from surface water therefore we look to Worcester County Council as the Lead Local Flood Authority (LLFA) to mitigate against this happening in the future as well as to coordinate help should a 2007 event happen in the future.</p> <p>We wish you success with your plan and will work with you wherever possible.</p>	<p>Noted.</p> <p>Comment of support, no further action required.</p>
<p>WCC Councillor</p>	<ol style="list-style-type: none"> 1. Regarding the introduction, my thoughts on paras 1.2 and 1.5 is that a stronger statement might be included to indicate that efforts within the county are limited by needing to fit into a catchment wide strategy and that strategy must be determined by the Environment Agency. <p>It is self-evident that actions upstream of Worcestershire can have a serious influence on the county's burden and that no strategy can be adopted without understanding the whole catchment policy.</p> <ol style="list-style-type: none"> 2. Para 1.7: the diagram does not seem to offer any large scale works in mitigation of flood risk. 	<p>Noted. Chapter 1 to be revised to strengthen this message.</p> <p>Noted. The diagram applies to all flood risk mitigation, large or small. Chapter 1 text to be amended to reflect this.</p>

	<p>3. Para 1.10: how do the local plans fit in with the EAs plans for the Main Rivers and how is such co-operation organised? Not clear on the mechanism or the integration of the two systems.</p> <p>4. Para 3.9: would it be helpful to indicate the Main Rivers that these streams flow into, as with the Salwarpe?</p> <p>5. Para 6.3: re property flooding post 2009, how is a “flood plain” defined?</p> <p>6. Para 6.8: would it be helpful to indicate what County mechanisms are in place to inform local communities about flood risk? I must admit to not being sure by whom I would expect Tenbury residents to be informed of an imminent risk.</p>	<p>Noted. The inter-relationships between the strategies and plans are explored in chapter 2: legislative and policy context. No further action required.</p> <p>Noted. Chapter 3 to be amended.</p> <p>Noted. Chapter 6 to be amended to provide this definition.</p> <p>Noted. The County will use a range of different techniques to inform and consult with local communities. This paragraph will be amended to reflect this.</p>
--	---	--

	<p>7. Para 7.3: There is an existing planning application for 175 houses in the middle of Great Witley. Residents have expressed grave concern about surface water run-off affecting downstream ponds, streams and properties. In a previous development, a small swale was eliminated after planning permission. WCC needs to be resolute in demanding appropriate measures.</p> <p>I told the residents that WCC could strongly recommend draconian SuDS to minimise run-off, but felt the District Council was unlikely to implement them fully.</p> <p>8. Para 7.16: with reference to the comment above, the development in the centre of Lower Broadheath demonstrates a good example of this water retention, by contrast with the one in Great Witley, which was eliminated. An example might help.</p> <p>9. Para 8.5: is there such a thing as a published list of “designated assets” that are relevant to flood mitigation? A few examples might help here.</p> <p>10. Para 9.23: Removal of blockage and obstructions. There is a potential conflict between speeding flow and slowing flow, depending on conditions and locations. All straightening of rivers is now condemned, despite it speeding flow. Removing blockages might form the same function but location is all.</p>	<p>Noted. No amends required.</p> <p>Noted. An example of good practice will be included in the final strategy.</p> <p>The Asset Register will be a public document available to view. Chapter 8 to be amended to reflect this.</p> <p>Noted. Removal of blockages will remain a maintenance activity, where appropriate. Retention of blockages as part of a flood mitigation scheme will require further investigation</p>
--	---	--

