



ENGLISH SEVERN & WYE REGIONAL FLOOD COASTAL COMMITTEE
TUESDAY 8 JANUARY 2019
GLOUCESTERSHIRE COUNTY COUNCIL
GLOUCESTER
GL1 2TG



Members of English Severn and Wye Regional Flood and Coastal Committee

Members of the English Severn and Wye Regional Flood and Coastal Committee are invited to attend a meeting of the Committee on Tuesday 8 January 2019.

09:30 am – Coffee meet and greet

10:00 am – RFCC meeting

The meeting will be held at Gloucestershire County Council, Council Chambers, Shire Hall, Westgate Street, Gloucester GL1 2TG.

Attached is a map of Gloucester showing where Shire Hall is. There are 3 car parks close to shire hall; Westgate St. Car Park, Longsmith St Multi Storey Car Park and Ladybellegate Car Park. They are shown on the map and are probably the best to use. They are pay and display.

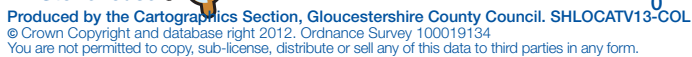
Refreshments will be available from 9:30hrs and a buffet lunch will be provided.

All members are strongly encouraged to read the papers in advance of the meeting. LLFA members are also encouraged to liaise with their Local Flood Risk Management Officers to ensure that they are fully briefed on any issues particularly relevant to their area.

Kind regards



Mike Grimes
Area Director, West Midlands



FROM THE NORTH
CHELTENHAM,
TEWKESBURY,
M5 J11

FROM THE EAST
CIRENCESTER
OXFORD

**St Oswalds
Retail Park**
No.351 (Aston's Coaches)
No.353 (Swanbrook)

Note: these are
infrequent bus services.
Please see timetables
for more details

Legend

- Recommended route from the South & West
- Recommended route from the East & North
- Roads with Cycle Routes for Shire Hall
- Pedestrian route from Bus & Rail Stations
- One Way Traffic Flow
- Traffic light controlled junction
- Public Car Parks close to Shire Hall

Bus Stops for Shire Hall

Arrival / Departure
St Oswalds No.351
(infrequent service - see note)
Waterwells P&R No.507

Bus Station

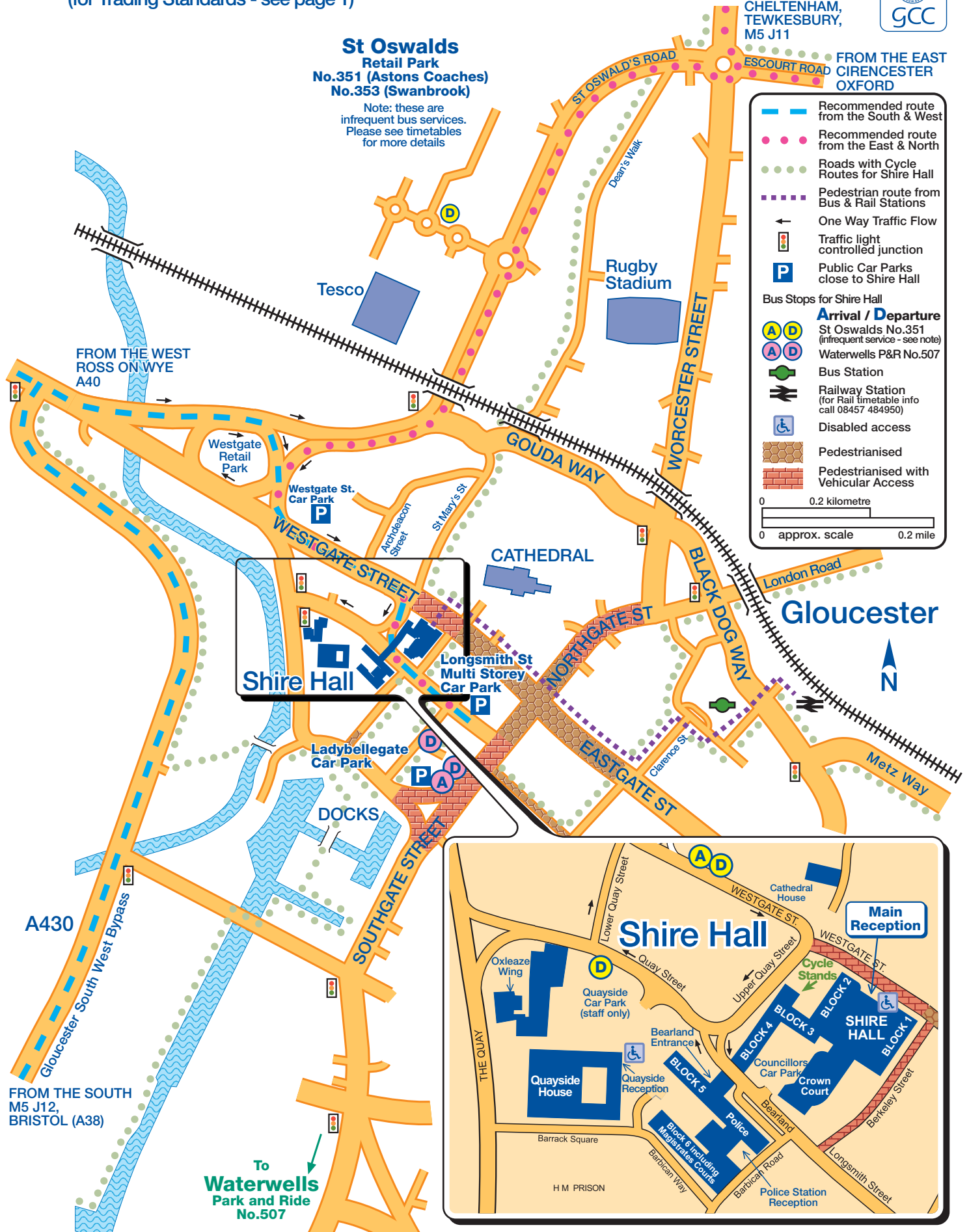
Railway Station
(for Rail timetable info
call 08457 484950)

Disabled access

Pedestrianised

Pedestrianised with
Vehicular Access

0 0.2 kilometre
0 approx. scale 0.2 mile



AGENDA

English Severn and Wye Regional Flood & Coastal Committee

Tuesday 8 January 2019

Arrivals – Tea / Coffee from 09:30hrs

10:00hrs Main Meeting (lunch included)

Gloucestershire County Council, Shire Hall, Westgate Street, Gloucester GL1 2TG

Item No.	Time	Item	Lead	Page
1	10:00 to 10:20	Welcome and Introductions	Chair/Cllr Awford	-
2		Apologies for Absence	Chair	-
3		Chair’s Announcements	Chair	-
4		Declarations of Interest <i>Members to declare interests relating to any of the Agenda items</i>	Chair	-
5		Minutes/Action of Previous Meeting <i>To approve the minutes of the meeting held on October</i>	Chair	1-8
6		Matters Arising from the Minutes	Chair	
		Items for Approval/Decision		
7	10:20 to 10:50	English Severn & Wye RFCC In Year Programme	Rhys McCarthy	9-71
8		2019-2020 Baseline Programme		72-76
9		IDB Precept & Foreign Water Contribution endorsement		77-78
		BREAK		
10	11:10 to 11:50	Defra Natural Flood Management Project Update	Dr John Adams	79-96
11	11:50 to 12:10	Update on Property Flood Resilience Framework (PFR) in Severn & Wye Catchment	Dan Trewin, Tom Meyrick & Heather Shepherd	-
12	12:10 to 12:20	Shipston Area Flood Action Group Update	Michael Green	-
13	12:20 to 12:40	Key Issues/Forward Look	Mark Bowers Ian Jones	-
14	12:40 to 13:00	Matters Arising from Information Papers	Chair	-
		Any Other Business	Chair	-
		Closing Remarks	Chair	-
LUNCH				
15	13:30 to 14:00	Gloucestershire Local Projects presentation	Glos CC	

Information Papers

Members are asked to raise any matters arising from the Information Papers on the Agenda or directly with Environment Agency staff.

	Item	Contact for further details	Page
A	2019/20 FCRM Grant in Aid (GiA)	John Russon Ken Allison	97-108
B	National FECRM Update	John Russon	109-119
C	Enhancing the Environment Through FDGIA Projects – OM4 Performance	Dr John Adams	120-123
D	Flood Forecasting & Flood Resilience Report	Daniel Williamson	124-128

Dates of future RFCC Meetings

Date	Venue
16 April 2019	TBC

Members' Expenses

Members are reminded that expense claims should be submitted within one month of being incurred. Claims covering a period in excess of one month should be avoided.

Members' expense claim forms should be returned to:

Lucy Evans – Hafren House, Welshpool Road, Shrewsbury SY3 8BB

lucy.evans1@environment-agency.gov.uk

Paper by: Area FCRM Programme Manager

Subject: English Severn & Wye RFCC Capital and Local Levy Programme update 2018/19

Recommendation

The English Severn & Wye Regional Flood and Coastal Committee (RFCC) is asked to:

1. note the 2018/19 Capital and Local Levy programme.
2. note the in year efficiency targets for all Risk Management Authorities for 2018/19.
3. approve the variations to the 'in year' programme since the last committee meeting detailed in Appendix 2.

1.0 Introduction

- 1.0 The purpose of this paper is to update the English Severn & Wye RFCC on the 2018/19 capital and Local Levy programme. The paper also highlights the Environment Agency's revenue budget. It presents the latest information provided by the project teams at the end of November 2018.

2.0 The English Severn & Wye RFCC contribution to homes better protected (OM2s) in 2015-2021

- 2.1 Schemes in 2018/19 for the English Severn & Wye RFCC are currently forecast to claim 621 Outcome Measures (OM2) delivering reduced flood risk to 621 households through the 6 year capital investment programme. Already in the first 3 years (2015/16 – 2017/18) of the 6 year capital investment programme 1,284 homes have benefited from reduced flood risk.
- 2.2 It should be noted that the revenue programme continues to maintain and reduce flood risk to thousands of households across the English Severn & Wye RFCC area.
- 2.3 The English Severn & Wye RFCC has a target of reducing flood risk to 2,965 households over the 6 year capital programme 2015-2021. This feeds into the national commitment to reduce flood risk to 300,000 households within this time period across England.
- 2.4 The English Severn & Wye RFCC is currently forecasting to be 845 households above its target by 2021. To ensure that the 2,965 households protected target is achieved and to counter any slippage of what is currently forecast the programme will need to be strengthened. Work is continuing to strengthen the 6 year programme by developing a pipeline of projects which could be brought in as and when opportunities occur.

- 2.5 Table 2.1 below shows the accumulative households protected profile currently forecast over the 6 years for the English Severn & Wye RFCC. Table 2.2 shows the numbers achieved for the first 3 years of the programme and those forecast for the remaining years up to 2021.

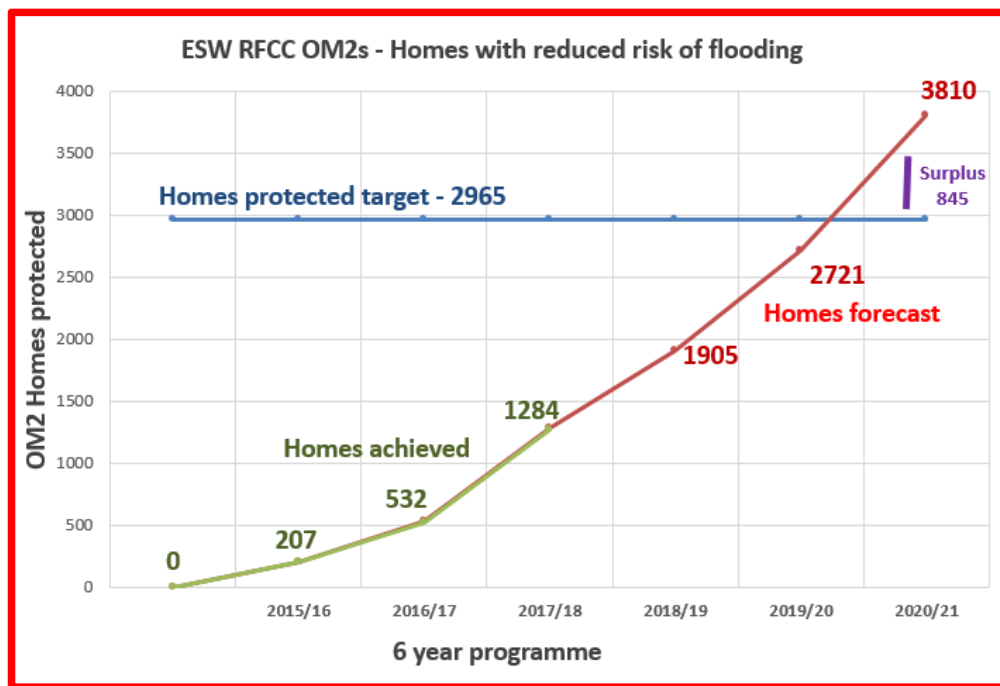


Table 2.1 Homes better protected profile for the English Severn & Wye RFCC over the 6 years

Outcome Measures - homes with reduced flood risk (OM2)					
Year 1 (2015/16) Achieved	Year 2 (2016/17) Achieved	Year 3 (2017/18) Achieved	Year 4 (2018/19) Forecast	Year 5 (2019/20) Forecast	Year 6 (2020/21) Forecast
207	325	752	621	816	1,089
				total RFCC	3810
					Target 2965

Table 2.2 Homes better protected numbers for the English Severn & Wye RFCC over the 6 years

3.0 2018/19 Capital Programme

- 3.1 The 2018/19 English Severn & Wye RFCC programme is summarised in Table 3.1 below. A list of the projects within this programme is given in Appendix 1.

	Capital Expenditure	ESW budget 2018/19 (£K)	ESW End of Year Forecast (£K)	Variance
GiA	Salaries	904	904	0
	EA	5,694	5,945	251
	RMA	1,094	1,035	-59
	Totals	7,692	7,884	192
LL	EA	908	666	-242
	RMA	487	393	-94
	Totals	1,395	1,059	-336
	Overall Totals	9,087	8,943	-144

Table 3.1 Funding for 2018/19 ESW RFCC Capital Programme

- 3.2 To bring in £7.7 million Flood Defence Grant in Aid (FDGiA) from central government over £1 million has been raised through partnership funding locally. Further details of which can be found in Appendix 1 under public and private contributions.
- 3.3 A further £4 million in partnership funding is associated to the Severn Estuary SAC project bringing the total partnership funding brought into the English Severn & Wye RFCC in 2018/19 to just over £5 million.
- 3.4 The latest figures indicate that the end of year out-turn for 2018/19 is currently forecast to be within 2% of the allocated budget (98% of budget delivered). This is within the 10% overall programme tolerances.
- 3.5 Appendix 2 lists the variations to the 'in year' programme since the last committee meeting. The English Severn & Wye RFCC is asked to approve the formal requests to amend projects. Appendix 3 provides project updates for the committee.

4.0 2018/19 Revenue Programme

- 4.1 The 2018/19 revenue budgets for the Environment Agency for the English Severn & Wye RFCC are summarised in table 4.1 below along with the current year to date spend as of November 2018.

	Allocated Funding (£K)	Spend to date (£K)
EA FCRM Area teams GiA Revenue Salaries & Operational Costs	2,741	1,913
Non FCRM teams part funded by FCRM	1,267	813
Foreign Water Contributions	215	202
EA FCRM GiA Revenue Projects	131	245
Directors Challenge	-96	0
EA FCRM Ops Field Teams Operational costs (non projects)	2,836	2,059
EA FCRM GiA Revenue Maintenance Costs (Frequent and Intermittent)	1,657	646
	8,751	5,878

Table 4.1 EA Revenue Funding for 2018/19

- 4.2 The current spend to date as of November is 67% of the total allocated funding, which is just ahead of the profiled budget at this stage of the year. The forecast end of year outturn is currently projecting an overspend of £300k. This is expected to reduce to within £100K of the budget allocation by the end of the year.

5.0 Efficiencies

- 5.1 In 2015/16 (Year 1) the English Severn & Wye RFCC achieved efficiencies totalling over £700K. This was from a target of £400K giving an efficiency total of 175% of target.
- 5.2 In 2016/17 (Year 2) the English Severn & Wye RFCC achieved efficiencies totalling over £1.5 million from a target of £830K giving an efficiency total of 180% of target.
- 5.3 In 2017/18 (Year 3) the English Severn & Wye RFCC achieved efficiencies totalling over £1.2 million from a target of £350K giving an efficiency total of 350% of target.
- 5.4 The efficiency target for 2018/19 (Year 4) for the English Severn & Wye RFCC is £800K. In the first two quarters of 2018/19 the English Severn and Wye RFCC has had over £400K of efficiency claims accepted with a further £300K forecast for quarters three and four. Table 5.1 below gives a breakdown of these efficiencies.

English Severn and Wye RFCC			Efficiency Monitoring (GiA) 6 year programme				
			Year 3 (2018/19)				
Project Name	%GiA	RMA	Q1	Q2	Q3	Q4	total
Appraisal & Delivery package	100	EA	71,219				£ 71,219
Property Level Resilience (PLR) Package	50	EA	152,000	152,000	152,000	152,000	£ 608,000
West Midlands Local Governance Savings	100	EA		64,309			£ 64,309
		Totals					£ 743,528
		Targets					£ 788,295
		% of target					94%

* Claims in red have been submitted but not yet approved

Table 5.1 Breakdown of efficiencies for 2018/19

- 5.5 The Environment Agency is working closely with all Risk Management Authorities to assist them in claiming efficiencies.
- 5.6 Any efficiencies made by the English Severn & Wye RFCC are reinvested within the 6 year programme. Projects that have been accelerated into the programme since the original allocation in 2015/16 benefit from these efficiencies. Examples of recent projects that have benefitted are the Hereford City Strategic Flood Alleviation Scheme and Chesholme Road, Surface Water Scheme, Coventry. All projects which feature in the additional programme in Appendix 1 benefit from efficiencies made by the English Severn & Wye RFCC.

6.0 Asset Management

- 6.1 The National target is to achieve 97% or greater of all Environment Agency (EA) maintained assets in high consequence systems being at their required condition to perform their function.
- 6.2 This is reported via Key Performance Indicator (KPI) 962. At the start of September 2018 for the English Severn & Wye RFCC 98.5% of all EA maintained assets were at their required condition and 97.9% of third party assets were at their required condition.
- 6.3 KPI 965 is a measure of the number of households that would benefit from reduced flood risk should assets which have been identified as being below their required condition be brought back up to that required condition. The KPI 965 position for the English Severn & Wye RFCC at the start of June is 371 households for EA owned assets and 32 households for 3rd party owned assets.

7.0 Recommendations

- 7.1 The committee are asked to:
1. note the 2018/19 Capital and Local Levy programme.
 2. note the in year efficiency targets for all Risk Management Authorities for 2018/19.
 3. approve the variations to the 'in year' programme since the last committee meeting detailed in Appendix 2.

Rhys McCarthy,
English Severn & Wye FCRM Programme Manager

December 2018

ESW CAPITAL PROGRAMME 2018 / 19			ESW 2018 / 19 Programme				Outcome Measures 2018 / 19				Outcome Measures 6 Year Programme 2015 - 2021					
Project Name		RMA	2018/19 Total Budget	GIA	Local Levy	Public / Private Contributio	End Of Year Forecast	OM2 Homes Better	OM4a	OM4b	OM4c	OM2 Homes Better Protected	OM4a	OM4b	OM4c	
PLR Package	Allesley, River Sherbourne, Natural Flood Risk Management Scheme	Environment Agency	172,000	12,000	120,000	40,000	171,724					34				
	Alney Island Improvements, River Severn	Environment Agency	150,000	150,000	0	0	135,626									
	Badsey Brook (Broadway, Childswickham and Murcot) FAS	Environment Agency	572,019	515,663	356	56,000	623,613	250				250				
	Barbourne Brook FAS	Environment Agency	12,000	0	12,000	0	12,000									
	Bennetts Road, Keresley, Flood Alleviation Scheme	Coventry City Council	10,000	10,000	0	0	10,000					14				
	Bewdley PLP	Environment Agency	82,000	0	82,000	0	82,000	20				44				
	Bishops Cleeve, Gloucestershire Flood Alleviation Scheme	Gloucestershire	80,000	0	80,000	0	0									
	Coal Brook, Coalbrookdale, Flood Relief Works	Telford & Wrekin	60,000	30,000	30,000	0	60,000					39				
	Colwall, Flood Alleviation Feasibility	Herefordshire Council	42,000	0	42,000	0	42,000					5				
	Ewyas Harold	Environment Agency	38,000	0	38,000	0	25,577									
	Gosford Brook, Brimfield, Flood Alleviation Scheme	Herefordshire Council	21,000	0	21,000	0	21,000									
	Hampton Bishop	Environment Agency	30,000		30,000	0	30,000									
	Longden, Flood Alleviation Scheme	Shropshire Council	16,000	6,000	7,500	2,500	8,500									
	Lucy's Mill H&S Improvement Works	Environment Agency	200,000	200,000	0	0	200,000									
	Orleton, Flood Alleviation Scheme, Herefordshire	Herefordshire Council	25,000	0	25,000	0	25,000									
	Pershore Scheme Improvements	Environment Agency	45,000	0	45,000	0	30,000									
	River Avon / Severn Fish Pass - Abbey Mill	Environment Agency	318,400	318,400	0	0	350,240								10	
	River Lugg, Leominster Flood Alleviation Scheme Improvements	Environment Agency	808,156	605,000	203,156	0	600,954					251				
	Rural SuDS Pilot - River Frome Stroud Valleys	Stroud District Council	55,000	0	55,000	0	55,000									
	Severn Stoke FAS, River Severn	Environment Agency	180,000	0	180,000	0	25,000					21				
	Stratford-Upon-Avon, Racecourse Brook, Flood Risk Management Scheme	Environment Agency	94,000	94,000	0	0	71,684					47				
	Sud and Twyver Flood Risk and Restoration Project	Environment Agency	297,000	252,000	45,000	0	271,851					370				
	Undefended Properties in the Ironbridge Gorge Individual Property Protection	Telford & Wrekin	117,000	0	117,000	0	117,000									
	Upper Brookstray, Coventry, Flood Alleviation Scheme	Environment Agency	226,000	226,000	0	0	198,107					55				
	Upper Framilode Flood Alleviation Scheme	Environment Agency	64,800	0	64,800	0	54,800									
	Upper Hearne Brook FAS (Beeches Road)	Cheltenham Borough	25,000	25,000	0	0	25,000									
	Warwick, St Johns Brook, Flood Alleviation Scheme	Environment Agency	64,000	64,000	0	0	72,536					203				
	Wesley Brook, Shifnal, Flood Alleviation Scheme	Shropshire Council	222,000	172,000	50,000	0	222,000					87				
	Withybrook, Warwickshire Flood Alleviation Scheme	Severn Trent Water	467,000	0	0	467,000	439,000					9				
	Worthen, Flood Alleviation Scheme	Shropshire Council	19,000	8,000	11,000	0	8,000									
	SHWG PLR Pakcage	Environment Agency	49,997	0	49,997	0	55,850					367				
	CAPITAL SALARIES			904,000				904,000								
	WFM CONTRACTORS			22,000				34,000								
	Support Schemes															
	Environment Programme	N2K River Restoration Rivers Wye & Lugg	Environment Agency	40,000	40,000	0	0	40,000						18		
		Puxton and Stourvale Marshes, Kidderminster, WLMP	Environment Agency	20,000	20,000	0	0	20,000								
		Recovery of the Severn Estuary SAC and delivery of River Teme (SSSI) river restoration restoration plan	Environment Agency	5,389,500	1,350,000	0	4,039,500	5,708,543								242
		River Clun/Teme SAC and SSSI - Unmuddying the Waters	Environment Agency	431,000	190,000	0	241,000	199,000					4			19
Hydrometry & Telemetry	Burcote Foundations Repair	Environment Agency	10,550	4,550	0	0	10,552									
	Radar Levels Upgrade	Environment Agency	9,000	4,000	0	0	6,950									
Flood Resilience	Automated system for property statistics during an incident	Environment Agency	40,000	40,000	0	0	40,000									
Recondition Works	Yelvertoft FSA Recondition Works	Environment Agency	60,000	60,000	0	0	60,000									
Natural Flood Management	NFM - River Lugg and Wye integrated Natural Flood Management	Environment Agency	195,000	195,000	0	0	195,000									
	NFM - Shropshire Slow the Flow - Severn Tribs	Environment Agency	195,000	195,000	0	0	195,000									
	NFM - Worcestershire Avon/Cotswold Escarpment Tributaries	Environment Agency	153,000	153,000	0	0	153,000									
	Com NFM - Yazor Brook Flood Alleviation	Environment Agency	36,500	36,500	0	4,000	38,427									
	Com NFM - Twyver Natural Flood Management Project	Environment Agency	25,000	25,000	0	0	29,000									
Invest to Save	Hereford Barriers Invest to Save	Environment Agency	50,000	50,000	0	0	56,553									
	Shrewsbury Barriers Invest to Save	Environment Agency	50,000	50,000	0	0	45,950									
	Bewdley Barriers Invest to Save	Environment Agency	65,000	65,000	0	0	63,569									
Additional Programme																
	Alscot Park Weir	Environment Agency	85,000	35,700	0	49,300	26,730									
	Alcester FAS	Environment Agency	85,000	0	85,000		85,000					118				
	Avon Sluices MEICA and Initial Assessment	Environment Agency	85,000	85,000	0	0	95,199									
	Avon Weirs Initial Assessment	Environment Agency	41,175	41,175	0	0	41,175									
	Bowness Close Trash Screen Replacement	Coventry City Council	25,335	25,335	0	0	14,855					37				
	Brockworth, Gloucestershire Surface Water Scheme	Gloucestershire	157,000	142,000	15,000	0	142,000	2				2				
	Canberra Road - Trash Screen Replacement	Coventry City Council	50,000	50,000	0	0	50,202	26				26				
	Cherington, Shipston-on-Stour, FAS	Warwickshire County	10,000	0	0	10,000	29,973	3				11				
	Chesholme Road, Coventry, Surface Water Flood Alleviation Scheme	Coventry City Council	68,788	28,788	20,000	20,000	68,788	11				11				
	Churchdown Surface Water Scheme	Gloucestershire	84,000	71,000	13,000	0	71,000	13				13				
	Epney Kiosk Renovation	Environment Agency	85,000	85,000	0	0	85,000									
	Fenny Compton, Flood Alleviation Scheme	Warwickshire County	325,000	325,000	0	0	343,000					15				
	Hereford City Strategic Flood Alleviation Scheme	Herefordshire Council	250,000	50,000	0	200,000	250,000									
	River Lugg, Leominster FRMS (Kenwater Flood Wall Repairs)	Environment Agency	87,000	49,000	38,000	0	87,000	85				85				
	Ladbroke, Southam, Lot Brook, Flood Alleviation	Warwickshire County	14,500	0	0	14,500	24,406	3				6				
	Marlbrook Quarry Moderation Project	Environment Agency	80,000	80,000	0	0	80,000									
	Pailton, Rugby, Flood Alleviation Scheme	Warwickshire County	37,600	35,600	0	2,000	900	12				12				
	Ross-on-Wye FAS Upgrade	Herefordshire Council	45,000	45,000	0	0	45,000	38				38				
	Severn Eel Pass Wedderburn	Environment Agency	2,800	2,800	0	0	2,400									
	Slow the Flow - Shropshire Rivers	Shropshire Council	70,000	70,000	0	0	70,000								10	
	SHWG Area Capital Landscape Establishment	Environment Agency	692	692	0	0	692									
	Snitterfield Emergency Works - EA and WCC	Environment Agency	45,000	45,000	14,000	0	56,000					37				
	Stourbridge Gauging Station Repair	Environment Agency	75,000	75,000	0	0	38,816									

Appendix 2

ESW RFCC, 8th January 2019: Significant Project Variances (e.g. +/-15% of total project costs or resulting in a significant change of project outcomes)

Project variations involving FDGiA for the RFCC to note

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Yelvertoft Brook Flood Storage Area	Environment Agency Ian Jones	New project which will deliver 26 homes better protected through a recondition asset scheme. Allocated £60K FDGiA in 2018/19 and £40K FDGiA in 2019/20.	Yelvertoft Brook Flood Storage Area is an on-line flood storage area that reduces flood risk to 26 homes. Following an inspection, the Catchment Engineer has concluded that work is now needed to the storage area to ensure the scheme continues to operate safely.	Note the additional recondition project with an allocation of £60K FDGiA in 2018/19 and £40K FDGiA in 2019/20.
Bagley Brook Outfall Replacement	Environment Agency Mark Bowers	Scheme deferred into the pipeline programme beyond 2021.	Further investigation into the viability of this scheme has shown that currently the Partnership Funding score cannot be raised high enough to attract FDGiA funding. The scheme will now be moved into the pipeline programme to be accelerated back into the current programme as and when further funding options become available. Further assessment looking into the viability of a scheme will continue. The scheme was hoping to deliver 57 homes better protected by 2021.	Note the deferral of the scheme into the pipeline programme beyond 2021.

