

Peterborough Flood Risk Management Strategy (FMS) Action Plan

Measures listed here are proposed in order to achieve the objectives of the FMS. Each proposed measure will need to be worked up in more detail in a business case and tested for deliverability and viability. See page 74 of the FMS for an explanation of the different dependencies for delivering actions.

KEY TO ACRONYMS					
Action code	A	Asset related	D	Development related	
	C	Communications related	P	Project or scheme	
Management area	Fens	Fens (rural north and east)	P-wide	Peterborough wide	RW Rural west
	U	Urban			
Organisations/partners	AW	Anglian Water	IDBs	All Internal Drainage Boards	PCC Peterborough City Council
	CCC	Cambridgeshire County Council	MLC	Middle Level Commissioners	Peterborough DNA Future Cities Demonstrator project (Peterborough DNA)
	EA	Environment Agency	NCC	Northamptonshire County Council	W&D IDB Welland and Deeping IDB
	FloW Partnership	Flood and Water Management Partnership	NLD IDB	North Level District IDB	WVP Welland Valley Partnership
Funding source	AW AMP	Anglian Water Asset Management Plan	FDGiA	Flood defence Grant in Aid	WFDGiA Water Framework Directive Grant in Aid
Benefits to	Agr	Agriculture	Eff	Efficiency of management	Kno Better local knowledge/understanding for use in management, planning schemes and resilience, new development and insurance
	Bus	Businesses	Env	Natural environment (biodiversity,	
	Com	Community amenities & public services	Hom	Homes	
	Dev	Supports new development	Inf	Infrastructure e.g. highways, power, water	

Action No. & Code	Action Name	Management Area (and location in report)	Ward	Action Description	Lead Partner	Other Partners	Funding source	Cost (£)	FMS Objectives				Benefits to	Time Frame	Progress
									1	2	3	4			
1-A	Maintenance	P-wide	All	Continue current maintenance actions for watercourses, major assets and all other assets as identified in management chapter. Exceptions where new projects result in changes and improvements to operation.	All	N/A	All partners budgets and contractor frameworks	Maintenance frameworks			3		Agr, Bus, Com, Hom, Inf	Ongoing	In progress
2-A	Proactive maintenance	P-wide	All	Carry out additional proactive targeted maintenance based on incident and asset registers, forecasts and budgets.	All	N/A	All partners budgets and contractor frameworks	Maintenance frameworks			3		Agr, Bus, Com, Hom, Inf	Ongoing	In progress
3-A	Incident recording	P-wide	All	Record flooding incidents occurring or occurred in Peterborough and keep an up-to-date incident database. Investigate incidents meeting PCC thresholds and plan appropriate future actions.	PCC	FloW Partnership	PCC in-house resources	Staff-time	1	2			Agr, Bus, Hom, Inf	Ongoing	In progress
4-A	Partnership issue resolution	P-wide	All	Resolution of the issues and incidents identified to FloW Partnership (these are the more complex, long lasting issues).	PCC	FloW Partnership	All partner in-house resources. Potential to need funding bids depends on the issue arising.	Unknown		2	3		Agr, Bus, Hom, Inf	Ongoing	In progress
5-A	Padholme Catchment	U	East	Continue to maintain and operate Padholme main river systems and controls including undertaking desilting.	EA	PCC, NLDIDB	Maintenance funding from Padholme Catchment Agreement	50 - 100 k		2	3		Hom, Bus	2015 - 2020	On-target

6-A	SAMPs	P-wide	All	Review System Asset Management Plans (SAMPs) to determine appropriate levels of maintenance, taking into account the level of risk, funding and asset condition.	EA	-	EA in-house resources	≤ 50 k	1					Eff	2015 - 2020	New
7-A	Asset register	P-wide	All	Maintain and further develop partner asset register with yearly updates.	PCC	FloW Partnership	PCC in-house resources	≤ 50 k	1	2				Eff, Kno	2015 - 2020	In progress
8-A	Data plan	P-wide	All	Prepare and implement data management plan for shared asset data to ensure data sets are kept up-to-date and used correctly.	PCC	FloW Partnership	PCC in-house resources	Staff-time		2				Eff, Kno	2015 - 2020	In progress
9-A	PCC asset survey	P-wide	All	Undertake full asset survey of all PCC key assets to inform local knowledge and feed into asset register. Prioritise and implement according to budget and deliverability.	PCC	N/A	PCC LLFA budget	≤ 50 k	1					Eff, Kno	2015 - 2020	In progress
10-A	Surface sewer surveys	P-wide	All	Obtain additional data on the public surface water sewer network in priority areas to improve partner knowledge and aid scheme design.	AW	PCC	AW Business Plans AMP 6/7, PCC LLFA budget, joint funding bids	50 - 100 k	1					Eff, Kno	2020 - 2025	New
11-A	Private assets	P-wide	All	Gather mapping and condition information about private assets e.g. ordinary watercourses and small reservoirs to determine their risk level. Requires standardised framework for inspection findings.	PCC	Riparian owners	PCC LLFA budget / other stakeholder funds on case by case basis	≤ 50 k	1					Kno	2020 - 2025	New
12-A	Designation	P-wide	All	Designate third party assets (natural or man-made structures or features) deemed to affect flooding. Agree on process, criteria for designation, evidence required, appeal system and protocol for enforcement.	PCC	AW, EA, IDB	PCC in-house resources	Staff-time	1					Bus, Hom	2015 - 2020	New
13-A	Culverts and bridges	Fens	Eye & Thorney	Work together to clarify ownership of culverts and bridges throughout IDB area with the aim of developing an efficient working plan to improve asset data and improve conditions.	PCC and NLDIDB	Other IDBs	IDB and PCC in-house resources	Staff-time	1	2	3			Agr, Inf	2015 - 2020	New
14-A	Peakirk pumping station	Fens	Newborough	Investigate issues at Anglian Water's Peakirk pumping station and resolve any mechanical issues.	AW	Peakirk Parish Council	AW AMP 5 / 6	≤ 50 k	1		3			Com	2015 - 2020	In progress
15-A	Fletton and Woodston	U	Fletton & Woodston	Investigation of sewer networks in Fletton High Street to update asset records and identify if improvements can be made to the existing routing of surface water.	AW	PCC	AW AMP 5 / 6	50 - 100 k	1		3			Bus, Hom	2015 - 2020	In progress
16-A	Drainage district modeling	Fens	Barnack, Eye & Thorney, Glington & Wittering, Newborough, Northborough, Stanground Central, Stanground East	IDBs to model their drainage districts to get an updated idea of the standard of protection offered.	NLDIDB, W&D IDB, MLC	-	IDBs	50 - 100 k	1					Kno	Ongoing	In progress
17-A	Public Services Co-operation Agreements	P-wide	All	Establish public sector co-operation agreements where appropriate with fellow flood and water management organisations to benefit from shared services delivered on a not-for-profit basis.	PCC	EA, IDB	PCC in-house resources	Staff-time		2				Eff	2015 - 2020	New
18-A	Groundwater	P-wide	All	Carry out further research into groundwater flood risk within Peterborough and stay up-to-date on the development of a national publically available groundwater map.	PCC	EA	PCC in-house resources	Staff-time	1					Kno	2015 - 2020	In progress