	<p>If the Kyre Brook upstream of Tenbury Wells is partially blocked by vegetation and fallen branches, this will slow the flow in peak periods and mitigate flood risk in the town. Vegetation and fallen timbers in the section through the town will make flooding worse. The latter should always be removed periodically, the former may well be left in place for some years.</p> <p>There may be a conflict with the principle in the last bullet point in para 9.33.</p> <p>11. Para 10.4: Why should we seek to “mitigate the impacts of the urban heat island effect”? What effects are harmful? We are all familiar with the two temperatures given by our forecasters, for urban and rural temperatures at night. When was this identified as a bad thing?</p>	<p>and modelling at early feasibility, on a project by project basis. No further amends to the LFRMS required.</p> <p>The urban heat island effect contributes to the potential for extreme summer temperatures and can add to the adverse impact of heat waves. Green roofs have been shown to assist providing natural cooling to properties, and water can also have a cooling effect. No amends required.</p> <p>Noted. Chapter 10 to be amended.</p>
--	---	---

	<p>12. Para 10.11: the listing of the bullet points indicates a higher priority for “wildlife” than “everyone”. This is precisely the attitude demonstrated by the EA that brought such criticism of it during the floods on the Somerset Levels, with the previous CEO, Baroness Young, coming in for fierce criticism. Maybe the order could be changed...</p> <p>13. Para 10.24 et seq.: no comment on climate change itself</p> <p>14. Para 10.34: in this context it might be worth commenting that beavers have minimal benefit, inasmuch as they are not able or willing to lower the water level upstream of their dams prior to heavy rainfall. This form of “rewilding” would have much less benefit than the tree planting being advocated here.</p>	<p>Noted. Beavers would not be a part of a natural catchment approach in Worcestershire. No amends required.</p>
<p>Resident</p>	<p>I am really surprised the action plan associated with the Local Flood Risk Management report does not include a flood alleviation plan for the river Avon at Eckington Bridge on the B4080 which is regularly closed because of flooding. Some 3000 vehicles a day use this crossing on weekdays, 2400 on Saturdays and 2000 on Sundays. The impact of the bridge closure is felt on several levels. The closure of the road affects the local economy and of course it is really important to all small villages that local facilities are maintained. The local shop, Eckington Stores and the Bell report significant reductions in turnover when the bridge is closed. Other business report cancelled appointments because Customers do not want to take the longer journey, sometimes these Customers do not return. Businesses are also affected when incorrect signage is erected and then left in place long after the road is open. The local bus service, for some villagers their only means of transport, is disrupted. The official diversion route is 7.4 miles long clearly adding expense to the journey and certainly a considerable increase in air pollution. Moreover this diversion directs traffic through Pershore, adding to congestion and via the small village of Great Comberton. The narrow diversion roads are quite unsuitable for the increased volume of traffic let alone the larger vehicles including heavy goods vehicles and buses that follow the route. The traffic using these small lanes often has to mount the grass verges to be able to pass. This results in mud scattered across the road and deep channels being formed at the edge of the road often close to deep ditches as</p>	<p>Noted. This is a site specific issues which it is beyond the scope of the strategy. This issue will be referred to Flood Risk Management colleagues to explore fully.</p>

	<p>attached photographs. The roads are unlit so the formation of these ruts is obviously a safety hazard. Eventually the damage to the roads will have to be repaired adding to the cost. I do hope it is not too late to include a scheme to minimise problems in the near future.</p>	
<p>Severn Trent</p>	<p>Thank you for consulting us on the LFRMS.</p> <p>We have reviewed the Strategy and the Action Plan and have the following comments:-</p> <p><u>Local Flood Risk Management Strategy</u></p> <p>Glossary</p> <ul style="list-style-type: none"> • Resilience – It is good to note your definition of resilience. It may be of interest to note that OFWAT published a recent report about what resilience means for the water industry. One of the recommendations is to get a more consistent definition and understanding of resilience. http://www.ofwat.gov.uk/publication/resilience-task-and-finish-group-final-report/ • Sewer Flooding – We recommend slightly altering the reference to ‘rivers can be flooded with water contaminated with raw sewage’. We would recommend removing the word ‘raw’. During heavy rainfall, combined sewer overflows (CSOs) can operate which discharge dilute sewage to watercourses. These are consented by the EA. Also during heavy rainfall, sewer flooding can occur which can result in this flood water discharging to a river or mixing with river flooding. <p>Background</p> <ul style="list-style-type: none"> • 1.10 – reference to the ‘evidence base’. Is this the SWMP? • References to Surface water flooding and sewer flooding – We welcome the references to ‘defining flood risk’. However, we note some inconsistencies in how surface water flooding is defined, in particular in relation to sewer flooding. We appreciate that there are different interpretations of this anyway, but we would just recommend consistency in the LFRMS. For instance, the box defining flood risk refers to surface run off as a source of local flood risk and the glossary defines surface water flooding as ‘flooding from rainwater that has not entered a watercourse, drainage system or public sewers’. However, later in the strategy, reference is made to ‘highway flooding being a subset of surface water flooding’ and ‘surface water flooding from sewers’. • 2.3 – We recommend considering referring to the Water Industry Act 1991 in relation to water 	<p>Noted. A wider definition will be discussed with partners.</p> <p>Noted. Glossary to be revised to reflect this.</p> <p>Noted. The strategy will be revised to ensure consistency.</p>