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Podsmead SUDS Scheme	Gloucestershire County Council	<p>Reprofiling of £50K FDGiA from 2019/20 into 2020/21.</p> <p>Reprofiling of £106K public contributions from 2018/19 into 2020/21.</p> <p>Reprofiling of 55 homes better protected from 2020/21 into the pipeline.</p>	<p>Due to a large construction programme this year within the council the Podsmead SUDS scheme has had to defer its delivery.</p> <p>The scheme was hoping to deliver 55 homes better protected by 2021 but will now move its delivery into the pipeline programme beyond 2021.</p> <p>The funding will all be moved into 2020/21 where it may be possible to deliver the scheme earlier if opportunity allows.</p>	Note the deferral of the delivery of the homes better protected into the pipeline programme.
Brockworth Surface Water Scheme	Gloucestershire County Council	Reduction from 35 homes better protected (OM2s) in 2018/19 down to 2 homes better protected.	<p>Following consultation with the local community there has been limited take up in the installation of PFR measures.</p> <p>As a result the number of homes better protected has been reduced accordingly.</p>	Note the reduction of homes better protected from 35 in 2018/19 down to 2.
Churchdown Surface Water Scheme	Gloucestershire County Council	Reduction from 30 homes better protected (OM2s) in 2018/19 down to 13 homes better protected.	<p>Following consultation with the local community there has been limited take up in the installation of PFR measures.</p> <p>As a result the number of homes better protected has been reduced accordingly.</p>	Note the reduction of homes better protected from 30 in 2018/19 down to 13.

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Bishops Cleeve FAS	Gloucestershire County Council	Scheme deferred into the pipeline programme beyond 2021.	<p>Due to a large construction programme this year within the council the Bishops Cleeve FAS has had to defer its delivery.</p> <p>The scheme will now be moved into the pipeline programme to be accelerated back into the current programme as and when further funding options become available.</p> <p>The Local levy already allocated to this scheme will be used to take it up to full business case while further funding options are considered.</p> <p>The scheme was hoping to deliver 91 homes better protected by 2021.</p>	Note the deferral of the scheme into the pipeline programme beyond 2021.
Stratford Upon Avon, Racecourse Brook FAS	Environment Agency Ian Jones	Reprofiling of 47 homes better protected (OM2s) from 2019/20 into 2020/21.	<p>Work on the business case has allowed the project team to provide more accurate milestones for this project.</p> <p>This has caused the delivery of the homes better protected (OM2s) to be reprofiled. More certainty will be provided once the business case is fully developed.</p>	Note the reprofiling of 47 homes better protected from 2019/20 into 2020/21.
Alney Island FAS Improvements	Environment Agency Mark Bowers	Scheme deferred into the pipeline programme beyond 2021.	<p>Significant Partnership Funding contributions are still required for the scheme to reach 100% on the Partnership Funding Calculator.</p> <p>The scheme will now be moved into the pipeline programme to be accelerated back into the current programme as and when further funding options become available.</p> <p>The scheme was hoping to deliver 75 homes better protected by 2021.</p>	Note the deferral of the scheme into the pipeline programme beyond 2021.

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Warwick St Johns Brook FAS	Environment Agency Ian Jones	Scheme deferred into the pipeline programme beyond 2021.	<p>Significant Partnership Funding contributions are still required for the scheme to reach 100% on the Partnership Funding Calculator.</p> <p>The scheme will now be moved into the pipeline programme to be accelerated back into the current programme as and when further funding options become available.</p> <p>The scheme was hoping to deliver 203 homes better protected by 2021.</p>	Note the deferral of the scheme into the pipeline programme beyond 2021.

*Projects reprofiling FDGiA spend into future years will have to bid through the additional programme process.

Project variations for the RFCC to approve – re-profiling of Local Levy only no additions allocations

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Allesley FAS	Environment Agency Ian Jones	<p>Reprofiling of £183K Local Levy from 2018/19 into 2020/21.</p> <p>Reprofiling of 34 homes better protected (OM2s) from 2019/20 into 2020/21.</p> <p>This is a reprofiling only with no overall increase in project costs.</p>	<p>The draft viability study undertaken suggests that the project in its current form has a very low Partnership Funding score.</p> <p>Work on the outline business case has been postponed whilst the project team identify alternative options to take this scheme forward.</p> <p>Funding profiles and homes protected (OM2s) have been reprofiled into 2020/21.</p>	Approve the reprofiling of £183K Local Levy from 2018/19 into 2020/21.

Project variations for the RFCC to approve – new projects and additional Local Levy funding allocations

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Barbourne Brook FAS	Environment Agency Mark Bowers	<p>Reallocation of £250K Local Levy from the Barbourne Brook FAS to accelerate projects currently sat within the pipeline that can deliver before 2021.</p> <p style="color: red;">This reallocation is in line with the recommendations set down by the English Severn and Wye Task and Finish group at the October RFCC.</p>	<p>The prioritisation of projects which can accelerate and deliver within the 6 year programme (before April 2021) to ensure the 300,000 homes better protected target is achieved is now under way.</p> <p>The Barbourne Brook FAS is currently not forecast to deliver until 2024.</p> <p>The project has a Local Levy allocation in 2019/20 of which a proportion can now be reallocated to projects which can accelerate and deliver homes protected before 2021.</p> <p>The Barbourne Brook project will retain £150K Local Levy in 2019/20 so that it can prepare the business case ready to start delivery within the next 6 year programme from 2021.</p>	<p>Approve the reallocation of £250K Local Levy from this project to accelerate projects currently sat within the pipeline.</p>
Kenwater (Leominster) Capital Maintenance Works	Environment Agency Mark Bowers	<p>New accelerated project which brings in an additional 85 homes better protected (OM2s) into the programme.</p> <p>The project has been allocated £49K FDGiA and £38K Local Levy in 2018/19.</p> <p style="color: red;">This reallocation is in line with the recommendations set down by the English Severn and Wye Task and Finish group at the October RFCC.</p>	<p>Following a routine inspection of a flood defence wall in Leominster it was recommended that a structural appraisal be conducted.</p> <p>The flood wall is single part of a complex flood scheme which has several elements reliant upon each other for effective operation.</p> <p>Following the appraisal results Capital Maintenance Works will take place to increase the protection of the scheme.</p> <p>This pipeline scheme was discussed at the September local choices meeting in Shrewsbury as an opportunity for acceleration into the current 6 year programme.</p>	<p>Approve the acceleration of 85 homes better protected (OM2s) into the programme.</p> <p>Approve the reallocation of £38K Local Levy into 2018/19.</p>

Project Name	Lead Manager	Project Variation	Explanation	Request to RFCC
Alcester FAS	Environment Agency Ian Jones	<p>New accelerated project which brings in an additional 118 homes better protected (OM2s) into the programme.</p> <p>The project has been allocated £85K Local Levy in 2018/19, £200K FDGiA in 2019/20 and £65K FDGiA in 2020/21.</p> <p>The project has contributions of £900K from Warwickshire County Council.</p> <p>This reallocation is in line with the recommendations set down by the English Severn and Wye Task and Finish group at the October RFCC.</p>	<p>The flood defences at Alcester, Warwickshire, protect residential and commercial properties within the town.</p> <p>A recent modelling report has suggested that these defences could be upgraded to offer a better standard of protection to the community.</p> <p>The scheme will better protect a minimum of 118 homes and this figure is likely to significantly increase once further assessments have been conducted.</p> <p>There are opportunities to deliver enhanced environmental benefit in the form of improved fish passage along the River Arrow and River Alne as part of this scheme.</p>	<p>Approve the acceleration of 118 homes better protected (OM2s) into the programme.</p> <p>Approve the reallocation of £85K Local Levy in 2018/19.</p>
PLR Package	Environment Agency Mark Bowers	<p>Acceleration of 227 homes better protected (OM2) within the PLR Package.</p> <p>Additional allocation of £173K Local Levy and £700K FDGiA in 2019/20 and 2020/21 to bring in the additional 227 home better protected (OM2s).</p> <p>Taking the total number of homes better protected (OM2s) for this scheme up to 367.</p> <p>This reallocation is in line with the recommendations set down by the English Severn and Wye Task and Finish group at the October RFCC.</p>	<p>The PLR Package can now be accelerated with the release of the 'Property Flood Resilience' framework in December, which will be utilised for the procurement of detailed property surveys and the installation of Property Flood Resilience measures.</p> <p>The delay in the framework has resulted in the need to re-profile funding.</p> <p>The number of prospective homes protected (OM2s) to be delivered before 2021 has also been increased to 367.</p> <p>A further 300+ homes remain within the pipeline programme beyond 2021 ready to be accelerated in should funding and opportunity become available.</p>	<p>Approve the acceleration of 227 homes better protected (OM2s) into the programme.</p> <p>Approve the reallocation of £173K Local Levy in 2019/20 and 2020/21.</p>

English Severn & Wye Regional Flood and Coastal Committee
Meeting date: 16 October 2018

Item 7

Appendix 3

Updates in since last RFCC meeting in **red**. Projects that are programmed to deliver OM2s within the 6 year programme have been given a delivery confidence rating. See table below for explanations.

Confidence in Number of homes better protected	Confidence in Delivery of homes before March 2021
1 (Low) - e.g. Based on GIS / Estimate	1 (Low) - e.g. Homes delivery expected to be post March 2021
2 (Medium-Low) - e.g. Initial modelling carried out	2 (Medium-Low) - e.g. Significant concerns homes delivery will be post March 2021
3 (Medium-High) - e.g. Number of homes verified/approved	3 (Medium-High) - e.g. Low level concerns homes delivery will be post March 2021
4 (High) - e.g. In Construction	4 (High) - e.g. High confidence that homes delivery will be pre March 2021
5 (Scheme completed) - e.g. OM2s have been claimed	5 (Scheme completed) - e.g. OM2s have been claimed

Projects in Metropolitan Borough of Dudley

Stourbridge Gauge – River Stour

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£78,000	£78,000	£0	£0	£75,000	-	n/a	n/a	AMCO



Stourbridge Gauge.

Details:

These works are to repair a collapsed bank and re-establish access to a gauging station.

Key Partners:

The Environment Agency.

Status:

The contractor, AMCO, will be on site 13 December 2018 to 20 December 2018.

Updates:

Since last quarter, permit application has been approved and works will commence on the 13 December 2018.

Projects in Coventry

Allesley Flood Risk Management Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£1,746,000	£456,000	£800,000	£490,000	£172,000	34 OM2	2 (Medium-Low)	2 (Medium-Low)	-



Flooding along Butt Lane, Allesley (2008)

Details:

This is a Flood Risk Management scheme in Coventry to reduce flood risk to 34 properties at risk of flooding from the River Sherbourne, its tributaries and from surface water. The preferred way forward is likely to consist of a combination of upstream flood storage and natural flood management.

Key Partners:

Environment Agency, Coventry City Council, Warwickshire Wildlife Trust, Land owners and residents. Coventry City Council have contributed £440k and a private developer has contributed £50k.

Status:

The Strategic Outline Business Case (SOC) was approved in August 2017. A viability assessment has been carried out on the proposed flood storage area, this showed an increase in estimated flow and storage volume required, increasing the costs substantially to £5.6M. It also showed that the storage area would not prevent flooding of all properties downstream in Allesley. The large flood storage solution is no longer being progressed.

Updates:

Since last quarter, following the outcome of the viability assessment the Project Board has decided that the long-list of options needs to be revisited and alternative solutions investigated. A collaboration agreement has been signed with Warwickshire Wildlife Trust to lead on the natural flood management aspect of the project. Warwickshire Wildlife Trust have commenced catchment walkovers and organised meetings with key landowners.

Canberra Road, Aldermans Green, Coventry

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Coventry City Council	£50,000	£50,000	£0	£0	£50,000	26 OM2	3 (Medium-High)	4 (High)	-

Details:

Trash Screen Replacement on an unknown ordinary watercourse.

Key Partners:

The Environment Agency and Coventry City Council.

Status:

Project application to accelerate into this year (2018/19) has been accepted.

Updates:

No further updates at this time.

Flood Alleviation Scheme, Bennetts Road, Keresley

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Coventry City Council	£150,000	£150,000	£0	£0	£10,000	14 OM2	3 (Medium-High)	3 (Medium-High)	-



Photo from Coventry City Council of Bennetts Road.

Details:

This scheme is to reduce the impact of flooding to 14 properties through a proposed upstream storage area and culvert improvements.

Key Partners:

Coventry City Council using FCRM GIA Funding

Status:

Brought forward into the six year programme, with the aim of it being ready for service by March 2020.

Updates:

No further updates at this time.

Springfield Brook (ordinary watercourse), Bowness Close, Radford, Coventry

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Coventry City Council	£25,335	£25,335	£0	£0	£25,335	37 OM2	5 (Scheme completed)	5 (Scheme completed)	-



Springfield Brook Trash Screen.

Details:

This is a Trash Screen Replacement scheme in Coventry to reduce the flood risk to 37 properties from the screen becoming completely blocked causing Springfield Brook to backup and overflow adding to the surface water flooding.

Key Partners:

Coventry City Council scheme using FCRM GIA Funding, EA is supporting, no other partners involved.

Status:

Project has been delivered.

Updates:

Awaiting final paperwork to be sent in, OM2s have been claimed.

Upper Brookstray Flood Risk Management Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£653,000	£478,000	£0	£175,000	£226,000	55 OM2	3 (Medium-High)	3 (Medium-High)	-



Brookstray adjacent to Broad Lane at culvert entrance

Details:

This is a Flood Risk Management scheme in the Upper Eastern Green area of Coventry to reduce flood risk to 55 properties at risk of flooding from the Brookstray (tributary of the River Sherbourne) and from surface water.

Key Partners:

Environment Agency, Coventry City Council, Warwickshire Wildlife Trust, Land owners and residents. Coventry City Council have contributed £350k and a developer has contributed £86k through an s106 Agreement towards the project.

Status:

The Strategic Outline Business Case (SOC) was approved by NPAS on 22 August 2018. Work is currently ongoing on updating the existing model including a topographical survey. The outcome on the viability assessment of the project is now forecast for end of December 2018. Construction is planned to start in February 2020 with completion in November 2020, subject to the relevant approvals and funding being in place.

Updates:

The Outline Business Case (OBC) pricing return is currently being considered with the OBC planned to commence following the outcome of the viability assessment. A collaboration agreement has been signed with Warwickshire Wildlife Trust to lead on the natural flood management aspect of the project.

Chesholme Road, Coventry, Surface Water Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Coventry City Council	£68,788	£28,788	£20,000	£20,000	£68,788	11 OM2	5 (Scheme completed)	5 (Scheme completed)	-



Swale, as-built. Chesholme Road, 2018

Details:

This project is part of a joint scheme with Severn Trent Water to reduce flood risk to 11 properties at risk of flooding from multiple sources. The project will involve a combination of local SuDS and highway drainage surface water separation, including storage to attenuate discharge to the Hall Brook with a new outfall to the Hall Brook by converting an existing duplicate foul sewer.

Key Partners:

Coventry City Council and Severn Trent Water. Both partners have contributed £10k each to the scheme.

Status:

The project was completed in November 2018. By delivering this SuDS feature in parallel with a major investment in the drainage network in the area, the swale is able to deliver flood risk benefits as part of an overall strategy to manage surface water flood risk.

Updates:

We are currently finalising landscaping arrangements with local residents. The photograph above shows the subtle nature of the swale. The project costs came in £13,000 under the estimated value due to an expected gas main diversion not being required and efficiencies in traffic management costs.

Rowley's Green Lane, Coventry, River Sowe, Property Flood Resilience Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£40,000	£16,700	£17,300	£0	£2,500	5 OM2	3 (Medium-High)	3 (Medium-High)	-



Flooding along Rowley's Green Lane (2008).

Details:

This is a Property Flood Resilience (PFR) Scheme in Rowley's Green Lane, Coventry, to reduce flood risk to 5 properties from the River Sowe.

Key Partners:

Coventry City Council, Residents.

Status:

After several delays the Property Flood Resilience (PFR) Framework is now live. The formal tender process is expected to begin December 2018. The business case is now forecast for January 2019 with construction due to commence May 2019.

Updates:

The PFR Framework is now in place which has led to the project progressing to the tender stage.

Projects in Gloucestershire

Alney Island, Gloucester

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£502,354	£193,000	£304,354	£0	£150,000	75 OM2	2 (Medium-Low)	1 (Low)	TVO

Details:

The Environment Agency is progressing with proposals to reduce the risk of flooding from the River Severn for up to 75 properties at Alney Island, Gloucester.

Consultants (TVO) in consultation with the community and other stakeholders have identified a preferred solution. This comprises a combination of measures, including sheet piling, raising and re-aligning existing flood walls and embankments, and local ground-raising. TVO have commenced the detailed design phase of the scheme.

Status:

The latest project costs for the scheme are estimated to be between £2.9 and £3.5million (this includes the appraisal, design, construction and maintenance over the lifetime of the scheme). The range in costs relates to the “best case & worse case” allowance associated with the risk of unknown ground conditions for the sheet piling flood wall solution. At the moment we have identified a funding shortfall for this project of approximately £1.4million (based on worse case) and are investigating options for securing this funding.

Bishops Cleeve, Gloucestershire Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucestershire County Council	£222,000	£0	£80,000	£142,000	£80,000	91 OM2	2 (Medium-Low)	2 (Medium-Low)	-

Details:

This is a Gloucestershire County Council led scheme to reduce surface water flooding to properties in the Bishops Cleeve area in the Borough of Tewkesbury (including Woodmancote and Southam). An estimated 90-100 properties were flooded in this area in 2007 as a result of pluvial flooding and water exceeding the capacity of the surface water drainage network.

Key Partners:

Gloucestershire County Council are leading on this project with financial support from FCRM GIA and Local Levy from the Severn and Wye Regional Flood and Coastal Committee.

Status:

Gloucestershire County Council commissioned a Surface Water Management Plan which covered this area in July 2011. Atkins have updated the modelling carried out for the SWMP and their reports were submitted to the Council in February 2018.

Updates:

Gloucestershire County Council are compiling information needed for an Outline Business Case and conducting a gap-analysis to identify which areas need support from the Programme Delivery Unit.

Brockworth Property Level Protection

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucestershire County Council	£177,000	£142,000	£15,000	£20,000	£157,000	35 OM2	2 (Medium-Low)	4 (High)	-

Details:

This is a Gloucestershire County Council led Property Level Resilience scheme to provide a level of protection from surface water flooding for properties in Brockworth, Gloucestershire.

Key Partners:

Gloucestershire County Council is delivering this project in parallel with the Churchdown Property Level Resilience project for efficiencies.

Status:

Maltby Surveys conducted threshold surveys on 275 properties in Brockworth over February / March 2018 at a cost of £3,960. Gloucestershire County Council has been preparing the Business Case to apply for funding for the final phase of the project.

Updates:

Gloucestershire County Council has completed community engagement with the residents whose properties are eligible for PLR and has procured building surveys on those properties where residents are accepting of PLR. The report will be submitted to Gloucestershire County Council in December 2018 and will confirm the property numbers that will be better protected from flood risk by PLR. Gloucestershire County Council are working with contractors to agree a programme of works whilst completing the business case.

Churchdown Property Level Protection

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucestershire County Council	£104,000	£71,000	£13,000	£20,000	£84,000	30 OM2	2 (Medium-Low)	4 (High)	-

Details:

This is a Gloucestershire County Council led Property Level Resilience scheme to provide a level of protection from surface water flooding to properties in Churchdown, Gloucestershire.

Key Partners:

This work will be completed in parallel with the Brockworth Property Level Resilience project for efficiencies.

Status:

Maltby Surveys has conducted threshold surveys on 70 properties in Churchdown over February/ March 2018 at a cost of £960. Gloucestershire County Council has been preparing the Business Case to apply for funding for the final phase of the project

Updates:

Gloucestershire County Council has completed community engagement with the residents whose properties are eligible for PLR and has procured building surveys on those properties where residents are accepting of PLR. The report will be submitted to Gloucestershire County Council in December 2018 and will confirm the property numbers that will be better protected from flood risk by PLR. Gloucestershire County Council are working with contractors to agree a programme of works whilst completing the business case.

Community NFM – Twyver Natural Flood Management Project

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucester City Council	£50,000	£50,000	£0	£0	£0	Gloucester City Council	n/a	n/a	-

Details:

This is a Defra Community Natural Flood Management Project. (The project is included in the Sud and Twyver package of works mentioned separately).

Key Partners:

Key partners involved are Gloucester City Council, Gloucestershire Wildlife Trust, Stroud District Council and Gloucestershire County Council.

Status:

The project is Defra funded to 2021 (initial funding £50k, with a further £30k awarded from Defra Reserve Allocation).

Updates:

10 leaky dam structures have been installed at Kites Hill Nature Reserve in partnership with the World Land Trust. Livestock fencing at the Reserve has been programmed for next year. The University of Gloucestershire are carrying out monitoring of watercourses at Kites Hill where work is programmed for next year (i.e. BEFORE data). This monitoring should be completed by the end of November 2018. Discussions have been held with the World Land Trust regarding new visitor interpretation. Gloucestershire Wildlife Trust have met with a major landowner at a further site in the catchment and undertaken a whole farm survey. Discussions have started on the implementation of measures on the farm including soil restoration, tree planting, woody dams and fencing.

Epney Kiosk Renovation

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£100,000	£100,000	£0	£0	£85,000	Environment Agency	n/a	n/a	-



General view of Epney river level recorder station looking downstream

Details:

The Epney river level recorder provides flood warning levels in the tidal reach of the River Severn below Gloucester. The existing site has reached the end of its economic life, and maintenance and repair costs are rapidly rising. The existing structure is to be removed including all in-river structures. A smaller installation using modern level measurement sensors is to be installed on the flood wall.

Status:

The Design phase is nearing completion.

Podsmead Playing Field Sports Complex SuDS

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucestershire County Council	£156,700	£50,000	£0	£106,700	£106,700	55 OM2	2 (Medium-Low)	2 (Medium-Low)	-

Details:

This is a Gloucestershire County Council-led potential scheme to reduce surface water flooding to properties within the Podsmead area of Gloucester. The current proposal is to install a surface water attenuation feature within the Black Ditch Field. The scheme will be designed so that it can be carried out independently or integrated into a potential sports complex development incorporating Sustainable Drainage System principles.

Key Partners:

This potential scheme currently has funding within the current six-year programme from FCRM GIA and contribution from Gloucestershire County Council.

Status:

The potential number of OMs is based on modelling utilising the South Gloucestershire Surface Water Management Plan (SWMP) model. **The existing model is to be updated to incorporate the proposed sports playing fields and clarify the flood risk benefits that could be achieved from the scheme.**

Updates:

Gloucestershire County Council are compiling information needed for an Outline Business Case and conducting a gap-analysis to identify which areas need support from the Programme Delivery Unit.

River Avon / Severn Fish Pass – Abbey Mill

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£318,400	£318,400	£0	£0	£318,400	10 OM4c	n/a	n/a	-

Details:

This project seeks to provide fish passage between the Rivers Avon and Severn at a point between Abbey Mill and Stanchard Pit in Tewkesbury.

Status:

The project is currently at the Outline Business Case stage, with options being assessed.

Rural Suds River Frome Stroud Valleys

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Stroud District Council	£347,700	£0	£335,000	£52,700	£55,000	Stroud District Council	n/a	n/a	-

Details:

This is a Natural Flood Management project to reduce fluvial flood risk to 200 properties in the 250 km² Frome Catchment, including the Painswick Stream, Slad Brook (Rapid Response Catchment), River Frome, Nailsworth and Horsley Brooks. The project began in 2014.

Key Partners:

Led by Stroud DC, with the Environment Agency, Local Community Flood Action Groups, Gloucestershire County Council, Gloucestershire Wildlife Trust, Natural England (Catchment Sensitive Farming), National Trust, and private landowners. The RFCC contribute £55k Local Levy per year towards Project Officer costs and Stroud DC contribute £5k per year in support cost. GCC contribute up to £30k towards project delivery. Landowners have contributed significantly to many of the projects through undertaking some works, e.g. fencing and tree management. Current RFCC funding expires in March 2020.

Status:

The project has successfully delivered projects in all the sub-catchments within the Frome catchment. To date, the project has installed over 400 NFM interventions, including Large Woody Structures, earth bunds, livestock fencing and tree planting. The project has worked with 24 landowners; 4 NGOs (National Trust, Woodland Trust, GWT, Butterfly Conservation) and 20 private landowners. Over 20% of the catchment flows through NFM structures and interventions and over 25km of watercourse has been enhanced through NFM.

Update:

Rosemary McCloskey has been appointed as Project Officer, and came into post on 19 November 2018. GWT are delivering two NFM projects which were agreed with Chris Uttley and Rosemary is in discussion with Bathurst Estate regarding projects in the Frome.

Development of new projects has been delayed by the loss of the Project Officer. However one project, funded by Gloucestershire County Council on the Horseley Brook (Nailsworth catchment), involving the restoration and re-meandering of approx. 0.5 km of watercourse was completed with supervision by Stroud District Council's Drainage Officer (Dave Lesser) and the Environment Agency's Project Manager (Brian Smith).

Sud and Twyver Package, Gloucester

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£1,285,000	£1,240,000	£45,000	£0	£297,000	370 OM2	1 (Low)	2 (Medium-Low)	-

Details:

The Environment Agency is working with partners to deliver a number of inter-linked projects on the Sud Brook and River Twyver by 2021. These aim to deliver multi-benefits by tackling both flood risk and Water Framework Directive issues by reducing sediment, attenuating flows and delivering other measures to reduce flood risk and improve water quality. Proposals for the Sud and Twyver package are in development but our current information suggests there is the potential to reduce flood risk to approximately 370 properties.

The inter-linked projects are:

- o Natural flood management upstream of the motorway (M5) (see separate entry - **Community NFM – Twyver Natural Flood Management Project**)
- o Dealing with run-off from the M5
- o Re-naturalising the watercourses and attenuating flow between the M5 and upstream of Saintbridge Pond (Love your River Gloucester project)
- o Other measures to reduce flood risk to properties and improve water quality

Key Partners:

The projects will be delivered in partnerships involving the Environment Agency, Gloucester City Council, Gloucestershire Wildlife Trust, Gloucestershire County Council, Highways England, Stroud District Council, Cotswold AONB, Severn Trent Water, Natural England and the National Farmers' Union, as well as local landowners and community members. In addition to the FCRM GIA, funding has been secured to develop projects in the package from Local Levy, the WEIF (Water Environment Improvement Fund) and the European Structural Investment Fund (ESIF). Highways England Environment Designated Fund funding has been secured for a feasibility study relating to run-off from the M5. Funding has been secured from the Defra Community Natural Flood Management Fund over 2 years to develop and deliver natural flood management measures (see separate entry).

Status:

Work to implement natural flood management measures has started upstream of the M5 (see separate entry). Our consultants are currently investigating the impact of run-off from the motorway (M5) on flood risk and water quality. Modelling is currently underway to examine flood risk from the River Twyver and Sud Brook in more detail. This will inform what further works may be undertaken to reduce flood risk and improve water quality. It is proposed to start the first of the river restoration works on the Sud Brook in March 2019.

Update:

The modelling outputs are expected in December 2018. Options assessment is progressing.