	<p>company role in flood risk management.</p> <p>Chapter 3 – Types of Flooding</p> <ul style="list-style-type: none">• 3.2 – Reference to highway flooding being a sub-set of surface water flooding. See earlier reference to definitions.• Flooding characteristics in Worcestershire<ul style="list-style-type: none">○ We welcomed the local descriptions in this section which is not included in many other LFRMS.○ See earlier comments regarding references to ‘surface water flooding from sewers’.○ We would recommend referencing the sources of information used as the basis for the statements in these sections though, as sometimes the comments are quite generalised. <p>Chapter 4 – Water and Sewerage companies</p> <ul style="list-style-type: none">• 4.11 – We recommend more accurate reference to the transfer of private drains as sewers. For instance:- https://www.gov.uk/government/publications/the-private-sewers-transfer-regulations. Please note that not all private sewers transferred to our ownership, especially those within the boundary of private property unless it serves 2 or more properties.• Please see attached document which summarises our roles and responsibilities in relation to flooding and drainage. It is now a little out of date, but we hope you are extract a few details from it to include in this section of the LFRMS in relation to our roles.• The reference to DG5 registers in this document and how we prioritise investment in sewer flooding is a little outdated. The following text may be of use:-<ul style="list-style-type: none">○ Our target is to reduce incidents of internal sewer flooding by 13% and external sewer flooding by 6%. We will do this by adopting a more risk based outcomes approach in line with EA / OFWAT Drainage Strategy Framework and the Sewerage Risk Management 5 (SRM5) methodology. We will be focussing on managing low severity sewer flooding through property level protection, whilst also increasing our investment in schemes increase the capacity of our network. We continue to invest in repairing, replacing and rehabilitating our assets, as well as undertaking proactive and reactive maintenance of networks. We will have an increased emphasis on changing customer behaviours to reduce sewer blockages which can lead to flooding. We will deliver more sustainable solutions to flooding and work in partnership with other RMAs to deliver integrated flood risk management schemes. Finally, we will be significantly increasing the amount	<p>Noted. This act will be included.</p> <p>Noted. This is a brief summary of roles and responsibilities for each organisation. To be reviewed to ensure that the strategy reflects the key matters.</p> <p>This information will be reviewed and included in chapter 8.</p>
--	---	--