Upper Framilode, Gloucestershire

Lead RMA	Total funding over 6 Year Programme	FCRM GiA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£88,637	£0	£88,637	£0	£64,800	Up to 434 OM2 forecast for 2025/26	1 (Low)	n/a	-

Details:

The preferred action in the Severn Estuary Flood Risk Management Strategy is to improve or sustain the standard of protection of defences in the Upper Framilode area by 2030. Hydraulic modelling carried out for the Strategy indicates that this may reduce flooding to over 430 properties in the parish of Fretherne-with-Saul and village of Epney.

Status:

A local levy funded Initial Assessment was carried out in 2017 to help determine whether a capital scheme could be viable. The Environment Agency is currently reviewing this and other available information to assess whether a flood risk management scheme can be justified in this location.

Update:

Work has started on the development of a business case to consider the various options for a scheme.

Upper Hearne Brook (Beeches Road) Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GiA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Cheltenham Borough Council	£75,000	£25,000	£0	£50,000	£25,000	22 OM2	2 (Medium-Low)	2 (Medium-Low)	-

Details:

This is a Cheltenham Borough Council led scheme. £25k FCRM GiA funding is available in 2018/19 to progress proposals to reduce flood risk from Hearne Brook to 22 properties in Charlton Kings, Cheltenham.

Status:

This scheme is the second of two phases of a flood alleviation scheme on this watercourse. The first phase was completed in 2014 and reduced flood risk to 16 properties.

Cheltenham Borough Council has appointed consultants to produce the Business Case. Scheme construction/delivery is programmed in for 2019/20, subject to the relevant approvals and funding being in place.

Whaddon, Cheltenham Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Gloucestershire County Council	£2,475,000	£2,092,000	£50,000	£333,000	£0	213 OM2	4 (High)	4 (High)	-



Whaddon FAS

Details:

This is a Gloucestershire County Council led scheme to reduce the risk of surface water flooding from the Cotswold Escarpment to 213 properties in Whaddon, Lynworth and Prestbury. The scheme includes channel diversions into two flood storage areas during high flows and Property Level Resilience measures.

Key Partners:

This project attracted funding from public contributions, local levy and FCRM GiA.

Status:

Construction of the flood storage areas commenced on the 22nd January 2018 and was completed in October 2018. Installation of Property Level Resilience (PLR) measures (35 properties) will be managed by Cheltenham Borough Council for delivery during 2018/19. The uptake of PLR in this area has not been as successful as hoped and so the number of properties protected may reduce.

Updates:

Cheltenham Borough Council have conducted threshold surveys on the properties eligible for PLR and are continuing liaison with local residents to see if they can increase the uptake.

Projects in Herefordshire

Colwall, Flood Alleviation Feasibility

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£42,000	£0	£42,000	£35,000	£42,000	5 OM2s	2 (Medium-Low)	4 (High)	-

Details:

This is a Herefordshire Council-led scheme to reduce flood risk from an ordinary watercourse to properties in the village of Colwall.

Status:

Balfour Beatty, on behalf of Herefordshire Council, are currently undertaking an initial assessment into possible flood alleviation measures. The scheme is currently programmed for delivery 2020/21 subject to the relevant approvals and funding being in place.

Gosford Brook, Brimfield and Orleton Flood Alleviation Schemes

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£42,000	£17,000	£25,000	£0	£21,000	Up to 28 OM2 forecast for 2020/21	1 (Low)	n/a	-

Details:

Brimfield is a village situated on the A49 road at the border with Shropshire. Orleton is a small village situated 3 miles to the west of Brimfield. Due to their close proximity and the effects of the Brimfield Brook on both the villages, the two areas are currently being assessed for a catchment-based approach.

Status:

Both areas are being considered for Natural Flood Management and environmental enhancements in addition to a flood resilience scheme.

Currently measures, if viable, are forecast to be delivered in 2020/21 (Brimfield, 28 properties) and 2022/23 (Orleton, 6 properties).

Com NFM - Yazor Brook Flood Alleviation

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£60,000	£50,000	£0	£10,000	£28,561	-	n/a	n/a	Herefordshire Wildlife Trust / Wye and Usk Foundation



Details:

This is a Community led NFM project led by Herefordshire Wildlife Trust and the Wye and Usk Foundation. Delivery will be during 2018/19 and 2019/20 and will focus on a range of NFM measures in the Yazor catchment upstream of Hereford City. The project will engage with local communities and land owners with 39 areas of land already identified for farm advisory work and NFM interventions. This work links closely with Herefordshire's core strategy for growth and will support the application of appropriate NFM measures to all new developments along the brook, liaising with Herefordshire Council planners, developers and contractors, including 4 Herefordshire Council owned sites and 5 major developments.

Key Partners:

Key partners include the Wye and Usk Foundation, Herefordshire Wildlife Trust, NFU, Farm Herefordshire, Natural England, CLA and Flood Community groups.

Status:

A delivery programme has been drawn up and landowner engagement is underway. Two Steering Group meetings have been held together with a project visioning meeting in October 2018. Stakeholder engagement is underway for a number of Community Groups associated with the project

Update:

Project Officers have carried out landowner engagement in the Yazor catchment with 750 ha of agricultural land now covered. Soil assessments are under way/completed including organic matter testing. NFM has been discussed in depth with 3 landowners, with farm reports nearing completion. A range of measures will be implemented including improving infiltration rates on agricultural land, the installing of structures to slow water flow and attenuation/sediment pools. In addition, some 500 ha of woodland has been identified with landowner engagement taking place. Site visits and subsequent interventions will follow in early 2019. There has also been engagement with Herefordshire Council and developers regarding the management and possible acquisition of land adjacent to the Yazor Brook. Community engagement with schools is also being undertaken to promote sustainable drainage and the Yazor Brook project as a whole.

Ewyas Harold

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£90,000	£35,000	£55,000	£0	£38,000	Up to 30 OM2 in 2024/25	1 (Low)	n/a	-



A picture of flooding in the village of Ewyas Harold which has been kindly provided by a local resident.

Details:

Ewyas Harold is a village and civil parish in the Golden Valley in Herefordshire which lies on the Dulas Brook. The village experienced significant flooding to properties in 1992, 2000, and 2008, with flooding history going back many decades.

Key Partners:

This project has both FCRM and Local Levy within and outside of the current six-year programme.

Status:

An Initial Assessment was carried out in 2016 and was funded by Local Levy. The Programme Delivery Unit has carried out a review of the existing model in this area and has recommended that it be updated for use in the project. The updating of the model will be included in the national Modelling Programme. Options to be considered include a combination of Natural Flood Management measures in the upstream catchment and an engineered scheme within the village.

Updates:

The Environment Agency are progressing with the monitoring required for the Natural Flood Management measures and the aim is to implement these over the next two years. The procurement method for the modelling needed for the engineered element of the project is being investigated to keep costs aligned with the scale of the project.

Hampton Bishop

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£30,000	£0	£30,000	£0	£30,000	-	n/a	n/a	-

Details:

Hampton Bishop is a village and civil parish south-east of Hereford City which is located at the confluence of the River Wye and the River Lugg. The area has a history of both pluvial and fluvial flooding which affects properties and the B4224 which is a busy route to Hereford City. Existing flood defences provide a level of protection against flooding from the River Wye and the River Lugg.

£30,000 Local Levy funding has been allocated to carry out an Initial Assessment to investigate options to reduce flood risk in the area and identify a preferred solution to reduce this.

Local residents and Parish Councillors have requested that the preferred option include a solution to reduce the effects of surface water flooding on the main road which goes through the village. The road becomes impassable for days at a time.

Key Partners:

Once the options have been identified we will begin conversations with potential partners such as Herefordshire Council and Herefordshire Wildlife Trust to ensure benefits are maximized. The Parish Council has also offered to financially support a solution to the road flooding.

Status:

The Initial Assessment has been produced by Capita Property & Infrastructure and identified fewer properties are at risk than initially thought.

Updates:

Following the Initial Assessment, the Environment Agency are considering options. One of those options could be to work with Herefordshire Wildlife Trust to improve and extend the Lugg Meadows SSSI which could also have flood risk management benefits for Hampton Bishop.

Hereford Barriers Invest to Save

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£398,000	£356,000	£0	£42,000	£50,000	-	n/a	n/a	-



View of the existing Flood wall at Wye View Villas.

Details:

The existing Hereford Flood Alleviation Scheme protects 196 properties and major infrastructure to a 0.5% AEP (1 in 200-year) standard of protection, with the deployment of 92m of demountable barriers. The core aims of this Invest to Save scheme are to:

- improve the resilience of the existing defence, making the defence a 99% passive system
- reduce the operational, health and safety risks associated with deployment, storage and transportation
- enable the Environment Agency to resource a wider incident response
- reduce the time and labour spent on deploying demountable barriers in times when not ultimately needed due to changes in forecast and flow
- minimize disruption on the community

Key Partners:

Key partners involved are the Environment Agency, Herefordshire Council and Historic England.

Status:

The outline concept design is to remove the need for solid demountable sections of defence and replace them with small flood gates and passive glass panels, as successfully demonstrated in Upton-on-Severn.

An economic assessment has been carried out which has taken into account the costs of maintenance and operation over the lifetime of the scheme in the existing and changed situations. The proposal provides a positive economic benefit going into the future.

Updates:

The funding this year is to develop the scheme to full business case stage. Construction is planned to start within the 6 year programme provided it becomes available and subject to the relevant approvals and funding being in place.

Hereford City Strategic Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£250,000	£50,000	£0	£200,000	£250,000	To be determined through modelling approach	n/a	n/a	Balfour Beatty/WSP



View of the River Wye in Hereford City Centre

Details:

Existing evidence suggests that Hereford City is significantly affected by flood risk with around 800 residential properties at risk of fluvial flooding. This level of perceived risk has been identified as a critical constraint to the economic growth of Hereford City. With the dual issues of flooding and resultant restrictions to the city's regeneration, it is considered that a citywide approach to flood risk management will deliver the most sustainable and effective solution.

The project involves development of an integrated catchment model taking into account fluvial, surface and groundwater sources and high level options testing in relation to a suite of management measures to reduce flood risk across the City. This citywide approach will provide a high level identification of a package of measures to address the different inflows and flood risk hotspots whilst harnessing the growth opportunities to deliver an effective long term programme of city scale flood risk management.

Key Partners:

Key partners involved are the Environment Agency, Herefordshire Council and Dŵr Cymru Welsh Water

Status:

A Scoping Plan for the project was completed by Balfour Beatty in August 2018.

Updates:

Balfour Beatty commissioned consultants WSP in November 2018 to undertake the Hereford Integrated Catchment Strategy. Appraisal of the city scale flood risk management options is planned for completion by February 2019 with the final evidence and recommendations agreed by the partnership by May 2019.

Orleton, Flood Alleviation Scheme, Herefordshire

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£25,000	£0	£25,000	£0	£25,000	Up to 6 OM2 in 2022/23	1 (Low)	n/a	-

Details:

Orleton is a small village situated 3 miles to the west of Brimfield. Brimfield is a village situated on the A49 road at the border with Shropshire. Due to their close proximity and the effects of the Brimfield Brook on both the villages, the two areas are currently being assessed for a catchment-based approach.

Status:

Both areas are being considered for Natural Flood Management and environmental enhancements in addition to a flood resilience scheme.

Currently measures, if viable, are forecast to be delivered in 2020/21 (Brimfield, 28 properties) and 2022/23 (Orleton, 6 properties).

River Lugg, Leominster Flood Alleviation Scheme Improvements

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£1,493,000	£993,000	£500,000	£0	£808,156	251 OM2	3 (Medium-High)	3 (Medium-High)	TVO

Details:

Leominster is a market town located 12 miles north of Hereford City, at the confluence of the River Lugg and its tributary the River Kenwater. This scheme is to upgrade the existing flood alleviation scheme which has been in operation since the 1970s. The existing scheme consists of raised embankments, walls throughout the town and a bypass channel to the north.

Status:

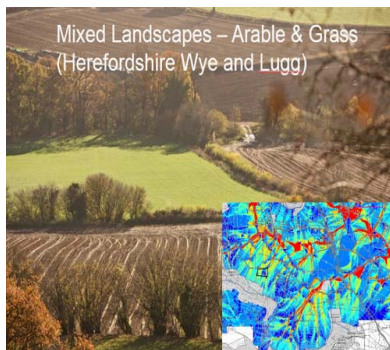
Modelling has shown that the existing scheme provides a 1 in 100 year standard of protection for 183 properties in the Marsh area of Leominster. The improvements will consist of a combination of earth embankment and flood walls and will increase the standard of protection by including allowances for freeboard and climate change. This will provide increased protection to 251 properties in the area.

Updates:

Objections were received from landowners to the north of the scheme area prior to the planning application process commencing. This had an effect on the programme such that construction, planned to commence in Spring 2018, could not start until late Summer 2018. This though coincides with bird nesting season, unfavourable construction periods and possible flooding, and it has therefore been necessary to postpone the start of construction to March 2019. **It is planned to submit the planning application in the near future.**

River Lugg and Wye integrated Natural Flood Management

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Herefordshire Council	£625,000	£625,000	£0	£0	£195,000	-	n/a	n/a	Wye and Usk Foundation



Focus on Land Management Interventions.

Details:

This is a NFM catchment scale project funded from the Defra £15 million allocation. The project will reduce flood risk across 7 catchments, provide data and evidence in support of land management NFM, engage communities and provide wider benefits linking with our Farm Herefordshire work e.g. reduced phosphate and additional habitat created. The NFM projects will integrate with existing and proposed Flood Alleviation Schemes including at Leominster, Ewyas Harold and Hampton Bishop.

Key Partners:

Key partners include the Wye and Usk Foundation, Severn Rivers Trust (Brimfield), Cranfield University, Herefordshire Wildlife Trust, National Trust, NFU, Farm Herefordshire, Natural England, CLA and Flood Community groups.

Status:

The business case has been signed off, the funding is now with Herefordshire Council and the Project Officer has been appointed (in place June 2018). Governance and structures for delivery and reporting have been agreed, delivery partners lined up and some engagement with landowners and community groups has been carried out. Modelling and mapping discussions are ongoing with monitoring locations and types being determined.

Update:

Progress has been made with the following work packages: Contractors Atkins have now completed Opportunity Mapping for the 7 NFM Catchments in Herefordshire to help engage with landowners on the types and suitability of NFM measures. A grants construction scheme and information document has been drafted to support funding of NFM measures where other funding is not available. Monitoring plans are being developed and Contractor quotes are now in for assessment to enable the commissioning of monitoring during December 2018 / January 2019. NFM has been launched in the Brimfield Catchment with an open Community event held on 28 November 2018 which was well received by those attending including residents, Local Councillors and the Brimfield Flood Action Group. A NFM presentation was also made to the Bodenham Flood Action Group AGM on 27 November 2018 prior to a future Community launch event in the near future.

Projects in Shropshire

Hopstone Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£290,000	£18,000	£0	£272,000	£0	3 OM2	5 (Scheme completed)	5 (Scheme completed)	-



Flooding at Hopstone

Details:

The scheme has delivered reduced flood risk from surface water and a minor watercourse to 3 properties through Natural Flood Management and improvements to highway drainage.

Key Partners:

The scheme has been delivered in partnership with the community and the Chyknell Estate.

Status:

Natural Flood Management measures have been implemented in the upper catchment to reduce the peak flows during a storm event. Additionally, highway improvements have been made with the introduction of a new highway drainage system through the length of an un-adopted highway.

Hydraulic modelling is complete for the **Risk of Flooding from Surface Water map**.

Updates:

Shropshire Council have submitted the output of the modelling to the Environment Agency. This will feature in the next update to the Risk of Flooding from Surface Water map.

Hunters Gate, Surface Water Flood Alleviation Scheme, Much Wenlock

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£138,000	£138,000	£0	£10,000	£0	23 OM2	3 (Medium-High)	4 (High)	-

Details:

This Shropshire Council-led scheme builds on the modelling work that was completed as part of the Much Wenlock Surface Water Management Plan, and is to provide a level of protection to 23 properties from surface water flooding. The initial proposals are to install Property Level Resilience measures, but use of an existing Severn Trent culvert could provide a bypass element to the scheme.

These properties are in a different part of the town to those that will benefit from the main flood alleviation scheme. These works provide additional opportunity to further reduce flow within the town itself.

Key Partners:

The project is in partnership with Severn Trent Water (STW).

Status:

Scoping meetings between Shropshire Council and STW have been held to map out the best design option with further design work scheduled for this year. Work on the ground is planned for 2019/20.

Longden, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£36,000	£21,000	£12,500	£2,500	£16,000	5 OM2	1 (Low)	3 (Medium-High)	-

Details:

This is a Property Level Resilience scheme to provide a level of protection to 5 properties in the village of Longden in Shropshire.

Key Partners:

The scheme is being delivered by Shropshire Council with support from the Environment Agency.

Status:

Shropshire Council are developing the business case and expect to deliver this by the end of 2018.

Updates:

Shropshire Council estimate they will be able to undertake initial property surveys by March 2019.

Natural Flood Management, Shropshire, Severn Tributaries

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£625,000	£625,000	£0	£0	£195,000	-	n/a	n/a	-



Leaky wooden structure (Shropshire Wildlife Trust).

Details:

This is a NFM catchment scale project funded from the Defra £15 million allocation. The project will reduce flood risk across the Corvedale and Coalbrookdale catchments, provide data and evidence in support of the NFM interventions, engage communities and provide wider benefits including improved water quality and additional habitat. The project will integrate with existing flood schemes, including at Ironbridge, and link with other funding opportunities including mid-tier stewardship across the catchments.

Key Partners:

Key partners include Shropshire Council, Telford and Wrekin District Council, Shropshire Wildlife Trust, Cardiff University, Harper Adams University, Severn Gorge Community Trust, Natural England, CLA, Hydrologic, Flood Community groups, and Severn Rivers Trust.

Status:

The business case has been signed off, funding is now with Shropshire Council, and Project Officers are in place (Shropshire and Telford and Wrekin). Governance and structures for delivery and reporting have been agreed, and delivery partners lined up with engagement and interventions agreed. Community groups have been engaged.

Update:

A Steering Group meeting was held in September 2018 with the main focus on monitoring, linking up with Cardiff University who are key partners with this work. A draft monitoring programme is to be finalised and reviewed in December 2018 which will include the proposed monitoring on both the Corve and Coalbrookdale catchments in Shropshire. Over 75 NFM interventions are now in place since April 2018 across the Corve Catchment. In Coalbrookdale, all landowners have now been engaged with upstream, which has identified a significant number of NFM interventions. Monitoring equipment is being procured for Coalbrookdale using Hydrologic as the main contractor for this. A demonstration day was held in October 2018 in the Corve catchment to also support the West Midlands Project Officer network and links with National colleagues. A draft litigation / maintenance document is being produced to assist the development of NFM with Forestry Commission and other partners.

Shrewsbury Barriers Invest to Save

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£375,000	£364,000	£0	£11,000	£50,000	-	n/a	n/a	-

Details:

The existing Flood Alleviation Scheme at Frankwell protects 75 properties and major infrastructure to a 1% AEP (1 in 100-year) standard of protection, with the deployment of 170m of demountable barriers. The core aims of this Invest to Save scheme are to:

- reduce the operational, health and safety risks associated with deployment, storage and transportation
- enable the Environment Agency to resource a wider incident response
- reduce the time and labour spent on deploying demountable barriers in times when not ultimately needed due to changes in forecast and flow
- minimize disruption to the community

The outline concept design is to partially remove the solid demountable sections of defence and replace them with flood gates and passive glass panels, as successfully demonstrated in Upton-on-Severn.

An economic assessment has been carried out which has taken into account the costs of maintenance and operation over the lifetime of the scheme in the existing and changed situations. The proposal provides a positive economic benefit going into the future.

Key Partners:

Key partners involved are the Environment Agency, Shropshire Council and Historic England.

Status:

The funding this year is to develop the scheme to full business case stage. Construction is planned to start within the 6 year programme subject to the relevant approvals and funding being in place.

Wesley Brook Shifnal Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£517,000	£267,000	£250,000	£0	£222,000	87 OM2	2 (Medium-Low)	2 (Medium-Low)	-

Details:

The original bid was for Property Level Resilience measures to provide a level of protection for 87 properties at risk of flooding from the Wesley Brook.

Key Partners:

As a result of work with the Shifnal Flood Partnership Group, Shropshire Council, Telford and Wrekin Council, Highways England and Severn Trent Water, a number of other options are also being considered, in addition to Property Level Resilience, to benefit all properties. Additional options to reduce flood risk could include removal of pinch points or upstream storage.

Status:

An Integrated Model Proposal Report was commissioned by Shropshire Council. The intention is to progress the integrated model approach in 2018/19 and 2019/20.

Updates:

The first draft of a flood model has been produced by Arcadis. Further survey work is being undertaken by the Environment Agency to aid Shropshire Council in the completion of the flood model report. The report is expected to be complete by January 2019. The construction work is expected in 2019/20 and 2020/21, subject to the relevant approvals and funding being in place.

Westbury Brook, Westbury, Shropshire

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£66,000	£50,000	£8,000	£8,000	£0	10 OM2	4 (High)	4 (High)	-

Details:

This is a Property Level Resilience scheme to provide a level of protection to 10 properties from the Westbury Brook in the village of Westbury in Shropshire.

Updates:

Property Level Resilience measures are ongoing, with measures installed in 2 to 3 properties. The remaining properties are planned to have measures installed throughout December 2018 to February 2019.

Worthen, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Shropshire Council	£77,000	£46,000	£31,000	£0	£19,000	Up to 16 OM2 in 2022/23	1 (Low)	n/a	-

Details:

This is a Property Level Resilience scheme to provide a level of protection to 16 properties from the ordinary watercourse in the village of Worthen in Shropshire.

Key Partners:

The scheme is being delivered by Shropshire Council with support from the Environment Agency.

Status:

The scheme originated as a bid for the pipeline programme and has been accelerated into the current programme with the aim of delivering OM2s by 2019/20.

Update:

Shropshire Council are developing the business case and expect to deliver this by the end of 2018.

Shropshire Council estimate they will be able to undertake initial property surveys by March 2019.

Projects in Telford and Wrekin

Coal Brook, Coalbrookdale, Flood Relief Works

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Telford & Wrekin Council	£215,000	£185,000	£30,000	£0	£60,000	Up to 39 OM2 in 2020/21	2 (Medium-Low)	1 (Low)	

Details:

This Telford and Wrekin Council-led scheme was originally entered on to the Medium Term Plan as a scheme to increase the size of the culvert under Dale End road. This was not economically viable and so the current scheme is to install Property Flood Resilience measures to 39 properties.

Key Partners:

Key partners involved in the scheme are Telford and Wrekin Council, the Environment Agency and the Severn Gorge Countryside Trust.

Status:

Telford and Wrekin Council have taken the decision to move the delivery of the scheme beyond the 6 year programme whilst additional funding is sought and a design that is suitable for use in a conservation area is reached. The intention is to amalgamate this scheme with the Undefended Properties in Ironbridge Scheme.

Undefended Properties in the Ironbridge Gorge, Individual Property Protection

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Telford & Wrekin Council	£192,000	£25,000	£167,000	£0	£117,000	Up to 38 OM2 in 2022/23	1 (Low)	1 (Low)	-

Details:

This Telford & Wrekin Council led scheme is to provide a level of protection from flooding for up to 38 properties through the installation of Property Level Resilience measures. In addition we are proposing to set up a resident's self-help "Flood Action" group. This group will aid the installation of the products supplied on properties owned by the infirm or on properties where owners are away.

Key partners:

Key partners involved in the scheme are Telford and Wrekin Council, the Environment Agency and the Severn Gorge Countryside Trust.

Status:

Telford and Wrekin Council have taken the decision to move the delivery of the scheme beyond the 6 year programme whilst additional funding is sought and a design that is suitable for use in a conservation area is reached. The intention is to amalgamate this scheme with the Coalbrookdale Scheme.

Projects in Warwickshire

Alscot Park Weir Repair, Alscot Park – River Stour

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£88,000	£88,000	£0	£0	£85,000	-	n/a	n/a	AMCO



Alscot Park Weir

Details:

These works are to repair a listed weir structure and the installation of an eel pass.

Key Partners:

Environment Agency and Alscot Park Estate.

Status:

Construction will commence on the 29 November 2018, and last until 14 December 2018.

Updates:

Since last quarter Permit application has been approved and works are scheduled to start on the 29 November 2018.

Lucy's Mill H&S Improvement Works, Stratford-upon-Avon

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£210,000	£210,000	£0	£0	£200,000	Environment Agency	n/a	n/a	Capita Aecom



Lucy's Mill is a MEICA weir structure

Details:

This is a Health and Safety project to review access improvements, condition and potential decommissioning.

Key Partners:

Avon Navigation Trust and Stratford District Council.

Status:

Draft Initial Assessment received by the Environment Agency in November 2018 for comment.

Updates:

No further updates at this time.

St John's Brook, Warwick Flood Risk Management Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£1,449,506	£1,319,685	£129,821	£0	£64,000	203 OM2	2 (Medium-Low)	1 (Low)	GBV



St John's Brook in dry weather conditions

Details:

This is a flood risk management scheme to protect up to 195 properties on the Woodloes Estate in Warwick. The preferred way forward is likely to consist of a flood storage area providing a capacity of circa 32,000m³, which falls under the requirements of the Reservoirs Act 1975.

Key Partners:

Environment Agency, Warwickshire County Council, Warwick District Council, local businesses, land owners and residents.

Status:

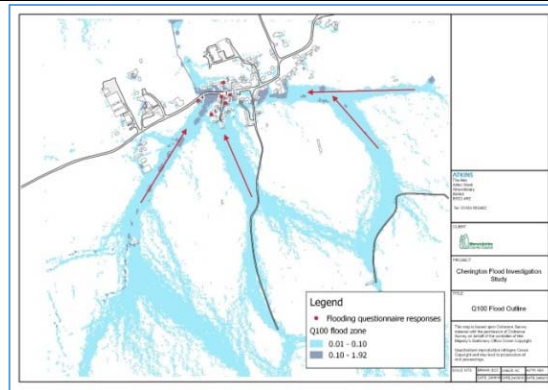
The Strategic Outline Case was approved in June 2016. Jacobs had initially proposed the submission of the Outline Business Case (OBC) by the end of September 2018. We are now advised that this will not be available until mid-December 2018. The issue has been highlighted at Project Board to discuss the consultant's lack of performance.

Updates:

Although we do not have the completed OBC, discussions with the consultants have highlighted that the Partnership Funding score for the scheme is around 65%. Therefore significant partnership funding will be required in order to take the current scheme to Full Business Case.

Cherington, Shipston-on-Stour, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Warwickshire County Council	£103,300	£55,500	£35,000	£12,800	£10,000	11 OM2	4 (High)	4 (High)	-



Cherington Flood Zones

Details:

This is a Property Level Resilience scheme benefitting 11 properties in Cherington to reduce flood risk from surface water flooding.

Key Partners:

Key Partners include EA (contributing through FCRM GIA) and local residents (contributing to own flood defences).

Status:

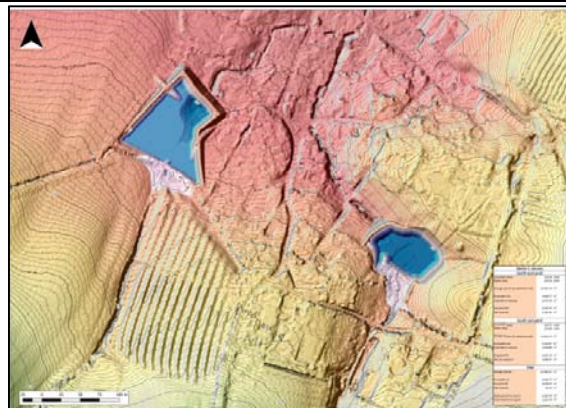
Delivering on the ground.

Updates:

Four properties were delivered in 2017/18. Due to six of the buildings being listed and the requirement to apply for planning consents for some of the proposed measures, and the liquidation of our Tier 1 Framework provider, seven properties had their installations deferred into 2018/19, of which six are now delivered. One property remains to have a driveway barrier installed, however planning permission and listed property consent has had to be applied for. The determination date for both is due to be in December 2018, though we do not foresee any objections. Completion of remaining works is expected to be undertaken January/February 2019, depending on manufacturing times.

Fenny Compton, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Warwickshire County Council	£570,000	£325,000	£0	£245,000	£325,000	15 OM2	4 (High)	4 (High)	-



Plan of Proposed Flood Attenuation Areas.

Details:

We are looking to develop a scheme that is economically viable based on upstream storage to benefit 15 properties from surface water flooding.

Key Partners:

Key Partners include EA (contributing through FCRM GIA) and local residents (contributing to own flood defences)

Status:

In appraisal. We have developed a model and tested a number of scenarios regarding the volume of upstream storage, sizing of embankments and the extent of material re-use etc.

Updates:

We have completed detailed geotechnical investigations which have revealed an element of made ground. To provide greater certainty of the scheme estimate, we have undertaken outline design, sufficient for us to secure quotations from local contractors and understand the funding challenge, updated local residents and landowners. We are working on the statutory documents required for planning (Ecology/ Archaeology and landscape visual impact assessments) alongside business case development which we have forecast will be submitted in December. Residents have now asked us to look into the possibility of lowering the height of the South West Embankment. We are currently undertaking remodelling works to assess the impact this will have on the overall design of the scheme.

Ladbroke, Southam, Lot Brook, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Warwickshire County Council	£71,555	£28,555	£0	£43,000	£14,500	6 OM2	5 (Scheme completed)	5 (Scheme completed)	-



Ladbroke in flood

Details:

This is a Property Level Resilience scheme benefitting 6 properties in Ladbroke from surface water flooding.

Key Partners:

Key Partners include EA (contributing through FCRM GIA) and local residents (contributing to flood walls).

Status:

Delivering on the ground.

Updates:

Three properties have been delivered in 2017/18. Three further properties have been deferred into 2018/19, **two of which have now been delivered**. Additional flood walls are being funded by the residents themselves to deliver a better 'whole property' solution. **The one remaining property to be completed has deferred to installation of the remaining barriers until after a conservatory has been fitted (outside of scheme).** It is expected that the final barriers will be installed late 2018, early 2019.

Pailton, Rugby, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Warwickshire County Council	£47,600	£35,600	£0	£12,000	£37,600	12 OM2	2 (Medium-Low)	4 (High)	-

Details:

We are looking to develop a scheme that is economically viable based on providing additional upstream storage to benefit 12 properties from surface water flooding.

Key Partners:

Key Partners include EA (contributing through FCRM GIA) and local landowners.

Status:

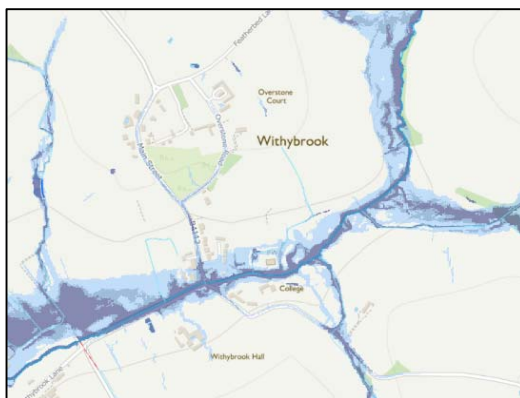
We have completed a topographical survey, undertaken modelling and a storage volume assessment for providing additional upstream storage. We have undertaken further detailed survey and property threshold level data to inform the business case development. Given the scale of the proposed embankment, we are scoping some geotechnical investigation to better understand the risks associated with ground conditions.

Updates:

Survey-drone data has now been received and will inform updated modelling. We are revisiting the modelling based on revised hydrology etc. and scoped and tendered some geotechnical investigations. We are forecasting that we will be in a position to submit the business case in December 2018. **It is believed the modelling results will lead to a rethink of the existing proposals. With this in mind it is envisaged that the OBC will not be submitted until April 2019.**

Withybrook, Warwickshire Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Severn Trent Water	£721,000	£40,000	£100,000	£581,000	£467,000	9 OM2	2 (Medium-Low)	2 (Medium-Low)	Royal HaskoningDHV



Surface water flood map at Withybrook

Details:

This scheme involves channel re-profiling and implementation of NFM measures in Withybrook village, Warwickshire to reduce the flood risk to 9 properties at fluvial and sewer flooding.

Key Partners:

The scheme is being led by Severn Trent Water and is a partnership project with Warwickshire County Council. Both risk management authorities are contributing towards the cost of the scheme. Warwickshire Wildlife Trust and the Environment Agency are also supporting this project.

Status:

The Outline Business Case for the scheme is being drafted and costs are being looked into further.

Updates:

Completed Scoping document to allow detail design. Commissioned Royal HaskoningDHV to undertake detail design. Currently awaiting return of Stage 1 habitat survey, which is expected at the end of November 2018. Detail design will provide construction costs and allow us to update the partnership funding calculator indicating the viability of the project. Re-hab of upstream sewers has been completed. On-line storage tanks are 80% complete.

Stratford-upon-Avon, Racecourse Brook, Flood Alleviation Scheme

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£720,000	£380,000	£40,000	£300,000	£138,390	47 OM2	2 (Medium-Low)	2 (Medium-Low)	AECOM



Flooding at Racecourse Brook

Details:

The scheme aims to protect 47 properties from a 1 in 100 (1% AEP) fluvial flood event on the Racecourse Brook through the construction of two upstream flood storage areas.

Key Partners:

The Environment Agency, Stratford Council, and local businesses – the project has secured £300,000 of contributions from a local developer. The project team are currently preparing an engagement plan to identify and incorporate the key partners into the scheme.

Status:

The project is currently at the model update stage with plans to complete the Strategic Outline Business Case (SOC) by the end of October 2018. Current plans show construction works to be complete by October 2020.

Updates:

The project has been allocated to AECOM via the West Midlands Programme Delivery Unit. The baseline model has been updated and approved and optioneering work and the economic assessment is currently being undertaken. The Strategic Outline Case is due to be delivered by AECOM by the end of December 2018.

Natural Flood Management, Shipston-on-Stour

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£145,000	£145,000	£0	£0	£0	-	n/a	n/a	-



2007 Floods.

Details:

This is a Natural Flood Management (NFM) scheme within the Stour catchment to reduce flood risk to 80 properties from fluvial flooding.

Key Partners:

Key funding partners include Warwickshire County Council, Shipston Town Council and a number of contributions from land owners and local businesses. Shipston Area Flood Action Group and Warwick University are also key partners.

Status:

The Project is now seeking additional funding as all measures across the Knee Brook catchment have been installed in line with project milestones.

Updates:

Additional funding is being sought to implement NFM in all catchments upstream of Shipston. It is estimated that an additional £300k is required to deliver this work in the next two to three years. A meeting was held in November with the Shipston Area Flood Action Group and RFCC Chair, EA, Warwickshire, NFF to discuss this. The Creation of a Stour Integrated Catchment group seems likely which will help develop opportunities for partnership funding working closely with Warwickshire County Council and other key partners. Over 350 interventions have now been completed within the Stour Catchment above Shipston under the existing NFM funding with measures being delivered on time and on budget. Work is now on hold until April 2019 when the additional £50k reallocation funding now obtained will enable further progress.

Projects in Northamptonshire

Yelvertoft Flood Storage Area Recondition Works, Crick Road, Yelvertoft

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£100,000	£100,000	£0	£0	£60,000	-	n/a	n/a	-



Yelvertoft FSA is located upstream of Yelvertoft Village

Details:

The spillway on the existing control structure has deteriorated to the point that reconstruction is required, there are also a number of small maintenance improvements required to headwalls which form part of the storage area.

Key Partners:

The Environment Agency, local authority.

Status:

Construction to go out to tender December 2018.

Updates:

No further updates at this time.

Projects in Worcestershire

Badsey Brook – Childswickham and Broadway

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£3,068,000	£2,049,500	£462,500	£556,000	£572,019	250 OM2	5 (Scheme completed)	5 (Scheme completed)	Jackson Hyder



Completed scheme (October 2018)

Details:

This is an Environment Agency led flood alleviation scheme consisting of a flood storage area in Broadway. The partnership scheme reduces flood risk to over 250 properties in Broadway, Childswickham and Murcot.

Status:

The scheme has attracted over £2 million of FCRM GIA funding and the English Severn and Wye Regional Flood and Coastal Committee have also contributed over £1 million. To enable access to the FCRM GIA funding under Defra's Flood Partnership Funding Model, Worcestershire County Council and Wychavon District Council are contributing £555k (including archaeology work) and the local parishes have raised £312k. £756k of the local levy was spent prior to the 6 year programme.

Updates:

The Environment Agency's contractor Jackson Hyder has completed the main construction works and the scheme is now operational. The Environment Agency field teams are completing the fencing and landscaping works over winter 2018. The official opening ceremony took place on the 4th of October 2018. The event was well attended, we received a range of positive feedback and the scheme was promoted by social media and on BBC Midlands Today. Ongoing work includes finalising the fencing and landscaping, flood warning service and flood mapping updates.

Barbourne Brook FAS

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£161,000	£0	£161,000	£0	£12,000	Up to 122 OM2 in 2023/24	1 (Low)	n/a	-



Barbourne Flooding 1998

Details:

This is an Environment Agency led flood alleviation proposal to further reduce flood risk from the Barbourne Brook. Currently it is anticipated the scheme will consist of further flood storage to alleviate risk downstream.

Key partners:

Key partners involved are Worcester City Council, Worcestershire County Council and Severn Trent.

Status:

The scheme is currently at initial assessment stage with scheme delivery outside of the six year programme. However, depending on outputs from modelling, there is potential that the scheme could be accelerated.

Updates:

The existing modelling is being upgraded in partnership with Worcester City to more realistically represent flood risk. An Initial Assessment is being undertaken to clearly set out options to reduce flood risk.

Bewdley Barriers Invest to Save

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£384,000	£373,000	£0	£11,000	£65,000	Environment Agency	n/a	n/a	-



Demountable flood Barriers being deployed to Bewdley Severn Side North

Details:

The existing Flood Alleviation Scheme protects 62 properties and major infrastructure to a 1% AEP (1 in 100-year) standard of protection, with the deployment of 440m of barriers which takes 8 operatives 16 hours to deploy. The core aims of this Invest to Save scheme are to:

- reduce the operational, health and safety risks associated with deployment, storage and transportation
- enable the Environment Agency to resource a wider incident response
- reduce the time and labour spent on deploying demountable barriers in times when not ultimately needed due to changes in forecast and flow
- minimize disruption on the community

The outline concept design is to incorporate passive glass panels and flood gates to existing walls in Gardners Meadow car park, as successfully demonstrated in Upton on Severn, and to incorporate alternative security measures to reduce the resource needed to man the barriers.

Key Partners:

Key partners involved are the Environment Agency, Wyre Forest Council & Historic England.

Status:

An economic assessment has been carried out which has taken into account the costs of maintenance and operation over the lifetime of the scheme in the existing and changed situations. The proposal provides a positive economic benefit going into the future.

The funding this year is to develop the scheme to full business case stage. Construction is planned to start within the 6 year programme subject to the relevant approvals and funding being in place.

Documents for the Planning application are currently being prepared.

Bewdley Property Level Protection, River Severn

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£550,745	£166,000	£384,745	£0	£82,000	44 OM2	4 (High)	4 (High)	Aquobex



Newly installed flood door on Beales Corner.

Details:

This is an Environment Agency led project. Estimated costs are around £566k for the 44 properties at risk. This is funded through £400K Local Levy and £166k FCRM GIA. £14k Local Levy was spent prior to the 6 year programme.

The contractor has now installed the Property Level Resilience measures to the first 24 properties. These works consist of flood doors and flood boards.

Key Partners:

We are currently working in partnership with Aquobex and the British Research Establishment to produce an innovative flood door solution that could be used on 10 of the listed properties at highest flood risk.

Status:

The majority of remaining measures will be installed during winter 2018. The final 10 properties will be completed during Spring/Summer 2019 as these are reliant on the manufacture, testing and kite marking of the flood door.

The provisional date for withdrawal from the temporary flood barriers at Beales Corner is in March 2020, however this will be periodically reviewed. A partnership approach with Bewdley Town Council; Wribbenhall Flood Group and community volunteers is currently being worked through to enable the temporary barrier to continue in the short term. A very successful multi-agency exercise was held in November 2017 to test the emergency plans at Beales Corner.

Hinton Gauging Station Bank Repairs

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£68,600	£68,600	£0	£0	£38,600	-	n/a	n/a	-



Erosion next to the weir at Hinton; there is further erosion of the bank upstream of this picture

Details:

Hinton Gauging station is used for flood warning, modelling, and water resource licensing purposes. The river channel upstream of the measurement point is suffering from serious erosion which is affecting the accuracy of the measurements at the site, and threatening the integrity of the weir structure.

Status:

The design phase has been completed.

Pershore Scheme Improvements

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£45,000	£0	£45,000	£0	£45,000	Up to 31 OM2 in 2022/23	1 (Low)	n/a	-

Details:

The Pershore Flood Alleviation Scheme protects the market town of Pershore in Worcestershire. The original scheme was completed in 2010 and consists of earth flood embankments and masonry flood walls. This project is focused on reducing the ongoing significant maintenance costs on a section of raised roadway providing access to the council allotment area. This section of raised roadway consists of earth flood embankment with a reinforced road surface crest, over which the allotment traffic travel to access the site. The proposal is to replace this with a permanent masonry wall with access over for a more sustainable access solution.

Key partners:

Pershore Town Council

Status:

The Pershore project is at an early stage. Ground investigation is being arranged to ascertain the ground conditions at this location and the results will be used to estimate the potential costs of a replacement wall. A decision on the way forward for the scheme will then be taken.

Marlbrook Quarry Moderation Project

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£100,000	£100,000	£0	£0	£80,000	-	n/a	n/a	-

Details:

Marlbrook Quarry is a third party owned and maintained reservoir, currently designated as a reservoir under construction. A section 8 report in 2015 identified ten measures outstanding in the interest of safety. Of these measures, two are still outstanding. These works are to lay a minimum of 300mm of restoration soils at various locations across the site. This is to create a protective layer over the clay cap and establish suitable grass growth.

The Reservoir Safety Team are working with the Undertaker to ensure that all measures are completed; a successful planning application is required before works can be undertaken. To expedite the works the Environment Agency is investigating applying for planning permission.

Status:

The scope for gathering costs on the planning application is currently being reviewed. Notices served by the Reservoir Safety Team have expired and the Environment Agency are exploring options to ensure the Undertaker carries out the required works.

Upton Pumping Station

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£115,000	£115,000	£0	£0	£115,000	26 OM2	3 (Medium-High)	3 (Medium-High)	ECS

Details:

The proposed project is to provide a permanent pumping solution for the New Street defence at Upton upon Severn. This will deliver a number of business outcomes including removing a deployment risk inherent with the current portable pumping arrangement and the associated flood risk to 26 properties present if failure to deploy occurs. It further reduces the operational resource required during incidents. This will lead to resource being more available to attend other operation sites, improving and providing resilience and enhancing contingency arrangements.

Status:

Works are planned to begin in February 2019, subject to relevant approvals being place.

Severn Stoke Flood Alleviation Scheme, River Severn

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£590,000	£190,000	£400,000	£0	£180,000	Up to 19 OM2 forecast for 2021/22	3 (Medium-High)	4 (High)	-



Flooding in Severn Stoke, 2007.

Details:

This is a raised flood bank and road scheme to reduce flood risk to 16 properties and key infrastructure from the River Severn and surface water.

Key partners:

Key partners involved are the Environment Agency, Severn Stoke Flood Action Group, Worcestershire County Council, Malvern District Council, Severn Trent Water, Severn Stoke Parish Council, land owners and residents.

Status:

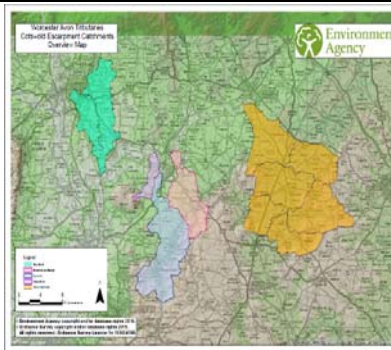
The scheme is currently in the design phase. Since last quarter **the planning application is nearing submission, collaboration agreements are in development**, the final design is being developed and the business case is being completed for sign off.

Updates:

Construction is planned to start in spring/summer 2019 subject to the relevant approvals and funding being in place.

Worcestershire Avon Cotswold Tributaries Natural Flood Management

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Worcestershire County Council	£499,000	£499,000	£0	£0	£153,000	-	n/a	n/a	Worcestershire Wildlife Trust



Locations of NFM in Worcestershire

Details:

This is a NFM catchment scale project funded from the Defra £15 million allocation. The project will focus on reducing flood risk in three distinct catchment areas in Worcestershire. The catchments have a diversity of flood risk characteristics from dispersed, small rural communities to urban and industrial developments.

Key Partners:

The project is led by Worcestershire County Council, through a partnership with the Environment Agency. Key stakeholders and delivery partners include: Worcester City Council, Wychavon District Council, Wyre Forest District Council, Tewkesbury Borough Council, Gloucestershire County Council, Natural England, the Forestry Commission, Community Flood Action Groups, Worcestershire and Gloucestershire Wildlife Trusts, other NGOs and private landowners.

Status:

The business case has now been signed off and the Project Officer began working in August 2018. Governance and structures for delivery and reporting have been agreed and some engagement with landowners and community groups has been carried out. A Monitoring Programme is being worked up.

Update:

The initial focus is on the Isbourne, Merry and Badsey Brook Catchments with works being scoped for Toddington led by Project Officer Wendy Bufton. A more detailed work programme including costings is being developed by the Projects Officer(s) to include the above catchments together with the Dowles Brook (Wyre Forest) and Barbourne Brook (Worcester City). The project is awaiting quotes for monitoring and a draft monitoring plan is being pulled together with work packages agreed. A plan is in place for NFM measures to be implemented on the Isbourne - Charlton Abbots Estate before end of December 2018 (approximately a third of the Isbourne catchment) and Toddington Manor by March 2019. There is a clear direction for delivery in the Cotswold tributaries over the next 2 years which will result in a more detailed work plan being drawn up. There has been significant engagement in the Dowles Brook with opportunities identified and some measures being planned for delivery in the next few months. Further opportunities exist on the Barbourne but need to link with the scheduled upgraded modelling (mentioned in separate entry) to understand where measures will be most effective. Other opportunities are being investigated on land owned by Worcestershire County Council. The first Steering Group meeting took place on 27th November 2018 and future ways of working agreed.

Projects in multiple Counties

National Property Level Resilience Package

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£4,310,676	£2,513,515	£1,643,161	£154,000	£208,833	150 OM2	3 (Medium-High)	3 (Medium-High)	-

Details:

This is an Environment Agency led scheme which will package together the Property level Resilience projects in Bishops Cleeve, Cam, Dudbridge, Evesham (incl. Bretforton, South Littleton), Gloucester to Tewkesbury, Himbleton, Droitwich (incl. Hunters Way), Stroud (incl. Nailsworth, Bridgend) River Wye (Brockweir, Elmdale, Lydbrook, Redbrook), Shrewsbury and Wickhamford.

Status:

Threshold surveys have now been completed for all locations, and initial results have been communicated to homeowners. Economic analysis is underway to support the business case. Detailed surveys will be offered to eligible properties once the new Property Level Resilience Framework is confirmed for use.

Updates:

The PLR Framework is due to become live **by January 2019**. All projects in the package are still programmed to be delivered within the 6 year programme (2020/21), and we are looking to accelerate projects to deliver OM2s earlier in the programme where we can. We are also looking at opportunities to deliver more OM2s than currently identified within the 6 year programme period. Acceleration of the programme is dependent upon funding, community engagement and PLR uptake.

Community engagement is proposed to start in **winter 2018/19**. This will be through the use of letters and drop in sessions.

Avon Sluices MEICA and Initial Assessment

Lead RMA	Total funding over 6 Year Programme	FCRM GIA funding	Local Levy funding	Contributions	2018/19 Budget	Outcome Measures	Confidence in Number of homes	Confidence in Delivery of homes before March 2021	Supplier
Environment Agency	£149,421	£149,421	£0	£0	£85,000	-	n/a	n/a	Capita

Details:

The Avon Sluices Initial Assessment project combines MEICA and Civil condition and initial assessments and completes several pieces of work which were commissioned to understand the current condition, liability, benefits and risks of the navigable Avon weirs and sluices. It will enable an Area-led Asset Management business case to be submitted to DEFRA which will highlight the Environment Agency's legal ownership and maintenance responsibilities and the financial and reputational risk of structural failure.

Status:

All 8 Initial Assessments have been received in draft form and are currently being reviewed by the Environment Agency. The project is programmed to close ahead of the 2018/19 financial year end.

Paper by: Area FCRM Programme Manager

Subject: English Severn & Wye RFCC 6 year Investment Programme 2019/20

Recommendation

The English Severn & Wye Regional Flood and Coastal Committee is asked to:

1. Note and endorse the Baseline 2019/20 Programme (Year 5 of the 6 year Capital Programme and the Revenue Maintenance allocation).

1.0 Introduction

- 1.1 The purpose of this paper is to provide the English Severn & Wye Committee with the 2019/20 baseline FCRM Investment programme.

2.0 Key Messages

- The overall value of the English Severn & Wye RFCC Programme for 2018/19 is just over **£16 million**
- **£4.6 million** of this is **FDGiA** from central government
- **£2.5 million** of this is **Local Levy** raised from the English Severn and Wye RFCC
- **£9.1 million** of this is made up from **public and private contributions**
- This investment will help better **protect approximately 800 homes** from flooding (OM2) in 2019/20.

3.0 2019/20 FCRM Programme

- 3.1 The 2019/20 English Severn & Wye RFCC baseline programme for all funding sources is included in Appendix 1.
- 3.2 For the FDGiA Capital Programme we manage to approximately 10% above the allocation provided to us from Defra. This is called the additional programme. The reason that we do this is to ensure that if we experience unforeseen delays, we can still achieve our outcomes for the year. This assists with the financial requirement that we spend our allocated budget, as we are not able to carry forward FDGiA balances from one year to the next.

- 3.3 Throughout the year there will be opportunities to strengthen the programme by accelerating projects from future years or the pipeline programme.
- 3.4 The proposed additional programme for the English Severn & Wye RFCC is still to be agreed by the National Programme Management Office and an update will be provided to the committee in April 2019. It is proposed the additional programme will consist of projects that may have experienced unavoidable delays and require additional funding in 2019/20 as well as projects from future years where there are opportunities to accelerate. An indicative proposal has been provided in Appendix 1.
- 3.5 The funding will be available from April 2019; between now and then the Area Programming Team will be working with the Project Teams in preparation for this. If RFCC members would like any further information on any of the Projects in Appendix 1 this is available through the Area Flood Risk Manager or the Partnerships and Strategic Overview Teams.
- 3.6 The £2.5 million contribution provided by Local Levy in 2019/20 has attracted £4.6 million of FDGiA to deliver flood risk improvements within the English Severn & Wye RFCC.
- 3.7 The indicative additional programme for the English Severn & Wye RFCC has a value of £0.5 million FDGiA for the 2019/20 programme. Strengthening opportunities are currently underway to further accelerate projects within the 6 year investment programme.

4.0 2019/20 Outcome Measures (OM2) – Households Protected

- 4.1 The English Severn and Wye RFCC has a target of reducing flood risk to 2,965 households over the 6 year programme 2015-2021. This feeds into the national commitment to reduce flood risk to 300,000 households within this time period across England.
- 4.2 The English Severn & Wye RFCC programme is forecast to deliver approximately 800 households better protected from flooding in 2019/20.

5.0 Revenue Maintenance

- 5.1 The indicative allocation for FCRM maintenance for the English Severn & Wye committee is detailed in table 5.1 below.
- 5.2 The allocation for 2019/20 is highlighted below along with the indicative allocation for each year of the 5 year maintenance programme. The 2018/19 allocation is given for comparison. A further breakdown of the 2019/20 revenue maintenance allocation is given in Appendix 2.

	Indicative 5 year maintenance programme					
	2018/19 Allocation	2019/20 Allocation	2020/21 Indicative allocation	2021/22 Indicative allocation	2022/23 Indicative allocation	2023/24 Indicative allocation
English Severn and Wye RFCC	£4.49 million	£4.83 million	£4.41 million	£4.41 million	£4.41 million	£4.41 million
National allocation	£104 million	£104 million	£104 million	£104 million	£104 million	£104 million

Table 5.1: Indicative FDGiA allocation for revenue maintenance for English Severn & Wye RFCC Programme.

5.3 The indicative allocation has been determined following a risk based analysis by area based operational colleagues including peer review between areas to assure consistency.

6.0 Conclusion

6.1 The Committee is asked to:

1. Note and endorse the Baseline English Severn & Wye RFCC 2019/20 Programme (Year 5 of the 6 year Capital Programme and the Revenue Maintenance allocation).