	<p>of real time monitoring and telemetry we have on our network to better understand and manage flood risk. Full details of our objective at http://www.stwater.co.uk/2020-plan</p> <p>Chapter 5 – Partnerships</p> <ul style="list-style-type: none"> 5.2 – We welcome the development and use of this tool. We are happy to share our data to be used in this tool, although as we discussed recently, we just need to ensure the necessary controls are in place for our information. <p>Chapter 6 – Communities</p> <ul style="list-style-type: none"> 6.4 – We fully support the balanced view presented in this section. <p>Chapter 7 – Planning</p> <ul style="list-style-type: none"> 7.12 – We would be happy to work with you to develop a good process for coordinating and aligning LLFA and STW comments to the planning authority on planning applications. <p>Chapter 8 – Actions to manage Flood Risk</p> <ul style="list-style-type: none"> 8.3 - The Action Plan is not in Appendix 3. 8.33 – We note that these are referred to as ‘schemes’ / ‘schemes which have either been completed or started’, but some listed here are ‘SWMPs’. 8.39 – Final sentence is incomplete. <p>Chapter 9 – Flood Risk Management</p> <ul style="list-style-type: none"> 9.6 – We note that sewers can in some ways be sources, pathways and receptors. 	<p>Noted; no further action required.</p> <p>Noted. No further action required.</p> <p>Noted. No further action required in the strategy. This will addressed through Strategic Planning and Flood Risk management.</p> <p>Noted. Inconsistencies to be addressed.</p> <p>Noted; not further</p>
--	---	--

	<ul style="list-style-type: none"> • 9.9 – Refers to ‘summary included below’. We are not clear what evidence is being referred to here. • 9.34 – We note the reference to PLP in the context of individuals playing their part in reducing their own risk. It may be worth referencing that RMAs can in certain instances install PLP as part of a flood risk management / flood alleviation scheme. As discussed, it is something we provide some of our customers. • Preventing sewer blockages – Thank you • 9.45 – May wish to reference water companies • 9.50 – Please considering referencing our AMP6 plans. For instance:- Our AMP6 plans are summarised in our business plan on the website. http://www.stwater.co.uk/2020-plan. It contains 10 key outcomes / objective with 45 associated measures of success / performance commitments. These reflect our statutory duties, customer priorities and customer willingness to pay. There is more the more corporate messages about the plan in general on p01 if you would like to include this e.g. delivering value for money etc. We agree with the reference that the LFRMS should influence the development of future business plans, but this will now be the development of the plan for 2020 to 2025 (AMP 7). • 9.61 - This paragraph would benefit from additional detail on the criteria you work to in order to decide whether to contribute to other RMA schemes. <p>Chapter 10</p> <ul style="list-style-type: none"> • Climate change – You may wish to refer to our approach to managing climate change risk. We have published a recent report, called Future Proofing https://www.stwater.co.uk/environment/adapting-to-climate-change • 10.36 – We would welcome more information about the Green Infrastructure Strategy. <p>Action Plan</p> <ul style="list-style-type: none"> • We fully support the proposal to have an action plan appended to the Strategy that is reviewed on an annual basis • Section 1.1 – We agree the action plan does include actions that involve other RMAs, but we 	<p>action required.</p> <p>Noted; we will include reference to AMP6 in this section.</p> <p>Noted; this paragraph will be revised to provide brief information on criteria.</p> <p>Noted; we will review the document and include reference in the strategy as appropriate.</p> <p>Noted. A statement to be included to</p>
--	--	---

	<p>would recommend adding some text to put in context that the plan does not include all activities being undertaken by other RMAs in Worcestershire</p> <ul style="list-style-type: none"> • Objective 2.2 – There may be opportunities to work together on some of these activities e.g. installing rain gauges, installing PLP. • Objective 2.2 – Bournheath – We recommend further clarification is given regarding the ‘cost’ column. For instance, the Bournheath scheme states £10,000. Is this scheme contribution from WCC? Total scheme cost is likely to be significantly more. • Objective 2.3 – Wribbenhall, Bewdley – We are working with all the relevant RMAs this location, but are not referenced in the action plan • Objective 2.3 – Diglis – We would welcome the opportunity to discuss proposals with you and EA in this location. We are considering what work would be required protect our assets in this location. • Aim 4 – We recommend that reference is made to our AMP6 plans under Objective 4.1 • Aim 4 – We recommend that reference is made to our future plans that WCC as the LLFA could influence. 	<p>reflect this.</p> <p>The Action Plan will be revised to reflect these omissions.</p>
--	---	--