Rhys McCarthy
English Severn & Wye FCRM Programme Manager

December 2018

Project Name	RMA	2019/20 Programme				OM2 Over 6 year programme			OM4 Over 6 year programme		
		2019/20 Total Budget	2019/20 Budget GIA Expenditure	2019/20 Budget Local Levy Expenditure	2019/20 Budget Publicly / Privately funded Contribution Expenditure	OM2	OM2b	OM2c	OM4	OM4b	OM4c
Alcester FAS	Environment Agency	600,000	200,000	0	400,000	118	118	0	0	0	0
Allesley, River Sherbourne, Flood Risk Management Scheme	Environment Agency	1,380,000	444,000	486,000	450,000	34	34	0	0	0	0
Areley Kings Flood Alleviation	Wyre Forest District Council	5,000	0	0	5,000	29	7	0	0	0	0
Badsey Brook (Broadway, Childswickham and Murcot) FAS	Environment Agency	5,000	5,000	0	0	261	108	0	0	0	0
Bagley Brook Catchment Project	Environment Agency	35,000	0	0	35,000	40	40	0	22	0	0
Barbourne Brook FAS	Environment Agency	399,000	0	399,000	0	131	131	0	3	0	0
Bennetts Road, Keresley Flood Alleviation Scheme	Coventry City Council	140,000	140,000	0	0	14	0	0	0	0	0
Cleobury Mortimer, Pudding Brook, Flood Alleviation Scheme	Shropshire Council	180,000	90,000	90,000	0	28	28	0	0	0	0
Coal Brook, Coalbrookdale, Flood Relief Works	Telford and Wrekin Borough Council	155,000	155,000	0	0	39	39	0	0	0	0
Fenny Compton, Flood Alleviation Scheme	Warwickshire County Council	175,500	0	0	175,500	15	15	0	0	0	0
Gosford Brook, Brimfield, Flood Alleviation Scheme	Herefordshire Council	96,300	96,300	0	0	28	28	0	0	0	0
Hunters Gate, Surface Water Flood Alleviation Scheme, Much Wenlock	Shropshire Council	128,000	128,000	0	0	23	23	0	0	0	0
Longden, Flood Alleviation Scheme	Shropshire Council	12,500	7,500	5,000	0	5	0	0	0	0	0
Lower Brailes Flood Alleviation Scheme	Warwickshire County Council	379,000	379,000	0	0	53	0	0	0	0	0
North East Bomere Heath, Shropshire, Flood Alleviation Scheme	Environment Agency	65,000	0	0	65,000	6	6	0	0	0	0
Pailton, Rugby, Flood Alleviation Scheme	Warwickshire County Council	111,400	99,400	0	12,000	12	12	0	0	0	0
River Severn, Westbury-on-Severn Flood Alleviation Scheme	Environment Agency	33,900	0	33,900	0	55	55	0	8	0	0
Rowleys Green Lane, Coventry, River Sowe, Property Level Protection Scheme	Environment Agency	26,754	6,012	14,742	6,000	5	0	0	0	0	0
Severn Stoke FAS, River Severn	Environment Agency	735,000	100,000	220,000	415,000	19	19	0	0	0	0
Slow the Flow - Shropshire Rivers	Environment Agency	70,000	70,000	0	0	0	0	0	15	0	10
Stratford-Upon-Avon, Racecourse Brook, Flood Risk Management Scheme	Environment Agency	396,200	200,000	0	196,200	47	0	0	0	0	0
Sud and Twyver Flood Risk and Restoration Project	Environment Agency	350,000	350,000	0	0	370	370	0	0	0	0
Undefended Properties in the Ironbridge Gorge Individual Property Protection	Shropshire Council	50,000	0	50,000	0	38	0	0	0	0	0
Upper Brookstray, Coventry, Flood Risk Management Scheme	Environment Agency	787,600	90,400	0	697,200	45	45	0	1	0	0
Upper Hearne Brook FAS (Beeches Road)	Cheltenham Borough Council	155,000	105,000	0	50,000	18	4	0	0	0	0
Welford on Avon Flood Alleviation Scheme	Warwickshire County Council	93,000	93,000	0	0	13	13	0	0	0	0
Wesley Brook, Shifnal, Flood Alleviation Scheme	Shropshire Council	200,000	0	200,000	0	87	87	0	0	0	0
West Mids PLR - Badsey Brook, Wickhamford and Badsey	Environment Agency	355,642	65,200	290,442	0	25	2	0	0	0	0
West Mids PLR - Brockweir	Environment Agency	242,529	94,548	147,981	0	32	4	0	0	0	0
West Mids PLR - Gloucester to Tewkesbury, River Severn	Environment Agency	319,075	0	279,075	40,000	191	50	0	0	0	0
Withybrook, Warwickshire Flood Alleviation Scheme	Severn Trent Water	95,000	30,000	60,000	5,000	9	9	0	0	0	0
Worthen, Flood Alleviation Scheme	Shropshire Council	42,500	32,500	10,000	0	16	16	0	0	0	0
NFM - River Lugg and Wye integrated Natural Flood Management	Environment Agency	195,000	195,000	0	0	0	0	0	10	0	10
NFM - Shropshire Slow the Flow - Severn Tribs	Environment Agency	195,000	195,000	0	0	0	0	0	5	0	10
NFM - Worcestershire Avon/Cotswold Escarpment Tributaries	Environment Agency	153,000	153,000	0	0	0	0	0	5	0	0
Environment Programme											
N2K Wye and Lugg: Lugg Living Landscapes	Environment Agency	145,000	50,000	0	95,000	0	0	0	0	0	125
REAction Flood Alleviation Scheme (Rea Brook Action Project, Shropshire)	Environment Agency	451,106	0	0	451,106	0	0	0	80	0	7
Recovery of the Severn Estuary SAC and delivery of River Teme (SSSI) river restoration restoration plan	Environment Agency	4,100,000	100,000	0	4,000,000	0	0	0	0	0	285
River Clun/Teme SAC and SSSI - Unmuddying the Waters	Environment Agency	150,000	95,000	0	55,000	0	0	0	0	0	19
River Frome (Stroud) Connected	Environment Agency	1,800,000	0	0	1,800,000	0	0	0	33	1	19
Rural SuDS Pilot - River Frome Stroud Valleys	Environment Agency	70,000	0	55,000	15,000	0	0	0	0	0	2
Support schemes											
Hydrometry and Telemetry Capital Projects	Environment Agency	80,500	80,500	0	0	0	0	0	0	0	0
Modelling and Forecasting Capital Projects	Environment Agency	212,000	212,000	0	0	0	0	0	0	0	0
Southwest Regional Coastal Monitoring Programme - Severn Estuary Coastal Group - English Severn and Wye RFCC	Environment Agency	39,449	39,449	0	0	0	0	0	0	0	0
Additional Programme											
Bishops Cleeve, Gloucestershire Flood Alleviation Scheme	Gloucestershire County Council	95,000	0	0	95,000	91	31	0	0	0	0
Com NFM - Yazor Brook Flood Alleviation	Environment Agency	31,439	25,439	0	6,000	0	0	0	0	0	0
River Lugg, Leominster Flood Alleviation Scheme Improvements	Environment Agency	410,000	207,000	203,000	0	251	251	0	0	0	0
West Mids PLR - River Wye	Environment Agency	217,500	217,500	0	0	114	33	0	0	0	0
Yelvertoft FSA Recondition Works	Environment Agency	40,000	40,000	0	0	0	0	0	0	0	0
ESW - FCRM Capital Salaries		TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC

Item 8 – Appendix 2

FDGiA indicative revenue maintenance programme for the English Severn and Wye RFCC 2019/20

			Type of Work – Indicative Allocation (£k)										Funding Source
RFCC	Year	System Risk	Dredging	Maintenance and Conveyance	Maintain Raised Defences	Maintain Structures	MEICA	Operation	Survey / Inspections	Statutory Inspections	Raised Defence Repairs	Unscheduled	Total (FDGiA)
Severn and Wye	19/20	High	135	1,058	712	433	243	22	35	2	133	937	4,833
		Medium	-	217	545	35	84	1	-	-	2		
		Low	-	81	41	30	73	14	-	-	-		
	20/21		123	1,237	1,185	454	365	34	32	2	123	855	4,410
	21/22												4,410
	22/23												4,410
	23/24												4,410

Paper by: Area FCRM Programme Manager

Subject: Internal Drainage Board (IDB) Precept & Foreign Water Contribution for 2019/20

Recommendations

1. The English Severn and Wye RFCC is asked to approve the Internal Drainage Board (IDB) Precept and Foreign Water Contribution as outlined in table 1 for 2019/20 and note the in principle increase for the life of the 6 year programme.

1.0 Introduction

- 1.1 The purpose of this paper is to assist the English Severn and Wye RFCC in endorsing the IDB precept and Foreign Water Contribution for 2019/20.

2.0 IDB Precepts and Foreign Water Contribution

- 2.1 In addition to Local Levy, IDB Precepts are another form of locally raised income. They are raised by IDBs to reflect contributions towards activities within the catchment from which they benefit (for additional maintenance of Environment Agency flood risk management activities due to the need to convey water from the IDB drainage network). The amount raised is set by the RFCC and is reviewed annually.
- 2.2 The Environment Agency makes a Foreign Water Contribution (FWC) payment for costs incurred by some Internal Drainage Boards. This payment is permissive and is calculated on what is considered to be a fair contribution.
- 2.3 In November 2018 the IDBs and EA held their annual Severnside IDB liaison meeting. This was alongside individual meetings held between the IDBs and the Environment Agency over the course of the year. Through these meeting and subsequent written correspondence the agreed proposals put forward by the IDBs and the Environment Agency is for a 2% inflationary increase in IDB Precept and FWC for 2019/20. The proposals also include an in principle 2% per annum increase in Precept and FWC for the life of the 6 year investment programme. See table 1 below.
- 2.4 The proposals below have been agreed by the IDBs and the EA.

2019/20			
INTERNAL DRAINAGE BOARD	Precept £	FWC £	Net Precept / FWC £
Lower Severn	209,699	164,058	45,641
Melverley	3,807	6,366	-2,559
River Lugg	17,226	17,226	0
Rea	1,338	2,388	-1,050
Strine	1,061	1,061	0
Sub Total	233,131	191,099	42,032

Table 1: IDB Precept and FWC payments 2019/20

3.0 Conclusions and Recommendations

- 3.1 The English Severn and Wye RFCC is asked to approve the IDB Precept and Foreign Water Contribution as outlined in table 1 for 2019/20 and note the in principle increase for the life of the 6 year programme.

Rhys McCarthy
English Severn & Wye FCRM Programme Manager

December 2018

The Shropshire Natural Flood Management Project

RFCC is asked to

1. Note the progress of the Defra funded Shropshire Natural Flood Management Project.
2. Note the wider added benefits that are being incorporated through bringing the community together to work in partnership from the very concept

1. Introduction

The Government set out renewed commitment for NFM in 'A Green Future: Our 25 Year Plan to Improve the Environment', which sets out what the Government, including the Environment Agency, the Forestry Commission and Natural England, will do to improve the environment, within a generation. Natural Flood Management is recognised as one of the ways in which flood risk can be managed and the Plan includes an action to learn from the 2017 NFM funding provided to catchment and community scale NFM schemes. The Shropshire NFM Project is one of the projects which has £626k funding for three years from the Defra £15M NFM funding allocation. This builds on the Shropshire Slow the Flow funding received from the RFCC.

The Shropshire NFM Project incorporates the Shropshire Slow the Flow Project and the Farm the Flow Project and cover the Corvedale and Coalbrookdale catchments the two projects are managed by Shropshire Council and Telford & Wrekin Council respectively. On the ground delivery, talking to farmers and implementing the interventions, is carried out by the Shropshire Wildlife Trust and The Severn Gorge Countryside Trust.

“We will take action to reduce the risk of harm from flooding and coastal erosion including greater use of natural flood management solutions.”

*Source: Defra's 25 Year Environment Plan,
<https://www.gov.uk/government/publications/25-year-environment-plan>*

The project governance arrangements are shown in Appendix 1.

2. Objectives

Defra NFM Funding Objectives

- 1.Reduced flood or coastal erosion risk to homes
- 2.Improved habitats and increased biodiversity
- 3.Supported and developed partnership working with and between communities
- 4.Contributed to research and development

A key requirement of the Defra funding is that projects are monitored. Defra expects us to regularly report back to them to explain to what extent these projects meet their four funding objectives.

In addition, in our business case we stated that the project will:

1. Directly reduce flood risk to 134 residential properties in the catchment of the River Corve and 34 residential properties in Coalbrookdale. These properties are those at very significant risk i.e. where the annual exceedance probability is less than 5% (1 in 20-year event). It will also provide further flood risk benefits to a significant number of additional properties downstream;
2. Provide additional, quantifiable benefits of natural flood management in line with the wider environmental objectives of Defra's 25 Year Plan (for example water quality, wildlife, or carbon sequestration, but not limited to these things);
3. Enhance the evidence base of natural flood management schemes and assist with demonstrating the need for these techniques elsewhere in the future;
4. Build on investments from within the Defra group and draw in investment from external partners in each area to deliver value for money for the spend across Defra's objectives;
5. Secure the measures for which the project is funded. This involves gaining the agreement and cooperation of landowners and the consent of any relevant authorities;
6. Collect and openly publish data, monitor and report on the impact of the work undertaken on reducing flood risk and any other benefits in order to identify future learning; and
7. Be clear on the role of other stakeholders in planning and implementing the project establishing what is open to influence and how others can engage in the process.

With specific objectives to:

- a) Deliver a demonstrable reduction in flood risk to properties and businesses;
- b) Deliver a demonstrable improvement in habitat and biodiversity in the area of interventions
- c) Successfully monitor changes the project brings about in both flood risk and environment to add to the evidence base for Natural Flood Management.
- d) Ensure that stakeholders feel they are informed of the process, are consulted where there is scope for them to influence, and we work collaboratively where we can deliver shared outcomes
- e) Deliver a project review to add to the lessons learnt and enable continuous improvement in natural flood management project delivery

3. Study Catchments

3.1 Shropshire Slow the Flow – Corvedale

The Shropshire Slow the Flow project was funded by £140k from Capital Grant in 2016/18. Following an initial work on the Battlefield Brook east of Shrewsbury and the Seifton Brook tributary of the river Corve upstream of Culmington, the project focus has been on other tributaries of the river Corve, now funded as part of the Defra NFM project.

3.1.1. Catchment overview

The Corve Dale catchment is approximately 150km² running in a South Westerly direction from Much Wenlock in the East joining the river Teme at Ludlow. There are a series of tributaries that flow from the side of Wenlock Edge to the north known as the 'Hope Dales' these are similar in their characteristics with springs arising from the limestone escarpment and flowing South through glacial clay deposits to the main river Corve. The Southern side of the Corve Dale has two principal tributaries, the Clee Brook and the Tug Brook, arising from the sides of Clee hill and flowing North West to join the river Corve. Villages in the area tend to be built around watercourses and a combination of land use change over the last 70 years together with constriction of the watercourses within villages and the impact of climate change has resulted in increased prevalence of localised flooding.

To date, some 200 woody debris dams and other interventions have been made in the catchment. In December 2018, 1,250mtrs of hedge and 0.58Ha of trees have been planted in various locations across the catchment, positioned to intercept overland flows.

3.1.2. Reduced flood risk to homes

Using a variety of natural flood management techniques, each making the most of its distinct local conditions, the tributaries of the River Corve are being modified to delay and reduce flood peaks downstream. This has the potential to directly and measurably reduce flood risk to some 134 properties across the catchment of the Corve. As the project has no FDGiA funding then these cannot be claimed as OM2.

The monitoring of river levels for the project has facilitated community flood warnings for Culmington & Diddlebury. The river level warning systems link to the Emergency Community Flood Resilience Plans owned and implemented by the communities themselves.

A rainfall event on 31st May caused localised flooding to roads and property in Middlehope. From previous experience of floods of a similar magnitude in 2007, 2009 and 2012, the residents of Diddlebury expected to flood but did not. In his letter to Phillip Dunne MP, the Chair of Diddlebury Parish Flood Action Group attributed this to the 50 leaky dams that had been installed in the Diddlebury Brook between Middlehope and Diddlebury. Phillip Dunne passed the letter onto Michael Gove Secretary of State for The Environment and Therese Coffey, Under Secretary of State for the Environment, to inform them of the success of the measures so far installed.

3.1.3. Improved habitats and increased biodiversity

Shropshire Wildlife Trust have carried out invertebrate surveys along a series of debris barriers in the year that they were installed in order to provide a baseline for future surveys to assess biological changes. In addition to the increased habitat complexity of the woody debris barriers themselves we have observed positive changes to the geomorphology of the rivers. Changes include formation of pools upstream of barriers, both temporary and permanent, and the cleaning of gravels immediately downstream of the barriers. The number and frequency of backwaters and wetlands within the wider channel has increased. In some locations, channels are dividing to create a braided river formation.

A 180m x 8.0m swale that has been built to attenuate and reduce field runoff will be planted with a wildflower seed mix suitable for insects and pollinators.

600m² of semi-natural wetland habitat will develop in the pond that has been improved for the benefit of flood attenuation.

3.1.4. Supported and developed partnership working with and between communities

The project was initiated by the creation of a Community Flood Action Group in the village of Culmington which resulted in an initial project within the Seifton Batch, their local upstream sub-catchment. Due to the successful bid for funding the neighbouring village of Diddlebury, along with Bourton and Ludlow, facilitated by the National Flood Forum, also created a Flood Action Group. As a result of the significant community led interest in exploring Natural Flood Management techniques, Shropshire Wildlife Trust and Shropshire Council were able to bid for a larger fund covering the whole Corve Dale, Shropshire Slow the Flow received £140k funding from the RFCCA foundation and Local Levy which helped justify the successful £626k Defra NFM bid.

The Shropshire Slow the Flow project aims to work with communities to tackle local flooding issues by engaging farmers and landowners in Natural Flood Management techniques. Priority catchments are set by Shropshire Council's flood risk register together with the Flood Action Groups, focusing resource where there is a known and frequent flood risk

Walk over surveys are conducted and opportunity maps created, these are discussed with the landowner and agreement on a range of measures is sought in the target catchments. Once a signed agreement is reached, measures are checked for cost effectiveness against the available budget and put out to tender. Twenty-six farmers and landowners have had works completed on their land and in excess of sixty have been in direct communication with a project officer. Local contractors and the farmers themselves are used where possible in order to build the local skills base for future sustainability.

3.1.5. Contributed to research and development

The Corve catchment Monitoring consists of rain gauges either side of the catchment and a series of river level gauges on the tributaries and main river. Rain gauges and some river level gauges were in place before the start of the project, providing base line data, and all river level gauges were installed before work commenced. This data requires statistical analysis in order to understand how the hydrograph has changed after the installation of upstream interventions, this analysis is intended to be carried out in 2019. Monitoring of flow, sediment and water quality will be undertaken on individual brooks to provide sub-catchment specific data and will include community flood warning support.

Working with Cardiff University a PhD project has been established in order to accurately measure the flow dynamics of Leaky Woody Debris Barriers, this data will be cross referenced with in-lab flow dynamics studies and will produce the best data evidence for modelling the effectiveness of this intervention technique. Hydrometric and bathymetric monitoring together with geometric monitoring of the Woody Debris Dams will provide information on how WDDs interact with low and high frequency flows, how WDDs impact on the river bed geometry and hold back flood waters and sediment.

The Project aims correspond to knowledge gaps identified by the WWNP Evidence Directory (EA, 2017):

- 1) Effectiveness of Woody Debris Dams on flood level, flow, flow peak and flood attenuation for a range of flood event return periods (EA, Gap 1).
- 2) Impact of scale of Woody Debris Dam measures needed at reach level and catchment level in order to reduce flood risk (EA, Gap 1).
- 3) Effects of dam design and condition on sediment transport dynamics and ecological characteristics at a sub-catchment scale (EA, Gap 2 and 4).

Fixed point photography locations have been set up with monitoring by both the local community and project officer, this will allow a record of the evolution of the structures to be recorded.

All interventions are recorded on an asset map and the habitat created and watercourse improved is logged. Where Autumn field aeration has been carried out, we intend to carry out infiltration tests in the Spring, compared with unaerated in-field strips.

Anecdotal evidence is also being collected from the local community. It is recognised that this level of data collection is relatively coarse and that it produces little relevant data for use in accurate modelling.

3.2 Farm the Flow - Coalbrookdale

3.2.1 Catchment overview

The Coal Brook catchment covers an area of approximately 1km² in the Ironbridge Gorge World Heritage Site. The brook has been heavily modified along its length to power the industry associated with the birthplace of the industrial revolution. Due to the speed and severity of the flooding in Coalbrookdale it has been designated as a Rapid Response Catchment by the Environment Agency. Although a relatively small catchment, the brook is augmented at Upper Furnace Pool by two larger tributaries whose catchments serve areas of south Telford.

The Lightmoor Brook forms the eastern arm and covers an area of 7.4km². Although heavily urbanised a series of pools and culverts along its length regulates its rate of discharge during storm events.

The rural Lyde or Loamhole Brook forms the western arm and covers an area of 5.8km. The catchment is a plateau of farmland with a steep sided valley at its centre. Ground conditions on the farmland are predominantly clay and quickly respond to rainfall, channelling flows into the central valley. Due to the steep sided nature of the valley its banksides are regularly undercut resulting in high sediment loading. This is compounded by the presence of huge quantities of highly mobile pulverised fuel ash (PFA) produced by the nearby Power Station and dumped in the catchment in the 1970's. Flows produced by the Lyde Brook flow unrestricted into Upper Furnace Pool.

3.2.2 Reduced flood risk to homes

Due to its status as a Rapid Response Catchment, the flood zone mapping in provided by the EA in Coalbrookdale has recently been updated. A total of 44 properties are mapped as being at risk of internal flooding along with several small businesses and a doctor's surgery. The Museum of Iron is located direct below Upper Furnace Pool and is also mapped as at risk. The original Abraham Darby furnace is situated in the museum complex therefore any flooding will have significant heritage implications. Although not directly at risk, any flooding will also affect access to Coalbrookdale Junior School.

The installation of NFM features in the Lyde Brook catchment will be monitored by a series of gauges installed on each of the smaller tributaries. The data gathered by these gauges will provide a baseline for the creation of a catchment model and information on the effectiveness of the NFM features, once installed.

The installation of additional telemetry gauges in the upper catchment will also enhance the existing flood warning system provided by the gauge at Upper Furnace Pool. Due to the proximity of the existing gauge to the properties at risk the time between flood alert and flood warning can be a little as 15 to 30 minutes. Over the lifetime of the project Telford & Wrekin Council will work with the gauge provider to improve the warning system to give property owners additional time to take meaningful action to protect their properties.

3.2.3 Improved habitats and increased biodiversity

Work will involve felling very local trees within the SSSI. Permission will be obtained from Natural England and the Forestry Commission before any works. Each tree to be felled will be inspected for bat habitat and further investigations carried out as necessary. A habitat assessment methodology will be agreed with Natural England before any works begin. The assessment report will be produced by John Handley, the Severn Gorge Countryside Trusts (SGCT) ecological consultant, who will produce a report. Trees outside the SSSI will also be assessed for bats and works will take place outside of the bird nesting season. A habitat survey will be produced before any installation of bunds or ponds, with recommendations for creation and management to ensure that this fits with SGCT's wider landscape approach.

3.2.4 Supported and developed partnership working with and between communities

Telford & Wrekin Council and the EA have previously attempted to engage with the local community in Coalbrookdale but have had limited success. Running in parallel to the natural flood management project is a Citizen Science Project called 'Learning about Lydebrook' which will be delivered by SGCT who own land in the catchment and are a key partner in the overall Farm the Flow project. The SGCT have an existing network of well engaged volunteers, many of which live or work in the wider catchment.

The SGCT are designing a series of modules with experts to engage interested members of the local community to establish a common level of knowledge about the catchment, its hydrology, geomorphology, soils, ecology and land use. SGCT will also be creating a Digital Living Archive of local memories of the catchment and floods. Those who wish to continue involvement after taking the modules will then be able to choose where their interest lies, and will be encouraged, and supported, over the final 18 months of the project to develop these skills so they can continue after the project ends. The process will be evaluated throughout and a report produced at the end.

3.2.5 Contributed to research and development

Due to the complexity of the catchment the Farm the Flow project represents an opportunity to investigate the impact of woody debris dams on steep sided catchments and sediment capture.

During catchment walkovers it has been identified that whilst natural woody debris dams have caused localised erosion, they also capture a significant amount of silt and debris behind them, infilling the steep valley and improving bank stability upstream. In other catchments this build-up of sediment may take many years to accumulate, but due to the steep sided and unstable nature of this catchment this can be monitored over the project period.

Telford & Wrekin Council and the SGCT will be working with Harper Adams University to develop a monitoring program to measure the volume of erosion and deposition associated with the installation of several installed and natural debris dams along a section of watercourse. It is hoped that the citizen science project can be incorporated into this monitoring once the group are suitably trained.

Harper Adams final year students are currently undertaking two projects monitoring flow rates and discharge together with soluble reactive phosphate and nitrate, total phosphorus, suspended solids and alkalinity at 5 different locations once a month, supported by SGCT. The intention is also to try to monitor and take sample during any higher flow events. This is particularly useful as the largest landowner in the catchment is converting to organic farming over the next two years which will potentially alter the chemical composition of run off. Telford & Wrekin Council and SGCT will also look to work with Harper Adams to identify further learning opportunities as the project develops.

SGCT have also begun monitoring pH and dissolved oxygen at each of the proposed gauge locations. Previous research by Wolverhampton University has shown the importance of the pH remaining above 8 to avoid mobilising heavy metals locked in the PFA and other material associated with the power station. Dissolved oxygen will help the monitoring of biodiversity in the catchment including identifying changes caused by pollution, land use and climate change.

4. Community Involvement

Prior to the Shropshire NFM project, Shropshire Council, through the Shropshire Slow the Flow project, recognised and prioritised the importance of the involvement of those affected by flooding. They engaged The National Flood Forum to work with flood risk communities to initiate the forming of Flood Action Groups to ensure grass root involvement, their vision, priorities and buy-in were incorporated. This is also a key feature of the work in Corvedale and Coalbrookdale.

The wider added benefits that are being incorporated should also be noted. These include the less tangible i.e. through bringing the community together to work in partnership from the very concept gives benefit to mental health, helps them to be active and involved in reducing their flood risk, leaves a sustainable legacy, creates civic pride and promotion. Examples of this include the working parties and watercourse maintenance arranged by the Flood Action Groups themselves, they are supported by the National Flood Forum and encouraged to be proactive, and guidance is provided by Shropshire Wildlife Trust and Shropshire Council. This is an opportunity to bring people together with a common goal. Shropshire Wildlife Trust are also arranging a volunteering event to plant trees as part of the project.

5. Partnership / External Funding

The Shropshire Severn Tributaries project has unlocked opportunities and different sources of funding which would not have been possible without the Defra NFM project. It was thanks to National Flood Forum that £20k of external funding from 10:10, a Climate Change Charity was secured for tree planting in the Corvedale Catchment. Shropshire Wildlife Trust were then able to approach Woodland Trust who also contributed £8k and providing c 7000 trees, stakes and guards. These will be planted as short hedges on flow paths and shelterbelts, some of the planting will be community led.

Diddlebury Flood Action Group have received £300 from the Rotary Club towards debris dams.

The Severn Gorge Countryside Trustees have agreed that they will contribute 50% of their officer time to the project.

Shropshire Wildlife Trust have also built-up a fantastic rapport with the landowners and residents within the catchment. It is estimated that work carried out by the landowners to plant hedges and trees equates to £14,000 labour costs avoided which has reduced project costs and maximised works.

Having a project officer has enabled landowners to work with Natural England on Catchment Sensitive Farming / High Level Stewardship which would not have happened without the project. Projects working on farm infrastructure and water management include attenuation & sediment ponds and improvements storage of manure. These have the potential to improve water quality and reduce flows in the Corve.

6. Barriers to implementation

From our experience of installing some 200 plus instream woody structures, plus the evidence from Stroud and Shipston (another c 600), the cost of a structure is c. £150, currently under the Countryside Stewardship Mid-Tier Funding a farmer will be paid £42 to install a structure, this underfunding is a barrier to local initiatives.

Liability for the structures remains an issue, with some farmers reluctant to install structures on their land, but happy for others to do so. However, with grassroot buy-in then often they will support the farmer/landowner in responsibility also, as stated above, this helps to create civic pride and promotion leading to a benefit in the community supporting maintenance.

Future liabilities and potential future land sales have, in some areas, reduced the opportunity to do more work in a catchment.

The nature of the Defra funding and its objective of research to add to the understanding of the effectiveness of NFM, means that the project has focussed on NFM in isolation rather than as part of an integrated solution to flooding. The complex nature of the funding arrangements makes it difficult for projects to align partnership funding and programmes.

7. Lessons learned so far

The community led approach has been invaluable in helping the Project Officer prioritise work and gain landowner contacts. When the flood risk is linked to a close community this often encourages landowners to get on board as the benefit of works is seen locally. The local community also help to 'spread the word' informally and through articles in the local magazine, they have also been integral to gaining the interest of local councillors and MP.

Multi agency meetings in the local community have assisted the different agencies in being more efficient in deploying their resources and allowed local communities to understand the political and strategic landscape, helping themselves where appropriate.

It is important to manage community expectations of the benefits that NFM can bring, together with the availability of funding, and timescales. Communities need to understand that flooding can only be reduced and that NFM measures are only a part of the picture, not a replacement for traditional gully clearance and other ongoing maintenance of drainage structures.

Farming is a business and must be profitable, so the NFM measures need to be in line with the business objectives. Negotiations with the landowners or farmers, about what measures can work, needs a flexible approach with the recognition that the outcome will not necessarily be the perfect suite of measures. Farmers report that they are much more inclined to work with us when there is no compulsion to carry out measures and they value the opportunity to accept, reject or discuss measures with the project officer in order to agree suitable interventions.

It is important that the project maintains a distance from the Enforcement Authority, the appropriate authority should be informed if serious issues are identified and it is at their discretion about how best to tactfully proceed.

As the Corvedale catchment is large, some 150km², it has been necessary to prioritise the funding to catchments which provide the best value for money in terms of flood risk reduction and will add to the knowledge base of NFM. Those measures that have a larger environmental or water quality benefit, but a smaller flood risk benefit have been dropped from the programme.

8. Summary

The Shropshire NFM project has been able to build on the existing Shropshire Slow the Flow and Farm the Flow projects. The diverse nature of the organisations involved has enabled the project to benefit from the wider skills and networks of those organisations which has helped with the on the ground delivery and partnership funding.

The project has made a successful start and will be building on strong foundations to deliver Defra's objectives for the project, particularly in reducing flood risk to the communities of Corvedale and Coalbrookdale.

John Adams – RFCC Conservation Lead
Rhian Townsend – Shropshire Council
John Bellis – Telford & Wrekin Council
Luke Neal – Shropshire Wildlife Trust
Russell Rowley – Severn Gorge Community Trust

Appendix 1. Shropshire NFM Governance Structure & Reporting

Table 1. Shropshire Natural Flood Management Project

EA NFM Steering Group (Strategic Project Governance including delivery progress)	Monthly / Quarterly updates, Apr, Jul, Oct, Jan) Ian Jones Mark Bowers Andrew Osbaldiston Rhys McCarthy / Jim Finnegan Emily Huntingford
NFM Catchment Scale Steering Group (Local Project Governance)	Shropshire:(8 week updates) Chair John Adams EA Andrew Osbaldiston NFM Coordinator Shropshire County Council:Rhian Townsend Telford and Wrekin Council John Bellis / Lou Lycett NFU Sarah Faulkner NE Anne Marie Jones NFF Heather Shepherd SWT Pete Lambert Severn Gorge Community Trust Russell Rowley Severn Gorge Community Trust Mauren Bragg
LA Project Officer (Local Project Management)	Rhian Townsend John Bellis
Local Delivery Group(s) (Delivery on the Ground)	Shropshire (6 to 8 week updates) Project Officer(s) Rhian Townsend and John Bellis SWT Pete Lambert / Luke Neal Severn Gorge Community Trust Russel Rowley EA NFM / Catchment Coordinator Local Flood Action Groups and Landowners (Diddlesbury / Culmington / Severn Gorge) Shropshire /T&W 3 key community groups identified so key delivery partners and rep from each flood action / community group Cardiff Uni Catherine Wilson Harper Adams Lucy Crockford Hydro-logic / H&T NE CSF officer tbc Woodland Trust LFF

Figure 1. West Midlands NFM Project Governance

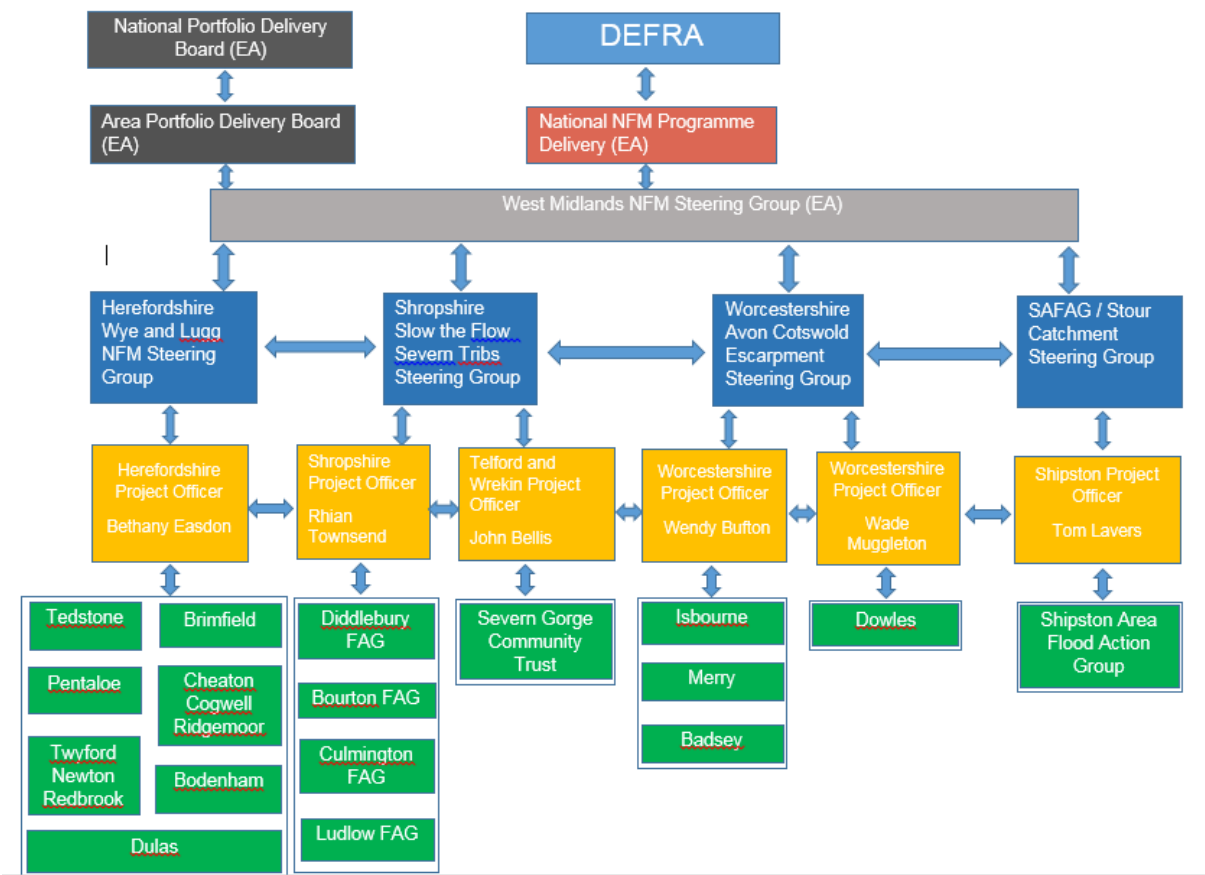


Table 2. Balanced Score card for Reporting

ScorecardProject.		Period/...../..... to/...../.....	
Communities <input type="text"/> Community meetings attended <input type="text"/> Engagement with landowners <input type="text"/> Citizen Science implemented <input type="text"/> Number of hosted visits <input type="text"/>	Benefits <input type="text"/> NFM measures installed <input type="text"/> % installed against planned in 3-month period <input type="text"/> % installed against planned, year to date <input type="text"/> Number of properties with reduced flood risk <input type="text"/> % of properties with reduced flood risk (compared to programme) <input type="text"/> Wider benefits achieved (Biodiversity, Water Quality) <input type="text"/>		
Finance <input type="text"/> Spend to date (£) <input type="text"/> % deviation from spend profile <input type="text"/> Partnership contribution (£) <input type="text"/>	Monitoring & Evidence <input type="text"/> Monitoring stations installed (compared to programme) <input type="text"/> % real time data collected <input type="text"/> Number of storm events monitored <input type="text"/> Contribution to Evidence Base <input type="text"/> Monitoring data published <input type="text"/>		
Notable Achievements	Issues / Guidance Required		

RAG Status to be allocated to each measure, based on project plan.

Project specific targets can be added.

Target for social benefits could be added

Papers to include highlights and variations.

Risk register for each sub-project updated for each meeting.

Spend profile updated for each meeting.

Appendix 2. Corvedale NFM Project Illustrated

Figure 1. Overview of the interventions currently installed on tributaries of the River Corve.

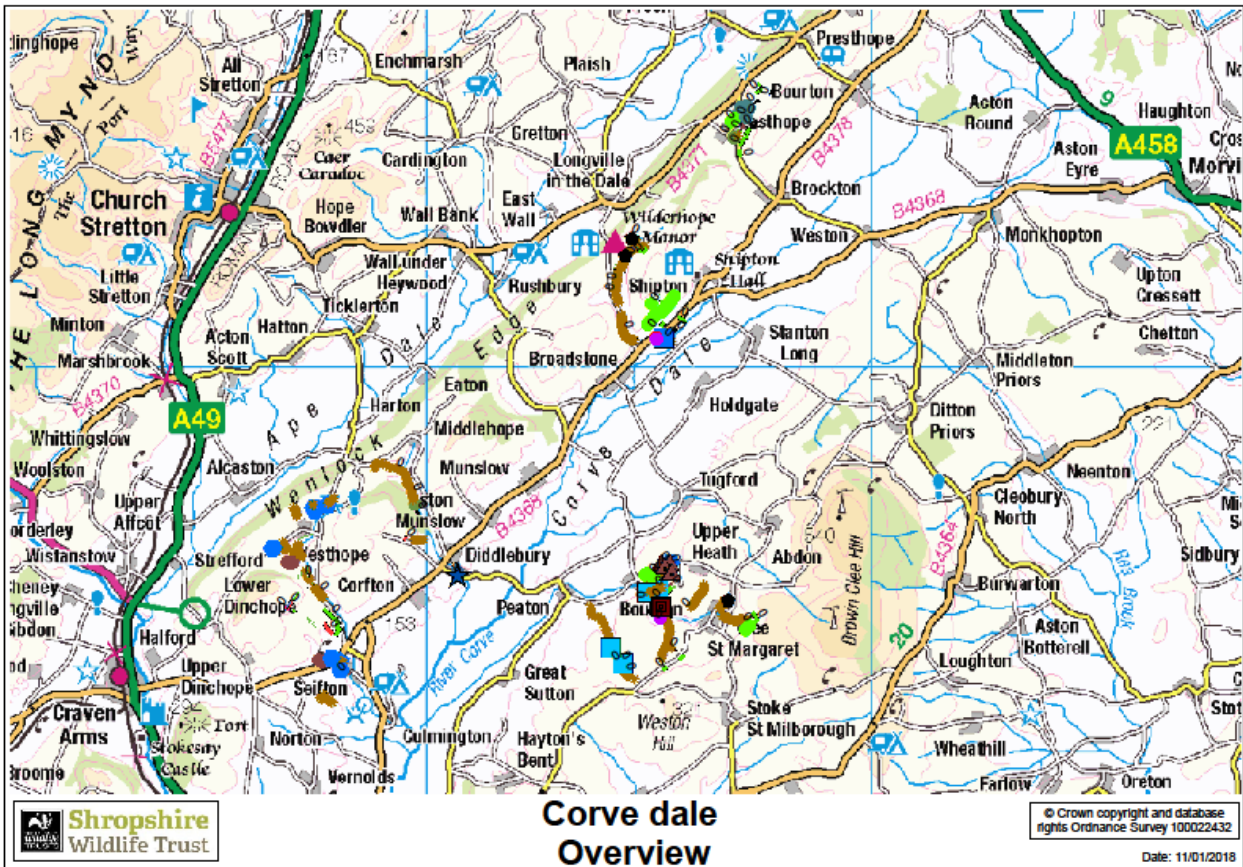


Figure 2. Leaky Woody Debris Barriers



Figure 3. Location of interventions protecting Diddlebury and Culmington

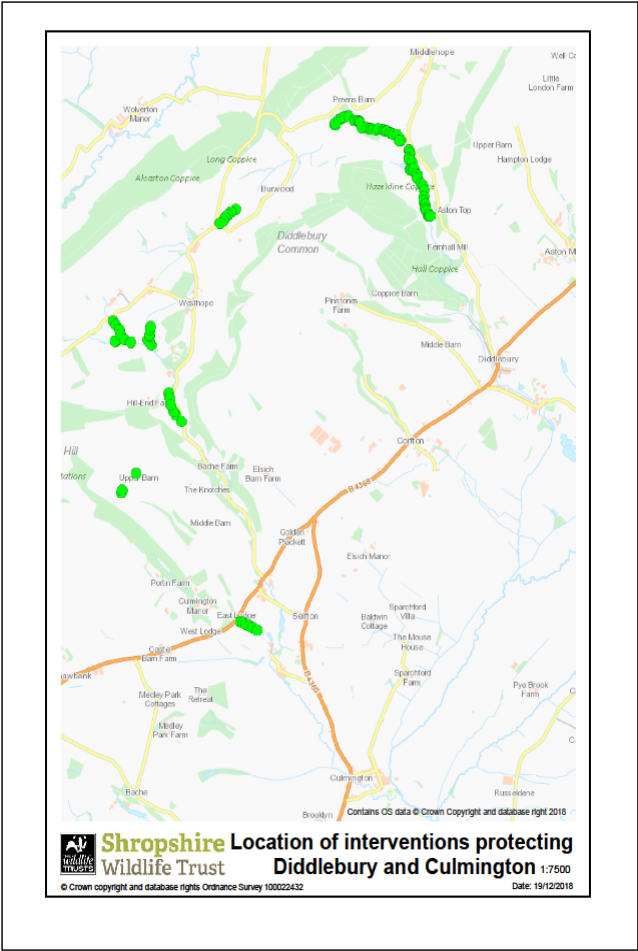
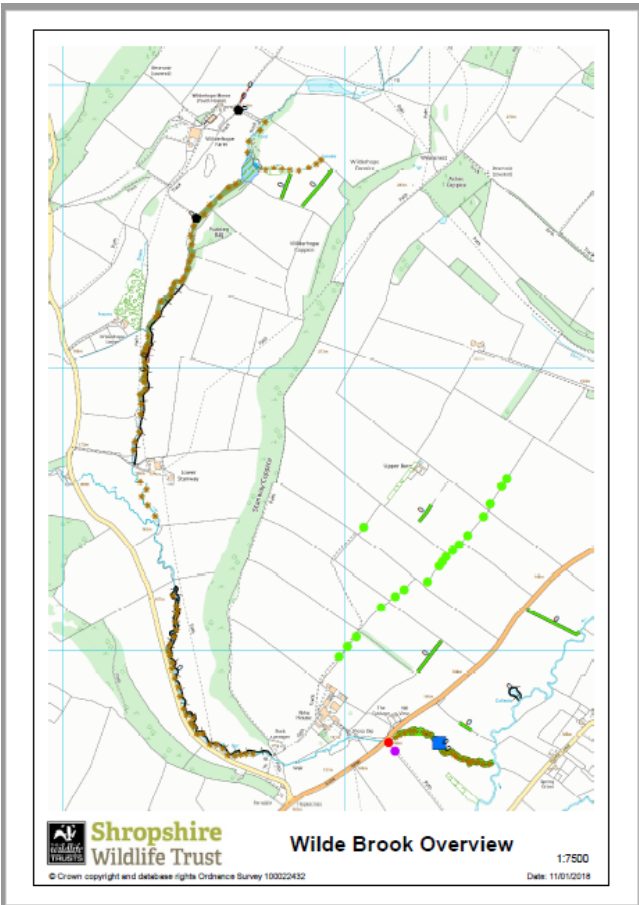


Figure 4. Location of interventions on the Wilde Brook.



Appendix 3. Coalbrookdale NFM Project

Figure 1. Coalbrook Dale catchment and tributaries.

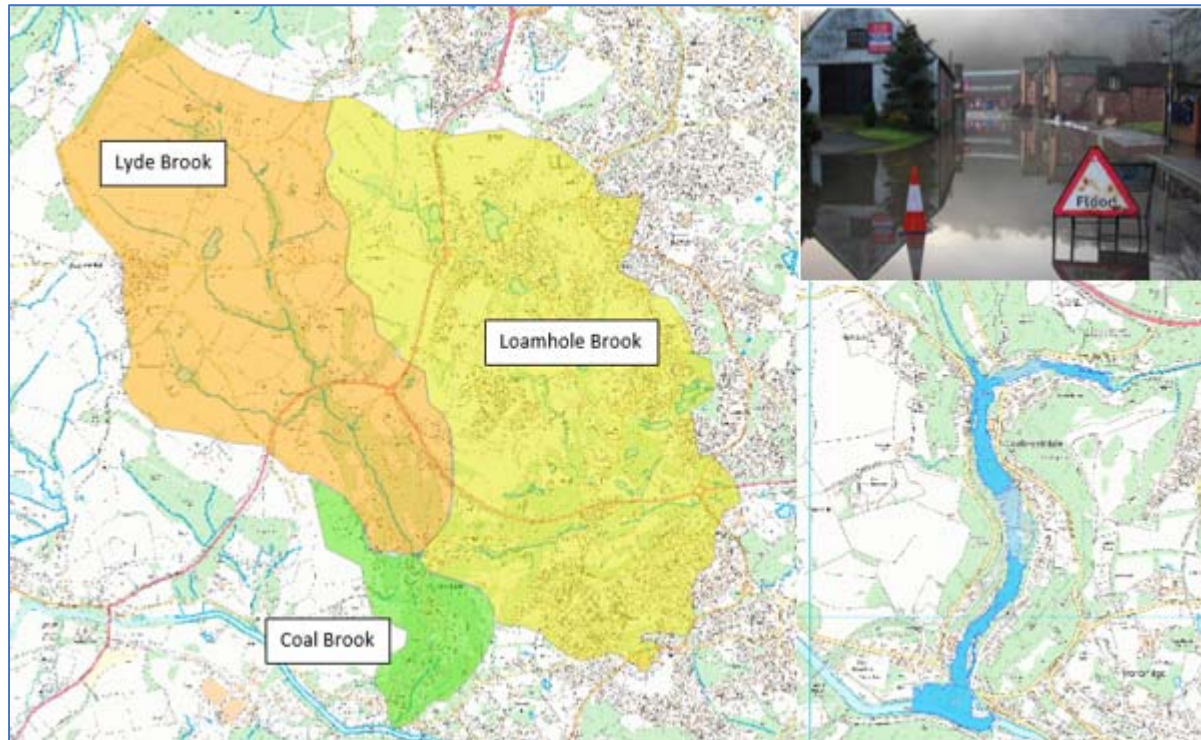


Figure 2. Coalbrookdale flooding





Figure 3. Erosion (in red) and sediment build up (in yellow) around naturally formed woody debris structures.

ES&W RFCC Committee Meeting
Meeting date: 8 January 2019
INFO ONLY – ITEM A

Appendix A: FCRM GiA indicative capital allocation
Appendix B: FCRM GiA indicative revenue allocation
Appendix C: FCRM allocation principles

Paper by: Director of FCRM Allocation and Asset Management

Subject: 2019/20 FCRM Grant in Aid (GiA) allocation for capital and revenue funding

Recommendations:

The RFCC Committees are asked to:

1. Endorse indicative FCRM Grant in Aid capital programme (Appendix A).
2. Endorse indicative FCRM Grant in Aid revenue maintenance programme (Appendix B).
3. Note the allocation principles for the 2019/20 allocation (Appendix C), as shared previously.
4. Advise on management of key risks to the delivery of 300,000 homes target (section 5).

This is a national paper that is provided to every RFCC across the country.

Please note that the English Severn and Wye RFCC have already endorsed the 2019/20 programme at the September Local Choices and the October RFCC meeting.

Headline messages:

- This paper requests the Committees to consent their final draft indicative capital and revenue programmes for 2019/20, and to note their draft indicative allocations for 2020/21 and their contribution to the 300,000 homes better protected target.
- Appendix A contains details of the capital GiA allocation.
- Appendix B contains details of the revenue maintenance GiA allocation.
- All 'local choices' changes made by the Committees during the October Committee round have been incorporated into the programme.
- As we head in to the final 2 years of our programme GiA is fully allocated and targeted on schemes better protecting homes by March 2021 – managing project and programme costs will be important to ensure the programme remains affordable.
- Please refer to the April 2017 National Allocation paper for an overview of the capital and revenue allocation process.

1.0 Background

- 1.1 This paper is the final stage of the allocation of Flood and Coastal Risk Management (FCRM) Grant in Aid (GiA) funding for the 2019/20 financial year.
- 1.1 The 2019/20 English Severn & Wye RFCC FDGiA allocation for Capital expenditure is **£4.6 million** and for Revenue Maintenance is **£4.83 million**.
- 1.2 The detail of the allocation for the English Severn and Wye RFCC can be found in the 'English Severn and Wye 6 year Investment Programme 2019/20' paper which is in the main section of these papers.
- 1.3 In building the indicative allocations, the draft allocation principles and Defra's Partnership Funding Policy have been applied. These principles were approved by the Environment Agency Board on 1 February 2018.
- 1.4 The detail around the annual allocation process is set out in the appendix of the April 2018 National Allocation paper.

2.0 Progress to date – capital and revenue programmes

- 2.1 So far, as at 31 October 2018, we have better protected over 147,500 homes, against our target of 300,000 by end March 2021. So far this financial year, we have better protected nearly 4,800 homes (to end October 2018). We are expecting to deliver a further 56,000 homes by end of 2018/19, raising the total delivered so far to around 200,000 homes.
- 2.2 In terms of asset conditions, our progress as of end of October 2018 was 96.9%. Our target by end March 2020 is for 97% of high consequence assets to be at target condition.

3.0 FCRM Grant in Aid capital allocation

- 3.1 This year's annual refresh of the capital programme is the most important to date, designed to ensure we achieve the 300,000 homes better protected target over the remaining two years of the programme and deliver to budget. All information relating to the capital allocation can be found in Appendix A.
- 3.2 As set out in the allocation process (detailed in the April 2018 paper), the January Committee meeting is when RFCCs consent their programmes.
- 3.3 Following the local choices meeting in September and the RFCC meeting in October, all identified 'local choice' changes have been incorporated.
- 3.4 As noted in the October paper, the capital programme has been prioritised using the following approach:
 - Projects in construction by 1 October 2018 and statutory and legal 'must do's'
 - Projects better protecting homes by 2021; then
 - Projects better protecting homes beyond 2021, prioritised by Partnership Funding score

The programme is then profiled to meet the available capital budget.

- 3.5 The cut-off date for when projects are in construction would have been 31 March 2019. For the 2019/20 allocation we brought this forward to 1 October 2018 to maximise homes better protected in the programme.
- 3.6 Table 1 in Appendix A shows the capital profile for the final 2 years of the 6 year programme, and 2018/19 for reference. It is unchanged from the October paper.
- 3.7 Following the refresh process, the bid for funding for the final 2 years of the programme was approximately £280m (25%) more than the available funding. This is due to increased scheme costs, extra statutory work on reservoirs and for compensatory habitat, and slippage in the profile of the schemes delivering in the 6 year programme window. Due to this, we can no longer begin construction on as many schemes that start in the 6 year programme but complete after it as previously planned and have had to defer some projects to a later date.
- 3.8 Following 'local choices' we can afford a maximum of 351,000 homes better protected. Our updated 'most likely' forecast based on the refreshed programme, taking into account delivery confidence for individual schemes, is 312,000 homes better protected.
- 3.9 Our focus remains on achieving our 300,000 homes target by end of March 2021, and this focus on a shorter term goal means that our programme is in essence now a two year programme. Ideally we would see our programme consist of a blend of projects at different stages of development. With the current pressure on our budget we are funding less projects that will feed our programme beyond March 2021.
- 3.10 The total partnership funding contributions required to achieve the homes better protected target for the 6 year programme is in the range of £630-£680m, of which £150m-£210m has yet to be secured. Achievement of 60,000 of the 351,000 maximum homes depends on contributions yet to be secured. Through the 'local choices' process, RFCCs were asked to consider opportunities to use local levy balances to support the programme.
- 3.11 In line with our settlement condition for the 6 year programme we would also expect 10% efficiency on the £490m allocation for 2019/20. We are currently on track to meet this target.
- 3.12 Table 2 in Appendix A shows the draft indicative allocation for FCRM capital GiA for the final 2 years of the 6 year programme, and 2018/19 for reference.

4.0 FCRM Grant in Aid capital allocation – managing the overprogramme

- 4.1 To help maintain momentum in the final two years of the programme Areas and RFCCs were offered the opportunity to build an overprogramme during the local choices process. This means they will be able to keep more projects going should funding become available from slippage elsewhere and will help ensure we meet our 300,000 homes better protected target.
- 4.2 However, we must recognise that if funding does not become available we will need to slow or stop some projects, and manage expectations. During 'local choices', RFCCs have used this approach to bring some of the deferred projects back into the programme.

- 4.3 RFCCs are asked to consent their programme of schemes, including those schemes which are over their current allocation and form part of their overprogramme, as described above.
- 4.4 RFCCs should note their affordable allocations, and associated anticipated homes to be better protected from the affordable allocation, in Appendix A. The allocations contain a small national over allocation which will need to be managed during 2019/20.
- 4.5 The full consented programme of schemes, including overprogramme, will be published in March 2019 following RFCC consent and EA Board approval of the programme.

5.0 Key risks – capital programme

- 5.1 The following are key risks to achieving the 300,000 homes better protected target. These risks were noted in the October paper and will need ongoing review and management throughout the remainder of the programme. We have already put in place a number of interventions to help manage these risks. RFCC Committees are asked to advise on and continue to support the management of these risks:
- Securing Partnership Funding contributions
 - Slippage and underspend on projects led by other risk management authorities
 - Spike in assurance workload and contract awards
 - Transition from the current Water and Environment Management Framework (WEM) to Next Generation Supplier Arrangements (NGSA)
 - Reduced financial flexibility to mitigate for further slippage
 - Reduced capacity to fund pipeline work which would potentially constrain the future programme
 - Grant-in-Aid funding slippage from 2018/19 which adds further pressure in 2019/20

6.0 FCRM Grant in Aid revenue allocation

- 6.1 All information relating to the revenue allocation can be found in Appendix B.
- 6.2 The final draft indicative revenue allocation for 2019/20, and 2018/19 for reference, can be found in Table 1, Appendix B. Financial year 2019/20 is the final year of Spending Review 2015 (SR15).
- 6.3 Revenue funding split by service level for 2019/20, and 2018/19 for reference, can be found in Table 2, Appendix B.
- 6.4 The SR15 'policy choice' reduction for 2019/20 is £0.9m for Flood Incident Management. At their meeting on 6 November, the Executive Committee indicated that the £2.9m funding for the flood warning system should be added back to Environment Agency budget for 2019/20. The saving of £0.9m will then be made from this as running costs have been reduced through the introduction of a new IT system for flood warning.
- 6.5 It is anticipated we may still have to make further cuts in 2019/20 in support of funding pressures across Defra group. We have not had formal confirmation of this yet. This paper assumes we will receive our baseline funding from the original SR15 settlement.

7.0 FCRM Grant in Aid revenue allocation – 5 year asset maintenance programme

- 7.1 In the March Budget 2016 the government announced an extra £40m per year for asset management. This long term revenue settlement supports our previous commitments to operate a 5 year maintenance programme. Table 3, Appendix B, shows the asset management funding, excluding any cuts, for 2019/20 with 2018/19 for reference.
- 7.2 As part of our Spending Review 2015 (SR15) settlement HM Treasury set a condition that we achieve 10% efficiency in asset management by end of SR15 and that we should reinvest all savings into 'maintaining defences'. We are investing an additional £6m into 'direct' maintenance in 2019/20. Direct maintenance includes Operations Managers teams and Field Services, including the maintenance programme.
- 7.3 We are applying the same agreement as for the 2018/19 allocation, that any RFCC reduction from previous year will be limited to 10% per year. For 2019/20 all RFCCs will receive at least what we indicated their indicative allocation would be as part of the 2018/19 allocation process. Where an RFCC is above its indicative allocation for 2019/20 we have sufficient budget to fund increases up to 4% and to commit to the indicative allocation that was given for 2019/20 in the January 2018 paper. For 2020/21 onwards we have used the indicative allocations from AIMS Planning, assuming flat funding in the next spending review period.
- 7.4 The indicative revenue maintenance allocations for each RFCC, for 2019/20 to 2023/24, are provided in Table 4, Appendix B. These are unchanged from what was shared at the October RFCC Committee round. Table 5 shows the indicative revenue maintenance programme by type of work.

8.0 Recommendations

- 8.1 The RFCC Committees are asked to:
1. Endorse indicative FCRM Grant in Aid capital programme (Appendix A).
 2. Endorse indicative FCRM Grant in Aid revenue maintenance programme (Appendix B).
 3. Note the allocation principles for the 2019/20 allocation (Appendix C), as shared previously.
 4. Advise on management of key risks to the delivery of 300,000 homes target (section 5)

Author: John Russon, Deputy Director, Allocation and National Programme Management

Sponsor: Ken Allison, Director, Allocation and Asset Management

Date: 14 December 2018

Appendix A – FCRM GiA indicative capital allocation

This appendix provides all information required in relation to the indicative capital allocation nationally.

1.0 FCRM GiA capital allocation – funding profile and allocations nationally

Table 1: FCRM GiA capital allocation – funding profile (£m)

	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 5 & 6 Total
Pre-Autumn Budget 2017	470	382	438	820
Change to profile	-40	70 ¹	0	70
Additional funding to accelerate schemes	10	18	8	26
Additional funding for deprived communities	10	20	10	30
Additional funding for Carlisle	2	11.2	10	21.2
Revised profile	452	501.2	466	967.2

1. Includes £30m moved from 2017/18 to 2019/20

Table 2: Indicative FCRM GiA capital allocation (£m)

Programme	Amounts (£m)			
	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 5&6 Total
National once and FCRM Portfolio (including Fleet and IT invest to save)	27.0 ¹	29.3	24.8	54.1
Programme to meet legal obligations associated with flood risk management works ²	8.1	3.9	4.4	8.3
Small scale capital projects ³	15.9	11.4	10.5	21.9
Capital salaries for staff developing and delivering schemes	20.0	21.0	21.0	42.0
Recondition schemes (<£250k) for assets below target condition	10.0	6.5	5.0	11.5
New and replacement schemes	396.8	443.5 ⁴	402.2 ⁴	845.7 ⁴
TOTAL	477.8¹	515.64⁴	467.94⁴	983.6⁴

1. Over-allocated by £5.4m. FCRM Board agreed an increase in-year to fund essential IT development work. To be managed through over-programme in 2018/19
2. Includes Water Framework Directive, Sites of Special Scientific Interest, Eel Regulations
3. Small scale capital projects for coastal monitoring, flood risk mapping, repairs to Environment Agency owned bridges, flood forecasting, flood warning, carbon reduction, hydrometry and telemetry assets, orphan reservoirs and strategies. Includes NFM programme.
4. Limited over-allocation. To be managed through over-programme. Includes £1.5m additional support to Northumbria RFCC to moderate significant reduction in indicative allocation, Thames Estuary critical works and statutory habitat compensation at Skeffling, River Exe and Wareham. Includes additional funding for Carlisle £25m across final 3 years of the programme.

Appendix A: Capital allocation – schemes only (CM/DEF/PLP) – 2019/20

RFCC	Current published 2018/19 programme allocation approved by EA Board		Current published programme indicative allocation for 2019/2020 ¹		Refresh bid for 2019/20 ²		Final allocation for 2019/20 including national over allocation		Difference refresh vs allocation for 2019/20		Refresh programme forecast 2019/20	With additional over programme post local choices		With over programme post local choices
	£m	Max homes	£m	Max homes	£m	Max homes	£m	Max homes	£m	Max homes	'Most likely homes'	£m	Max homes	'Most likely homes'
Anglian Central	5.5	644	1.4	300	14.2	522	13.1	394	11.7	94	290	13.7	66	44
Anglian Eastern	17.7	1,080	22.7	3,899	45.1	4,168	34.7	4,620	12.0	721	3,321	38.2	4,872	3,592
Anglian Northern	47.1	3,617	43.0	16,841	58.5	17,117	57.6	16,871	14.6	30	14,299	59.5	17,117	14,432
English Severn & Wye	4.9	1,095	1.3	292	4.0	800	3.5	400	0.5	108	300	4.0	800	500
North West	40.4	6,066	35.5	8,559	51.6	5,771	56.9	5,624	21.4	-5,545	2,422	56.9	5,624	2,422
Northumbria	14.3	819	5.3	658	8.5	985	10.1	1,167	4.8	509	858	9.9	1,204	911
South West	26.9	5,194	8.9	2,374	28.5	2,525	22.5	2,088	13.6	-286	1,697	24	2,072	1,706
Southern	43.5	12,593	32.9	11,879	46.4	13,013	42.1	12,914	9.2	1,035	9,823	43	11,826	9,193
Thames	51.6	5,180	34.4	4,730	71.0	6,368	48.7	6,267	14.3	1,537	4,627	52.5	6,264	4,670
Trent	26.0	2,967	50.4	5,804	52.0	2,669	50.0	2,481	-0.4	-3,323	1,566	52.3	2,915	2,043
Wessex	11.9	2,332	2.6	1,142	13.2	1,212	9.1	1,125	6.5	-17	841	10.1	1,233	916
Yorkshire	102.1	14,653	107.6	20,260	106.2	23,830	95.3	23,572	-12.3	3,312	19,831	95.3	24,751	20,570
Total	392.0	56,240	345.9	76,738	499.1	79,306	443.5	78,092	85.8	-1,256	60,287	458.4	78,351	60,762

1. Indicative allocation for 2019/20 given as part of the 2018/19 allocation process

2. Bids from Areas in July 2018 as part of the refresh for 2019/20 (excluding new unfunded projects)

3. Changes include additional funding of £25m for Carlisle schemes and inclusion of Tidal Riverbank

Indicative capital allocation – schemes only (CM/DEF/PLP) – 2019/20 and 2020/21

RFCC	Current published programme indicative allocation for 2019/20 and 2020/21 ¹		Refresh bid for 2019/20 and 2020/21 ²		Final allocation for 2019/20 and 2020/21		Difference refresh indicative allocation for 2019/20 and 2020/21		Refresh programme forecast 2019/20 and 2020/21
	£m	Max homes	£m	Max homes	£m	Max homes	£m	Max homes	'Most likely homes'
Anglian Central	2.9	1,507	34.2	2,263	31.8	1,951	28.9	444	1,401
Anglian Eastern	39.1	7,074	85.1	7,219	51.6	7,478	12.5	404	5,332
Anglian Northern	67.4	21,132	80.0	22,805	76.9	22,004	9.5	872	18,385
English Severn and Wye	3.8	950	7.2	1,900	4.9	1,300	1.1	450	950
North West	80.8	12,136	140.7	15,304	130.0	11,818	49.2	-318	8,739
Northumbria	19.2	2,387	26.4	2,460	15.6	2,285	-3.6	-102	1,018
South West	30.0	4,755	57.4	4,362	43.1	26,854	13.1	-1,617	2,363
Southern	99.1	27,806	127.7	28,009	104.1	3,138	5.0	-952	20,249
Thames	84.2	15,416	139.0	13,147	78.6	12,127	-5.6	-3,289	9,137
Trent	86.0	11,388	107.2	15,261	87.2	12,799	1.2	1,411	10,211
Wessex	19.6	2,815	34.8	2,904	22.2	2,411	2.6	-404	1,798
Yorkshire	194.5	40,078	223.8	42,430	199.7	41,777	5.2	1,699	34,844
Total	726.5	147,453	1,063.7	158,345	845.7	148,618	119.1	1,165	114,432

1. Indicative allocation for 2019/20 given as part of the 2018/19 allocation process

2. Bids from Areas in July 2018 as part of the refresh for 2019/20 (excluding new unfunded projects)

3. Changes include additional funding of £25m for Carlisle schemes and inclusion of Tidal Riverbank

Appendix B – FCRM GiA indicative revenue allocation

This appendix provides all information required in relation to the indicative revenue allocation

1.0 FCRM GiA revenue allocation – funding profile

Table 1: FCRM GiA revenue funding profile (£m)

	2018/19	2019/20
Opening position	211.9	213.5
SR15 policy choice reductions	-1.8	-0.9
'Real terms' protection for asset management	3.4	3.8
Budget 2016 - additional for asset management	40.0	40.0
Defra group budget changes for 2018/19	-7.2	-
Defra group budget changes for 2019/20	-	TBC
Total	246.4	256.4

2.0 FCRM GiA revenue allocation – funding by service level

Table 2: FCRM GiA revenue funding by service level (£m)

Service Level	2018/19 pre-cut	2018/19 post-cut	2019/20
Asset Management	204.9	199.9	208.7
Flood Incident Management	24.7	23.8	23.8 ¹
Partnership and Strategic Overview	8.6	8.3	8.6
Biodiversity	4.7	4.6	4.7
Retained Services	10.6	9.7	10.6
Total	253.5	246.4	256.4

¹ Does not include the potential return of the £2.9m funding for flood warning system.

3.0 FCRM GiA revenue asset management funding profile

Table 3: FCRM GiA revenue asset management funding profile (£m)

	2018/19	2019/20
SR15 baseline ¹	180	184
Budget 2016	40	40
Total asset management revenue	220	224

1. Annual increase is due to 'real terms' protection for asset management and reinvestment of asset management efficiency savings.

4.0 FCRM GiA revenue allocation – revenue maintenance indicative allocations

Table 4: Revenue maintenance indicative allocations for 2019/20 to 2023/24

RFCC	2018/19 Allocation, £k	2018/19 Allocation– In Year Cuts £k	Feb 2018 Indicative Allocation for 2019/20 £k	Sept 2018 Indicative Allocation for 2019/20 £k	Change to Feb 2018 Indicative 2019/20 £k	Indicative Allocation for 2020/21 £k	Indicative Allocation 2021/22 £k	Indicative Allocation 2022/23, £k	Indicative Allocation 2023/24 £k
Anglian Central	4,270	4,270	4,307	4,770 ²	463	4,168	4,168	4,168	4,168
Anglian Eastern	8,430	7,967	8,150	8,698 ²	548	9,596	9,596	9,596	9,596
Anglian Northern	9,636	9,636	9,393	10,287 ²	894	10,947	10,947	10,947	10,947
North West	10,826	10,633	9,760	10,645 ^{1,2}	885	10,161	10,161	10,161	10,161
Northumbria	2,391	2,258	2,152	2,475 ²	323	2,608	2,608	2,608	2,608
Severn & Wye	4,496	4,443	4,833	4,833³	0	4,410	4,410	4,410	4,410
South West	4,970	4,970	5,070	5,119	49	5,267	5,267	5,267	5,267
Southern	11,989	11,324	11,223	11,276 ¹	53	11,371	11,371	11,371	11,371
Thames	16,883	16,374	16,315	19,399 ^{1,4}	3,084	18,138	18,138	18,138	18,138
Trent	11,465	11,339	12,335	12,335 ³	0	12,838	12,838	12,838	12,838
Wessex	7,252	7,252	7,729	7,729 ³	0	7,799	7,799	7,799	7,799
Yorkshire	11,092	11,092	12,434	12,434 ³	0	12,697	12,697	12,697	12,697
Total	103,700	101,558	103,701	110,000	6,299	110,000	110,000	110,000	110,000

1. Reduction capped at 10% for 2019/20
2. 2019/20 allocation pegged to commitment in February 2018 RFCC paper
3. Increase capped at 4%
4. Thames – 2019/20 Allocation includes an increase for Thames Tidal Defences

5.0 FCRM GiA revenue allocation – revenue maintenance programme type of work

Table 5. FCRM GiA – indicative revenue maintenance programme type of work

			Type of Work – Indicative Allocation (£k)										Funding Source
RFCC	Year	System Risk	Dredging	Maintenance and Conveyance	Maintain Raised Defences	Maintain Structures	MEICA	Operation	Survey / Inspections	Statutory Inspections	Raised Defence Repairs	Unscheduled	Total (FDGiA)
Severn and Wye	19/20	High	135	1,058	712	433	243	22	35	2	133	937	4,833
		Medium	-	217	545	35	84	1	-	-	2		
		Low	-	81	41	30	73	14	-	-	-		
	20/21		123	1,237	1,185	454	365	34	32	2	123	855	4,410
	21/22												4,410
	22/23												4,410
	23/24												4,410

Appendix C – FCRM allocation principles

Protect people and homes

- Deliver the £2.5bn six year capital programme
- Increased protection for at least 300,000 homes between 2015/16 and 2020/21
- Protect maintenance funding in real terms through this Parliament and re-invest 10% efficiency savings by 2019/20
- Take a risk-based approach to securing the condition of existing assets including channel conveyance
- Maintain our ability to warn people and respond to incidents so as to save lives and property
- Support the provision of property scale resistance and resilience measures

Working in partnership

- Provide positive contributions to the recently announced Government-led reviews into flood risk management
- Achieve third party, including private, investment in line with the Defra partnership funding and contributions policy
- Support community-based solutions that are innovative, cost-effective and affordable
- Achieve balanced programmes in collaboration with RFCCs
- Promoting an integrating approach to managing flood risk working with other Risk Management Authorities
- We will take a catchment based approach
- Improve our understanding with partners of all flood and coastal erosion risk data and support the government's 'Open Data' commitment making our data and information easily accessible to all who want it

Way we work

- Maintain skills and a pipeline of studies for medium and long-term investment needs
- Maximise efficiency savings and value for money
- Continue to promote schemes that meet statutory environmental requirements
- Promote sustainable development that reduces flood risk
- Provide appropriate funding toward the essential support services that enable delivery of flood and coastal risk outcomes
- We will work collaboratively across the Environment Agency and with external partners to realise multiple benefits



FCERM update paper

December 2018

Welcome to the Flood and Coastal Erosion Risk Management (FCERM) Stakeholder Forum update paper, covering the latest news and developments from the Environment Agency and Defra.

In this paper:

Planning for the future

- [FCERM Strategy](#)
- [Long-Term Investment Scenarios](#)
- [Adapting to a changing climate](#)
- [Strategic Flood Planning Framework](#)
- [Modernising asset management milestone](#)
- [National Flood Risk Assessment 2](#)

Working with others

- [Rationalising the main river network](#)
- [Online reverse auction tool](#)
- [Climate Just #2](#)
- [Drainage and Wastewater Management Plans](#)
- [Working collaboratively with our Flood risk management suppliers](#)
- [Women in FCERM](#)

- [Shoreline Management Plan Refresh](#)
- [Asset data improvements](#)
- [Flood and Coast Conference 2019](#)

Incident management and resilience

- [Multi-Agency Flood Plan Review](#)
- [Flood Action Campaign](#)
- [Warning people about flood and coastal risk](#)
- [Surface Water data now Open Data](#)

Legislation

- [Surface Water Management Action Plan](#)
- [Environmental Permitting Regulations](#)
- [Advice to Risk Management Authorities](#)

Useful links

- [Environment Agency Organogram](#)

But first...

New Environment Agency FCRM Director

We are pleased to announce that Julie Foley becomes Director of Flood Risk Strategy and National Adaptation in January 2019. Julie has been Area Director for the Environment Agency's Kent and South London Area since October 2016, where she leads over 500 staff. The Area's operational responsibilities include the Thames Barrier Tidal Defences and the Medway navigations.

Before joining Kent, South London & East Sussex Area, Julie was Area Director for the Environment Agency's Cambridgeshire & Bedfordshire Area which encompasses the River Great Ouse Catchment.

Julie has worked at the Environment Agency for twelve years. Her background prior to that was in Defra where she worked on a range of strategic policy issues including climate change, flooding and water management. Julie has also held roles working for public policy think tanks.

Julie is educated to Master's Degree level in environmental technology and management and is one of the Environment Agency's diversity leads for race and ethnicity.



Planning for the future



Flood and Coastal Erosion Risk Management Strategy

The government committed in its 25 Year Environment Plan that the Environment Agency will revise the national flood and coastal erosion risk management (FCERM) strategy in 2019. The Environment Agency is doing that through collaboration with the very people who will be affected by it or play a part in its delivery, be that flood risk or coastal change.

In 2018 we have been working with a wide range of stakeholders to develop the strategy. We widened our initial engagement and set up five working groups – four focusing on core questions identified at the scoping phase and a fifth group focusing on the ambition for FCERM in 2050.

We received a wealth of information from the working groups and from others, so thank you to all those who have contributed. We are now using this information to prepare for the formal public consultation.

We plan to launch the consultation in January 2019 for a period of eight weeks. We will notify you when the consultation goes live.

Contact: FCERMStrategy@environment-agency.gov.uk

Long-Term Investment Scenarios – Additional Analysis

The Long-Term Investment Scenarios (LTIS) published in 2014 is an economic assessment of future flood and coastal erosion risk management (FCERM) from now until 2065 in England. It identifies an approach to investing in FCERM over the long-term that would achieve the greatest reduction in flood damage for any given amount invested. We are now completing an LTIS 'additional analysis' project which has built on and enhanced the study published in 2014. We plan to publish this in early 2019 as part of the evidence pack supporting the FCERM Strategy consultation. This new document will bring together our best understanding of long-term investment scenarios for FCERM. Together, the 2014 study and the new analysis expand the scope and understanding of future investment choices for FCERM.

The project has built on the work of the National Flood Resilience Review (NFRR) and considers issues raised by the National Infrastructure Commission's (NIC) work on a [National Infrastructure Assessment](#) of infrastructure needs over the next 10-30 years, published in July 2018. It has been developed collaboratively with many FCERM partners and undergone a comprehensive review process. LTIS is evidence for government and others considering future investment, policy and funding choices, and is already being used to inform investment plans and to support the National FCERM Strategy.

Contact: mike.steel@environment-agency.gov.uk

Strategic Overview Team's Strategic Flood Planning Framework

The Flood Risk Regulations 2009 (FRR) set out a statutory process for flood risk planning over a 6 year cycle. The FRR require the Environment Agency and lead local flood authorities (LLFAs) to:

- assess risk from flooding for human health, the economy and environment including cultural heritage
- decide where we consider risk to be significant, and identify these areas as flood risk areas (FRAs)

- prepare maps that show the flood hazard and flood risk in FRAs
- prepare Flood Risk Management Plans (FRMPs) that set objectives and measures to reduce the risk in FRAs

We worked with LLFAs in the first cycle to publish the first FRMPs in 2016. These drew together objectives and measures already established in Catchment Flood Management Plans, Shoreline Management Plans and elsewhere, and included LLFAs' objectives and measures for local sources of flood risk in identified FRAs.

In the second cycle, we are aiming to improve our planning so that our updated FRMPs (due December 2021) will be the outcome of a more strategic planning process. We will work with LLFAs to produce second cycle FRMPs that focus on managing risk in all the identified FRAs.

How will we achieve this?

We are working on three linked work packages to:

- develop a common vision and framework for strategic, place-based flood risk management planning
- agree a process for preparing second cycle FRMPs, drawing on lessons learned from the first cycle
- implement new digital tools to present FRMPs in a flexible and accessible format.

Contact: lynsay.mclean@environment-agency.gov.uk

Environment Agency modernising asset management milestone

The Environment Agency manages around £26 billion of flood and coastal risk management assets. We also have an oversight role on a further £17 billion of assets managed by others. Modernising Asset Management (AM) is one of our top priorities in developing our vision to be at the forefront of international best practice and to be recognised as a leading AM organisation.

Gaining ISO55000 certification in 2018/19 is an important step towards achieving this vision and delivering our AM Strategy 2017-22. ISO certification will provide independent assurance of our competence as a modern AM organisation and help justify future investment needs. We also committed to achieving ISO certification as part of our response to the HM Treasury sponsored 'Worsfold' Review of our performance.

We successfully completed stage 1 in June. In stage 2 we will demonstrate our compliance with our AM system and the ISO55001 standard.

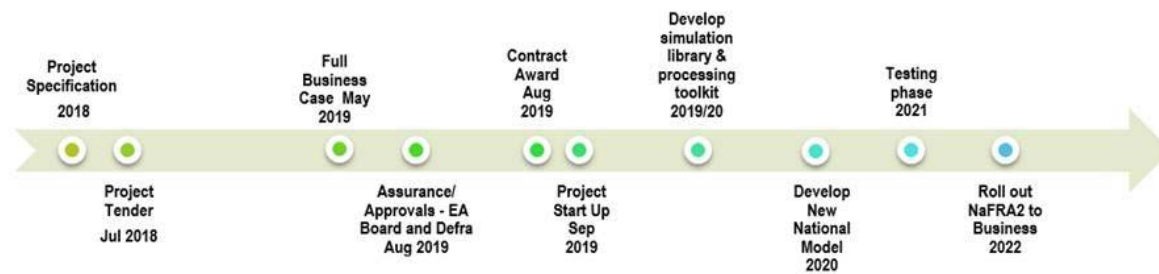
Contact: richard.jones@environment-agency.gov.uk

National Flood Risk Assessment 2: Revolution not evolution

The original NaFRA was first produced between 2002 and 2004 to illustrate the residual risk of flooding at a national scale, and the likely cost of damages to properties as a result. Over the years it has grown and been improved.

Our new assessment, NaFRA2, is about providing a holistic and consistent picture of flood risk across England to make better planning, investment and incident response decisions. It will be a step change in our approach, effective at all scales from local to national, and giving us a much better understanding of risk arising from all sources of flooding. We will be building it from local models and creating a library of flooding scenarios to answer a broad range of questions from 'What is the depth of flooding in this location?' to 'what is the impact of this flood defence asset?' It will deliver or support many of the recommendations of the National Flood Resilience Review, including resilient infrastructure, improved response, recovery and information, and work towards more integrated weather-hydrology-flood modelling.

NaFRA2 will revolutionise the way we assess flood risk. We started the year-long Official Journal of the European Union (OJEU) procurement process in July.



If you are interested in receiving updates about NAFRA2 and wish to be added to our NaFRA2 distribution list, please get in touch.

Contact: hannah.mitchell@environment-agency.gov.uk or celia.Jonquet-Burns@environment-agency.gov.uk

Working with others

Rationalising the main river network – de-maining pilots

We have completed the consultation on the pilots in South Forty Foot (Lincolnshire), Stour Marshes (Kent), Suffolk (East Anglia) and Isle of Axholme (North Lincolnshire). The consultation response documents have now all been published on GOV.UK here - <https://www.gov.uk/government/consultations/norfolk-de-maining-proposals-rationalising-the-main-river-network>.

We have taken the decision to de-main South Forty Foot, and assuming there are no appeals, de-maining will take place in late November and the watercourses will be removed from the statutory main river map. We plan to consult on the 3 watercourses remaining in the pilot in Norfolk during November and December.

We are currently finalising formal agreements with partners in the Isle of Axholme, Stour Marshes and Suffolk, prior to taking the formal decision to de-main.

We will produce an interim evaluation report setting on lessons learned so far, successes and challenges. This will fulfil our commitment to the Minister and will inform decisions on next steps. The final evaluation report by the end of March 2019.

Contact: lucy.roberts@environment-agency.gov.uk

Future Funding - 'NaturEtrade NFM' online reverse auction tool

We have developed and trialled a new 'reverse auction' online tool called NaturEtrade NFM, to pay for Natural Flood Management (NFM) measures. The innovative tool allows farmers and land managers to bid for funding to implement NFM measures on their land and can be found here: <https://nfmea.sylva.org.uk/>

Somerset Rivers Authority provided £30,000 funding which was awarded to the most cost-effective (lowest price per m²) bids. The auction ran for three weeks over July and August 2018 in the Tone and Parrett catchments in Somerset, and resulted in 64 bids from 15 separate farms. These bids totalled over £37,000 and the successful bids translate into approximately 300ha of NFM interventions funded, that will slow and store surface water runoff, reducing flood risk, filtering pollution and increasing habitats.

The trial was successful: compared to Countryside Stewardship (CS) payment rates, the most popular measure (post maize management) was bid at around 66% of the CS payment rate, which suggests it delivers value for money. We hope that this would increase with a more competitive auction.

A further benefit investigated was whether the tool could encourage greater – than currently under CS - uptake of NFM measures by providing a less bureaucratic approach. Post-auction survey feedback showed that 100% of farmers agreed that they would be likely to participate in such an auction again; a positive indicator of potential future uptake levels.

We plan to run further trials to test a range of measures and environmental outcomes. If you would like us to use the tool on your project, please let us know.

Contact: claire.johnstone@environment-agency.gov.uk or emma.claydon@environment-agency.gov.uk

Climate Just #2

The Climate Just project team are pleased to announce that a new version of the Climate Just website is now live at www.climatejust.org.uk. This is the first time that information on flood risk and social vulnerability have been combined together. The materials are the product of a large set of contributors



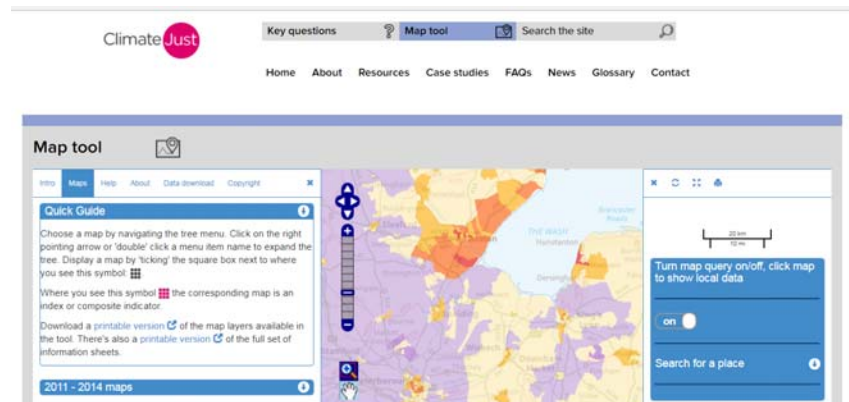
Figure 1: Sam, who was successful in a bid for maize management funding

including a research team University of Manchester, with support from the Joseph Rowntree Foundation, the Environment Agency, JBA Consulting, Centre for Sustainable Energy and Climate UK.

Climate Just is a freely available online resource that enables public service providers to identify:

- who is most socially vulnerable to climate change and why,
- where socially vulnerable neighbourhoods are located, and
- what can be done.

The resource consists of a map tool which helps visualise which places are most disadvantaged, together with extensive written materials that explain the maps and provide evidence on the links between climate change, justice and vulnerability in the UK.



The Environment Agency was initially involved in this project to evidence the work around adapting to climate change. Since then we have continued to support it by providing up to date data as well as user engagement and training.

The tool provides an innovative and interactive way at looking at flood risk from a social as well as environmental perspective whilst also:

- providing evidence on why we should continue to work on flood risk
- identifying who is vulnerable to climate change and fuel poverty
- highlighting neighbourhoods where climate disadvantage is highest
- explaining the factors involved and help you decide what actions to take

Contact: rachel.walters@environment-agency.gov.uk

Working with water and sewerage companies – Drainage and Wastewater Management Plans

Improving drainage planning has been a theme since the 2007 floods. With climate change and more growth we can expect pollution and flooding to increase, unless it is managed more strategically. The Government's [25 Year Environment Plan](#) and Defra's [Surface Water Management Action Plan](#) have recently called for greater transparency and engagement on drainage planning.

Water UK's 21st Century Drainage Programme has developed a framework for the long term planning of drainage and wastewater services: Drainage and Wastewater Management Plans (DWMPs). The framework was commissioned by Water UK in collaboration with partners including, Defra, Ofwat, Environment Agency, Consumer Council for Water, ADEPT and Blueprint for Water.

Water and wastewater companies in England and Wales will produce DWMPs using the framework by the end of 2022, to support their business plans for Ofwat's Price Review in 2024. DWMPs will:

- provide a consistent basis for drainage and wastewater planning
- help water and sewerage companies manage their assets over the long term and ensure that they are resilient to climate change
- improve engagement with other Risk Management Authorities.

The framework is available here: <https://www.water.org.uk/policy/improving-resilience/21st-century-drainage/long-term-planning>.

Contact: Rob Wesley (Water UK lead) rwesley@water.org.uk, John Spence (Water UK programme manager) jjspace@aol.com or Jonathan Hunter (Environment Agency lead) jonathan.hunter@environment-agency.gov.uk

Working with our suppliers to deliver flood risk management

Next Generation Supplier Arrangements (NGSA) is a project that will bring in new ways of working through the Collaborative Delivery Framework (CDF) and a range of supporting frameworks. It will replace the current Water and Environment Management (WEM) framework in 2019 to deliver the majority of our FCERM programme, from around £250K to £50M in scheme value. The new ways of working will bring Environment Agency staff and our suppliers together in collaborative teams to plan and deliver our capital programme. These teams are open to other Risk Management Authorities (RMAs) to work with, or to access the skills and capacity needed to help deliver their programme.

We are currently in the short list stage of the procurement process for selecting our new suppliers. The initial tender assessments of suppliers was carried out by over 70 members of our staff across the business, with a number of RMAs assessing the tenders for their Collaborative Delivery Teams to ensure local issues were assessed. The shortlisted suppliers are now preparing for the final tender stage. The short list is commercially sensitive as the procurement process has not been completed, but we will be able to share the names of the successful suppliers in March 2019.

We are also setting up supporting framework arrangements for specialist services which include client support, marine and coastal and mapping and modelling. We will keep you updated on the progress of this specialist framework.

Contact: NGSA2019@environment-agency.gov.uk

Women in FCERM

Women in FCERM is a networking group of professionals set up to support and connect women working across the flood and coastal erosion risk management (FCERM) sector. The network is made up of Environment Agency staff and external members and is focussed on women and those who line-manage them – but membership is open to all.

The group set itself three priorities for year one:

- organise a series of networking events in four hubs across England
- provide access to cross-company mentoring
- agree the scope and how to resource this

The free networking events are to help people meet others in a similar situation, share their experiences, talk about the issues that are important to them, network and form supportive connections. Events in London, Manchester, Peterborough and Bristol have been well attended and received great feedback. You can join and find out more about what they do through their [LinkedIn group](#) or follow them on Twitter ([@WomenInFCERM](#)). If you'd like to get involved or have feedback on their ideas then you can also contact Clare Dinnis.

Contact: clare.dinnis@environment-agency.gov.uk

Shoreline Management Plan (SMP) Refresh

The Coastal Group network (the seven regional partnerships led by coastal local authorities and the Environment Agency) will be reviewing the 20 English/cross-border SMPs from 2019-2021 to update the plans to reflect the most recent developments in science, monitoring, policy and ways of working.

The Plans were developed between 2006 and 2012 to set out the direction of coastal management for the whole coast into the 22nd century, and are an international model for long-term evidence-based coastal management planning.

We want to invest to ensure they are up-to-date 'living' documents that are more easily accessible to managers, planners and the public at the coast, so we will also be looking at better ways of displaying and communicating SMP information online and elsewhere.

Contact: nick.hardiman@environment-agency.gov.uk

Coastal asset data improvements

Coastal Groups have recognised the need to improve the quality of coastal asset data. Coastal Groups are looking at making this a priority for the national network of regional Coastal Monitoring Programmes in its next six-year work phase from 2021. In preparation we are trialling an online GIS asset data capture tool with Coastal Partnership East in Norfolk and Suffolk and also in the South West area. Improving coastal asset information will enable coastal groups to take better decisions on investment in coastal assets and improve our collective understanding of coastal flood and erosion risk.

Contact: andy.shore@environment-agency.gov.uk

Get involved in Flood and Coast Conference 2019

The 2019 Flood and Coast Conference will take place from 18-20 June 2019 at the Telford International Centre. The event will draw together key partners from the flood and coastal risk management community, including local authorities, internal drainage boards, contractors and suppliers, community groups and academia.

Building on our previous success, we are currently working on an exciting programme for 2019, you can find out more on the website: <http://www.floodandcoast.com/>.

Contact: paul.wyse@environment-agency.gov.uk

Incident Management and resilience

Multi-Agency Flood Plan Review

Last year, Defra's Secretary of State, Michael Gove commissioned an independent review on Multi Agency Flood Plans (MAFPs), overseen by Major General (retired) Tim Cross. The review was published in May 2018, and ministers made a commitment to publish a response by the end of the calendar year. The full document can be found here: <https://www.gov.uk/government/publications/multi-agency-flood-plan-mafp-review>

In the review, Tim Cross made 12 recommendations addressing aspects of flood planning he'd identified for improvement. This included areas such as assurance, training and exercising, funding, legislation, technology, and the roles of various partners in the multi-agency approach.

Through a series of workshops and wider conversations with stakeholders across government, Defra has engaged with government departments to pull together a full picture of the main considerations around each recommendation.

Following a request for ministerial steer, the next steps are to draft the government response, and commission a write round to get cabinet committee clearance.

Revised guidance on writing MAFPs is also currently being developed. Local Resilience Forum representatives from across the country were invited to two workshops in October, where views and ideas were gathered on possible areas for improvement, including format, order, and content.

Alongside this, a Civil Contingencies Secretariat standard on flood response is being created which will form part of a set of resilience standards to clearly set out expectations and benchmarks for good practice.

Defra and EA are working closely together on these documents, the aim is to release them in conjunction with the government response to the MAFP review.

Contact: farah.tabbakh@defra.gsi.gov.uk or helen.wilkinson1@environment-agency.gov.uk

Flood Action Campaign


We run the Flood Action Campaign each year to raise awareness of flood risk. The campaign was launched on 29 November and will be deployed again when rain/flooding are on the news agenda - as this is when people are most receptive to receiving messages about flooding and flood risk, and therefore more likely to take action. This year's campaign targeted the 18-34 age group. Research shows that they are least likely to perceive flood risk to their area, know how to protect their properties or where to go for information.




We asked people to look at and keep our flood plan – Prepare Act Survive – so that they know what to do in a flood. The campaign was predominantly be delivered through social media and traditional media. We asked partners, vloggers, and the public on social media to tell us #justonething that they would save from a flood. The campaign page has all the information about how to take part -

<https://floodsdestroy.campaign.gov.uk/>

Contact: suzanne.hamblin-boone@environment-agency.gov.uk

Flood warnings - know what to do?



	FLOOD ALERT	PREPARE	<ul style="list-style-type: none">• Prepare a bag that includes medicines and insurance documents• Visit flood-warning-information.service.gov.uk
	FLOOD WARNING	ACT	<ul style="list-style-type: none">• Turn off gas, water and electricity• Move things upstairs or to safety• Move family, pets and car to safety
	SEVERE FLOOD WARNING	SURVIVE	<ul style="list-style-type: none">• Call 999 if in immediate danger• Follow advice from emergency services• Keep yourself and your family safe

gov.uk/check-flood-risk

FLOODS DESTROY
#PREPAREACTSURVIVE

Floodline on 0345 988 1188 #floodaware

Warning people about flood and coastal risk

Floodline provides a 24-hour telephone helpline for the public to access information about flooding in their area. It also provides them with practical advice about what to do before, during and after flooding. The current contract will expire on 31 March 2019 with the new service bringing some exciting innovative improvements to enhance the customer's journey.

Since 2010 the Environment Agency and Natural Resources Wales (NRW) has worked with telephone providers to access and automatically register landline phone numbers onto our flood warning system. To reflect the move towards mobile telephones, we started working with EE and O2 and in October 2018, we started registering Three mobiles. Three customers will now receive relevant flood warning and severe flood warning messages for their billing address. We are working with Vodafone to extend the service over the next few months.

Contact: manoch.kerman@environment-agency.gov.uk

Risk of Flooding from Surface Water data now Open Data

The Risk of Flooding from Surface Water data is now Open Data. Meaning that anyone can download, use, and manipulate the dataset free of charge and without restrictions under the Open Government License (OGL), including for commercial use.

The datasets can be found by searching for Risk of Flooding from Surface Water on <http://data.gov.uk> and include:

- Risk of Flooding from Surface Water Suitability
- Risk of Flooding from Surface Water Depth (3.3, 1 and 0.1 percent annual chance)
- Risk of Flooding from Surface Water Speed (3.3, 1 and 0.1 percent annual chance)
- Risk of Flooding from Surface Water Hazard (3.3, 1 and 0.1 percent annual chance)
- Risk of Flooding from Surface Water Direction (2m) (3.3, 1 and 0.1 percent annual chance)
- Risk of Flooding from Surface Water Direction (25m) (3.3, 1 and 0.1 percent annual chance)

Contact: sally.tulley@environment-agency.gov.uk

Legislation

Surface Water Management Action Plan

Good surface water management is about making sure that rain can drain effectively through our environment, using natural and man-made drainage networks. Surface water flooding happens when intense rainfall overwhelms local drainage capacities. These intense rainfall events are usually associated with thunderstorms, tend to be local and can develop very quickly.

It is a significant national risk. 3.2 million properties in England are estimated to be at some risk from surface water flooding, more than are at flood risk from rivers and the sea. It is also a growing challenge, with climate change bringing more frequent heavy storms, new developments also increasing the need for drainage and an ageing sewerage infrastructure which is costly to maintain and upgrade.

The Surface Water Management Action Plan was published on 17 July 2018 includes 22 actions to strengthen surface water management including actions for Government, the Environment Agency, ADEPT, Water UK, Ofwat and the Met Office. The themes are:

- improving risk assessment and communication;
- making sure infrastructure is resilient;
- clarifying responsibilities for surface water management;
- joining up planning for surface water management; and
- building local authority capacity.

You can find it here: <https://www.gov.uk/government/publications/surface-water-management-action-plan>.

Contact: alice.baverstock@DEFRA.GSI.GOV.UK

Environmental Permitting Regulations

In April the Environment Agency introduced new permit charges for people to work in, over or near Main Rivers and sea defences. These changes mean our regulatory role is no longer subsidised through public money, so that government funding is invested directly on reducing flood risk and enhancing the environment.

A project is underway which plans to review and extend Standard Rules permits. This lowest cost permit allows customers to follow an agreed set of conditions in order to carry out an activity with minimal risk. Our next step is to begin a public consultation, this is scheduled to go live later in November.

We've also been exploring how catchment scale permits can make it easier for land owners to obtain permission for activities on reaches of river. Catchment permitting enables multiple landowners to apply for a number of flood risk activities within a single permit.

Contact: joe.march@environment-agency.gov.uk

Environment Agency Advice to Risk Management Authorities on business case preparation

The Environment Agency has revised the web page "Flood and coastal defence: develop a project business case". We have published a new business case template for low value schemes. The template contains advice and explains the level of detail needed to support applications for grant funding and which is proportionate to the scheme value.

The page also includes the latest Grant Memorandum. This document is essential reading for all seeking to apply for flood and coastal erosion risk management grant. <https://www.gov.uk/guidance/flood-and-coastal-defence-appraisal-of-projects#contact>

Contact: richard.williams@environment-agency.gov.uk

Useful links

Environment Agency Organogram

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721423/EA_Organisation_Chart_July_2018.pdf

Enhancing the Environment Through FDGIA Projects – OM4 Performance

RFCC is asked to:

- Note the national and local performance in delivering FDGIA funded environmental enhancements (OM4).
- Note the examples of OM4 delivery in other RFCCs.
- Consider whether, and how, the local performance could be improved by:
 - a. Improved reporting;
 - b. More rigorous challenge to project managers;
 - c. Setting an ambition for Enhancing the Environment Through FDGIA and Local Levy Projects.

Using FDGIA expenditure there is a requirement to protect and enhance the environment which is now reinforced by the Government's 25 Year Plan for the Environment. Unlike the protection of property (OM2), there is no KPI target for the environmental enhancement. There are however a number of measures (OM4) on which the Environment Agency reports each year to Defra.

OM4 Reporting Definitions

OM4a	Hectares of water dependent habitat created or improved to help meet the objectives of the Water Framework Directive.
OM4b	Hectares of intertidal habitat created to help meet the objectives of the Water Framework Directive for area protected under the EU Habitats/Birds Directive.
OM4c	Kilometres of rivers protected under the EU Habitats/Birds Directive improved to help meet the objectives of the Water Framework Directive.
OM4d	Kilometres of Water Framework Directive water body enhanced through FCRM.
OM4e	Kilometres of Water Framework Directive water body opened up to fish / eel passage through FCRM.
OM4f	Kilometres of river habitat (including SSSI) enhanced through FCRM.
OM4g	Hectares of habitat (including SSSI) enhanced.
OM4h	Creation of any new freshwater / intertidal / other habitat.

Where the main project driver is reducing flood risk, projects are funded by the partnership funding calculator, which sets funding based on outcomes delivered. These schemes may need to deliver environmental outcomes to mitigate/compensate for their own impacts, which cannot be claimed as OM4. They may also deliver environmental outcomes as part of the scheme (e.g. habitat creation in a flood storage area) which can be claimed as OM4. However, OM4d-h don't attract additional funding via the partnership funding calculator.

Where the main project driver is environmental improvement, projects are 'support' projects, which are needed to ensure the programme as a whole meets environmental obligations. Funding for these schemes is not restricted by the partnership funding calculator, but they must justify their status as exceptions to the usual funding rules. Most of the environmental outcomes delivered by these schemes can be claimed as OM4.

OM4 improvements can only be claimed for projects with FDGIA funding element. Enhancements delivered by Local Levy projects cannot be included e.g. the Stroud and Shropshire Slow the Flow Natural Flood Management projects.

National Delivery of OM4 in 2017-18

EA national data on OM4 data is collated from the conservation projects database' which may hold different information to the Area FCRM Programme teams. Due to the limitations of the reporting mechanism only a national summary of performance is available, performance cannot be reported on a RFCC basis.

Outcome delivered through FCRM in 2017/18		
Waterbody enhanced: total 111 km*	75 km	WFD waterbody enhanced (OM4d)
	54 km	Waterbody opened up to fish passage (OM4e)
	80 km	River habitat enhanced (OM4f)
Habitat enhanced	248 Ha	Habitat (including SSSI) enhanced (OM4g)
Habitat created	556 Ha	New priority habitat created (OM4h)

* Note that the total waterbody enhanced does not equal the total for OM4d-h, to avoid the potential for double-counting.

English Severn & Wye RFCC OM4 Performance

Three projects have contributed OM4 enhancements to the national reported total.

Project	OM4a	OM4b	OM4c	OM4d	OM4e	OM4f	OM4g	OM4h
River Clun/Teme SAC and SSSI – “Unmuddying the waters”	-	-	4.7 km	10.12 km	-	-	-	-
N2K River Restoration - Rivers Wye and Lugg	-	-	2.76 km	-	-	-	17.8 ha	-
Gloucestershire Area REV works package	-	-	-	3.77 km	-	-	-	-
Totals			7.46 km	13.89 km			17.8 ha	

In ES&W, riparian habitat improvement has been undertaken by fencing heavily impacted sections of the River Lugg, Gilvern Brook and River Arrow. On the Clun, riparian habitat improvement has included coppicing, fencing, plus a localised area of bank protection to prevent siltation of the pearl mussel population further downstream in the Clun SAC.

ES&W contributed 18.5% of the national OM4d total and 7.2% of the OM4g total. The disparity on the OM4c reporting can be explained by the timing of the reporting back to national, or lack of reporting e.g. the Much Wenlock FAS has delivered OM4h through creation of wetland/pond in the storage area.

It should be noted that less than 5% of projects on the ES&W RFCC programme delivered OM4s. Those that have reported are those in the Environmental Programme funded by FDGIA. However, not all projects have the potential to contribute OM4 reported enhancements. There may also be under-reporting as the source data systems may not cover all possible enhancements.

2018/19 forecast of English Severn & Wye RFCC OM4 delivery

Project	OM4a	OM4b	OM4c	OM4d	OM4e	OM4f	OM4g	OM4h
Badsey Brook (Broadway, Childswickham and Murcot) FAS	0.1 ha	-	-	-	-	-	-	-
Recovery of Severn Estuary SAC + Delivery of Teme SSSI River Restoration Plan	-	-	-	-	33 km	-	-	-
Totals	0.1 ha				33 km			

Again, the forecast delivery is less than 5% of the total projects. However, circa 10% of the projects in the English Severn and Wye capital programme are geographically close to Special Areas of Conservation and have funding in the 6-year programme, although not all have potential to deliver some environmental enhancements, e.g. Property Level Resilience projects.

One contributing project is Unlocking the Severn, the largest project of its kind in Europe (£21M). The Severn Rivers Trust, Environment Agency, Canal and River Trust, Natural England, Heritage Lottery Fund and the EU are working in partnership to open the entire River Severn for all fish species by addressing historic navigation weirs which are barriers to fish passage. In addition to delivering 199 km of OM4e this will have huge socio-economic benefits through connecting millions of people with their natural and cultural heritage of the Twait Shad which was once a vital part of the economy of the river Severn.

How can we improve OM4 delivery & reporting?

With the emphasis being placed on natural capital and delivering multiple outcomes from projects, in line with the ambition of the 25 Year Environmental Plan, it is prudent to consider how OM4 delivery can be improved.

One of the specific roles of the RFCC Conservation Members is “Monitoring and reviewing programmes of work on flood and coastal erosion risk management and conservation issues needing to be addressed”. Improving the delivery and reporting of environmental enhancements (including OM4) fall within this remit.

The first issue needed is to raise the profile of OM4 reporting, this is variable across RFCC's and as a minimum should be included in the updates on the Capital Programme.

The potential of all projects should be considered to deliver OM4f to OM4h. As part of the Local Choices/programme refresh, projects should be identified on rivers/ intertidal areas EU Habitats/Birds Directive where improvements could be included to help meet the objectives of the Water Framework Directive and ensure that OM4 opportunities are considered and planned at project implementation stage. This will cover categories OM4a to OM4e. Some RFCCs have established a Conservation sub-group to review opportunity & Progress, should we?

For the duration of the six-year programme, the OM reporting & Defra targets cannot be changed so the RFCC is asked to consider whether we should set our own OM4 ambition in terms of either a % of projects, or the number of projects delivering OM4 each year.

It is important that all OM4 achievements are reported and claimed with a similar vigour to claiming properties protected (OM2) and efficiencies.

Whilst national reporting focussed on delivery of OM4 for FDGiA, RFCC are asked to consider adopting a similar approach for Local levy projects.

Dr John Adams
Conservation Lead for ES&W RFCC

Paper by: Modelling and Forecasting Team (Solihull)

**Subject: Flood Forecasting and Flood Resilience Report – September 2018
– Early December 2018**

Recommendation

The Regional Flood and Coastal Committee is asked to:

1. Note the content of this report

1.0 Flood Summary Report

1.1 September 2018

September began with a period of unsettled weather which continued through most of the month. However, little response was recorded on water courses in the Midlands. The last week of the month saw weather turning more settled with drier periods dominating. 95% of the long term average (LTA) rainfall fell over the Severn Basin in September.

1.2 October 2018

Around the 12th of October Storm Callum hit the UK, including the Midlands region. This led to substantial rainfall over this period. This caused issues across the Midlands region, especially in SHWG area where flood protection barriers were deployed at Hereford and Shrewsbury. Some Midlands rain gauges recorded over 60mm of rain on the 12th, with heavier rainfall likely falling away from the gauges. The period after Storm Callum turned more settled with high pressure systems lingering over the south of the country. 83% of the LTA rainfall fell over the Severn Basin.

1.3 November 2018

November began with generally cold and wet weather before turning increasingly settled around the 15th. From mid-November onwards the weather then turned cold and windy with frequent rain or showers. The last few days of the month turned mild, wet and windy over most of the country. 79% of the LTA rainfall fell over the Severn Basin in November.

1.4 December 2018

As of the current date no impacts have been seen in December. Current LTA for the Severn Basin stands at 43%.

1.5 River Severn Regulation

The main period where flow support on the River Severn in 2018 came to an end on 10th September, following several relatively modest rainfall events which were increasingly seen to provide higher sustained flows from the upper Severn in Wales. More substantial rainfall fell on 20th September and again on 12th to 14th October, which along with other modest rainfall negated the need for regulation releases.

The River Severn Regulation Alert was cancelled on 3rd December when certainty was reached on there being no requirement for further releases to be made to support the river, with Clywedog Reservoir also reaching a point where flood drawdown releases would be required. The 2018 season had 78 regulation days.

2.0 Alerts and Warnings

Across the Severn RFCC area we have issued 22 flood alerts and 6 flood warnings.

3.0 Severn and Wye RFCC Community Engagement return September - December 2018

Gloucestershire

Lydney

Working in partnership with Hydrologic and the Forest of Dean Railway, we have successfully installed a new rain gauge at Norchard Heritage railway station near Lydney (one of our priority Rapid Response Catchments).

Working with Lydney Town council and representatives from the Forest of Dean District Council (FODC) we have planned a way forward for public engagement, to maximise awareness and sign-up to the new gauge, which will provide free automatic text messages.

We are now in the process of setting trigger levels for the alerts, and organising a letter drop and public drop-in session in the new-year.



Warwickshire

The Environment Agency continues to work to support Warwickshire County Council and the National Flood Forum in community engagement towards local flood resilience. We attended a community networking evening in September to answer questions on our Asset Maintenance Programme, plus give information on other aspects of work we get involved with, such as upstream catchment management.

Wellesbourne

We have worked with Wellesbourne and Walton Flood Action Group, investigating flood concerns and following up on flooding from Easter. We were pleased to be invited to their community flood information event at the end of November, where as well as being able to discuss matters around river maintenance, water quality and biodiversity, residents provided useful information on the flood event which was discussed at the follow up meeting in early December. We will continue to work with them to investigate concerns, consult on maintenance, and support local investigations into upstream land and river management options for flood, water quality and natural environment benefits.

Long Compton

We are also supporting Long Compton in looking for upstream land and river management options for flood, water quality and natural environment benefits.

Other engagement

We are working with Warwickshire Fire and Rescue Service, Warwickshire County Council and the National Flood Forum to promote flood awareness and winter readiness, to include some local exercises and publicity opportunities over the winter period, especially around being aware of flood water while driving, and safety around ford crossings.

Worcestershire

Malvern Protect your Farm event

Members of the Flood resilience team attended a Malvern Hills – ‘Protect Your Farm, Protect Yourself’ event in Malvern on 22 November. We spoke to the local farming community about the flood warning service and how they can use river levels on line to monitor the River Severn and its tributaries. We also talked to people about soil management and run-off and how they can help minimise impacts on the environment through best practice.



Badsey Scheme opening

On 4 October the Flood Alleviation scheme at Badsey was officially opened, with around 30 local residents in attendance. The scheme protects 300 homes to a 1 in 75 year standard.

The day was a celebration of how successfully the project had been brought together and completed by all of the involved partners. The event was praised by the local residents and received positive media coverage on Midlands Today.



Wolverley

The Environment Agency is continuing to support the Wolverley Flood Action Group alongside the National Flood Forum in their natural Flood management project to plant over 5000 trees in the local area. Local residents have also been working with us to ensure the Drakelow Brook is clear of blockages.

Other engagement



West Mercia LRF

Recently we have provided the WMLRF with a suite of maps covering flood risk and caravan parks within the risk areas. This is with a view to planning engagement in collaboration with the LRF to target those at greatest risk. LRF community resilience group on Thursday 15 November and lead a game of flood snakes and ladders. Worcestershire CC have plans to engage with School children in Hollywood, who flooded in May 2018 and it is the hope that we can work together to utilise the game there.

Working with Universities and young people

On Wednesday 15th November there was a visit to the Fradley Incident Room by some Masters students from Coventry University. They were studying Emergency Planning and Disaster Planning so it was also fantastic to gain their insight into incident response as well as hopefully

inspire them to follow this as a career, perhaps within the Environment Agency.

We also visited Coventry University later in November to deliver a talk on Community Resilience to third year Natural Hazard students.

National Flood Campaign

This year's national flood campaign launched on 29 November focusing on young people between the ages of 18-34. It is this group that is seen as most unaware of their flood risk.

Working with the national comms team we have contacted a vast range of partners including: universities, local sports clubs, housing associations and music venues to name a few, to spread the messages as widely as possible.



All materials can be found online here - <https://www.gov.uk/government/publications/floods-destroy-be-prepared-campaign-material> and you are encouraged to utilise and share any of the materials as widely as possible.

4.0 Recommendation

- 4.1 The Committee is asked to note the content of this report.

Daniel Williamson
Modelling & Forecasting Team Member
Solihull Centre
September 2018

WMD (SHWG) Area = West Midlands (Shropshire, Herefordshire, Worcestershire and Gloucestershire)

WMD (SWWM) Area = West Midlands (Staffordshire, Warwickshire and West Midlands)

EMD Area = East Midlands

LIST OF ABBREVIATIONS

ABI	Association of British Insurers
ADA	Association of Drainage Authorities
AEP	Annual Exceedance Probability
AFRCM	Area Flood and Coastal Risk Manager
AIMS	Asset Information Management System
AMP	Asset Management Plan
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AP	Asset Performance
BAP	Biodiversity Action Plan
BCR	Benefit Cost Ratio
CAMC	Creating Asset Management Capacity
C@R	Communities at Risk
CDM	Construction & Design Management Regulations
CFMP	Catchment Flood Management Plan
CIL	Community Infrastructure Levy
CIWEM	Chartered Institution of Water & Environmental Management
CLA	Country Land and Business Association
CSR	Comprehensive Spending Review
DCLG	Department for Communities and Local Government
Defra	Department for Environment, Food & Rural Affairs
DN&L Area	Derbyshire, Nottinghamshire & Leicestershire Area
DoI	Declaration of Interest
EA	Environment Agency
EFRA	Environment, Food & Rural Affairs Committee
EIA	Environmental Impact Assessment
EMP	Eel Management Plan
FAS	Flood Alleviation Scheme
FCERM	Flood & Coastal Erosion Risk Management
FCRM GiA	Flood & Coastal Risk Management Grant in Aid
FRA	Flood Risk Assessment
FRMP	Flood Risk Management Plan
FSoD	Financial Scheme of Delegation
FWD	Flood Warnings Direct
FWMA	Flood & Water Management Act
GiA	Grant in Aid

LIST OF ABBREVIATIONS

IDB	Internal Drainage Board
KPI	Key Performance Indicator
LA	Local Authority
LDF	Local Development Framework
LEP	Local Enterprise Partnership
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
LPRG	Large Project Review Group
LRF	Local Resilience Forum
LTIS	Long Term Investment Strategy
MAOD	Metres Above Ordnance Datum
MEICA	Mechanical, Electrical, Instrumentation, Control and Automation
MTP	Medium Term Plan
NAO	National Audit Office
NaFRA	National Flood Risk Assessment
NCPMS	National Capital Programme Management Service
NFU	National Farmers Union
NPPF	National Planning Policy Framework
NRW	National Resources Wales
OM	Outcome Measure
PAB	Project Approval Board
PAG	Programme of Acceleration & Growth
PF	Partnership Funding
PFRA	Preliminary Flood Risk Assessment
PLP	Property Level Protection
PSO	Partnerships and Strategic Overview
RBMP	River Basin Management Plan
RFCC	Regional Flood & Coastal Committee
RMA	Risk Management Authority
SAB	SuDS Approval Body
SAC	Special Area of Conservation
SAMP	System Asset Management Plan
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SHW&G Area	Shropshire, Herefordshire, Worcestershire & Gloucestershire Area
SLA	Service Level Agreement
SMP	Shoreline Management Plan

LIST OF ABBREVIATIONS

SoP	Standard of Protection
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STW	Severn Trent Water
SuDS	Sustainable Drainage System
SWMP	Surface Water Management Plan
SW&WM Area	Staffordshire, Warwickshire & West Midlands Area
WEM	Water and Environmental Management
WFD	Water Framework Directive
WLMP	Water Level Management Plan

OUTCOME MEASURE DEFINITIONS

Revised April 2017

OM1	The ratio of the whole life present value benefits (Pvb) to the whole life present value costs (Pvc) from projects in the FDGiA capital investment programme.
OM2	Number of households moved out of any flood probability category to a lower probability category.
OM2b	The number of households moved from the very significant or significant probability category to the moderate or low probability category.
OM2c	The number of households in the 20% most deprived areas moved out of the significant or very significant probability categories to the moderate or low probability category.
OM3	The number of households with reduced risk of coastal erosion.
OM3b	The number of households protected against loss in 20 yrs. from coastal erosion.
OM3c	The number of households in the 20% most deprived areas protected against loss in 20 yrs. from coastal erosion.
OM4a	Hectares of water dependent habitat created or improved to help meet the objectives of the Water Framework Directive.
OM4b	Hectares of intertidal habitat created to help meet the objectives of the Water Framework Directive for areas protected under the EU Habitats/Birds Directive.
OM4c	Kilometres of rivers protected under the EU Habitats/Birds Directive improved to help meet the objectives of the Water Framework Directive.
OM4d	Kilometres of Water Framework Directive water body enhanced through FCRM.
OM4e	Kilometres of Water Framework Directive water body opened up to fish/eel passage through FCRM.
OM4f	Kilometres of river habitat (including SSSI) enhanced through FCRM.
OM4g	Hectares of habitat (including SSSI) enhanced.
OM4h	Creation of any new freshwater / intertidal / other habitat.
OM5	The proportion of households and businesses in highest risk areas that receive the Floodline Warnings Direct (FWD) service.
OM6	The proportion of residential units within planning decisions where the application has been refused or has been amended in line with Agency advice.

Members are reminded of the RFCC purposes and the expectations of RFCCs based on the statutory functions in the Flood and Water Management Act 2010 and the RFCC Regulations 2011

RFCC Purposes

The RFCC brings together members appointed by Lead Local Flood Authorities (LLFAs) and independent members with relevant experience to:

- Ensure there are coherent plans for identifying, communicating and managing flood and coastal erosion risks across catchments and shorelines;
- Promote efficient, targeted and risk-based investment in flood and coastal erosion risk management that optimises value for money and benefits for local communities;
- Provide a link between the Environment Agency, LLFAs, other risk management authorities and other relevant bodies to engender mutual understanding of flood and coastal erosion risks in its area.

Statutory Functions and the Role of the RFCC

Section 23 of the Flood and Water Management Act 2010 requires the Environment Agency to:

- Consult with each RFCC about the way it proposes to carry out its flood and coastal erosion risk management functions in the Committee's region [S23(1)(a)];
- Take into account representations made by the Committee about the exercise of its flood and coastal erosion risk management functions in the Committee's region[S23(1)(b)];
- Obtain the consent of the RFCC before implementing its regional programme for the Committee's region [S23(2)];
- Obtain the consent of the RFCC before it can issue a levy under Section 17 of the Act [S23(3)];
- Obtain the consent of the RFCC to the spending of revenue under Section 118 of the Water Resources Act 1991 in the region where the revenue is raised [S23(4)].

Expectations of RFCCs

Defra advises that the RFCC will be expected to *“engage constructively with, and offer advice to, the Agency, having developed its own view as to the flood and coastal erosion risk management needs within its region informed by local knowledge, contacts with other risk management authorities and engagement with risk management planning.”*

Holding Office

The RFCC Regulations 2011 state that a member may be removed from office if the member has been absent from meetings of the Committee for a period of 6 consecutive months without the approval of the Committee. [S19 (3)(d).]

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