19-D	Resilient development	P-wide	All	Define PCC approach to resilient development in planning, including clearer policy on exceedance flows and resilient construction in new and redeveloped buildings.	PCC	EA	PCC in-house resources	Staff-time				4	Dev	2015 - 2020	New
20-D	SFRA	P-wide	All	Review the Strategic Flood Risk Assessment including climate change impacts and critical drainage areas approximately every five years in line with the Local Plan review.	PCC	FloW Partnership	PCC strategic planning budget and EA in-house resources	≤ 50 k	1			4	Dev	2015 - 2020	New
21-D	SPD	P-wide	All	Review Flood and Water Management Supplementary Planning Document approximately every five years in line with the Local Plan review.	PCC	FloW Partnership	PCC in-house resources	Staff-time	1	3		4	Dev	2015 - 2020	New
22-D	Development management	P-wide	All	Improved focus on surface water management and sustainable drainage through the Planning (Development Management) process including improved consultation with AW and IDB and setting out options for adoption.	PCC	FloW Partnership, Developers	PCC in-house resources	Staff-time	1	3		4	Dev	2015 - 2020	In progress
23-D	WCS	P-wide	All	Review the Water Cycle Study approximately every five years in line with the Local Plan review.	PCC	FloW Partnership, Developers	PCC strategic planning budget	50 - 100 k				4	Dev	2015 - 2020	New
24-C	FloW Partnership	P-wide	All	Communication across the FloW Management Partnership organisations and within PCC - continue 6-monthly external meetings, and regular internal meetings, monitor progress against action plan and objectives, and establish sub groups as required.	PCC	FloW Partnership	All partner in-house resources	Staff-time	1	2			Eff, Kno	Ongoing	On-target
25-C	Council website	P-wide	All	Ensure water and flood risk information is available on the City Council water website and it is useful and up-to-date. Implement and maintain new SuDS website.	PCC	Communities and developers	PCC in-house resources	Staff-time	1				Com, Eff, Kno	Ongoing	On-target
26-C	Co-ordinate engagement	P-wide	All	Undertake and co-ordinate appropriate engagement activities to promote greater awareness of flood and water-related management in Peterborough. Involve community groups in the establishment of campaigns.	FloW Partnership	-	PCC in-house resources	Staff-time	1				Eff	2015 - 2020	New
27-C	Flood awareness	P-wide	All	Deliver targeted community engagement to encourage people to be flood aware, to sign up to receive flood warnings and to understand what action to take to reduce the impact of flooding on receipt of a warning. Continue to promote and use the EA's Floodline Warnings Direct service but also investigate other warning and engagement tools related to surface water flooding or different types of social media. Learn from the outcomes of the Northamptonshire County Council pathfinder project and implement recommendations as appropriate.	EA and PCC	FloW Partnership	EA budgets and PCC LLFA budget	≤ 50 k	1				Bus, Com, Hom, Kno	2015 - 2020	New
28-C	Community involvement	P-wide	All	Engagement campaigns encouraging community involvement in managing rivers and the environment. Includes working closely with RiverCare groups in Peterborough and with landowners, as well as generally raising awareness of riparian responsibilities.	FloW Partnership	RiverCare, landowners, communities	PCC LLFA budget, AW AMP 6/7, Keep Britain Tidy (RiverCare), EA budgets	≤ 50 k	1	3		4	Bus, Com, Eff, Env, Hom, Kno	2015 - 2020	New

29-C	Keep it Clear 1	U	Orton with Hampton	Keep it Clear: Campaign to encourage communities to help our work by playing their part in protecting the sewer network. This includes not disposing of fats, oils, greases and other non-flushables down the sink or toilets or putting anything into surface water drains in the road.	AW	PCC, Parish Council	AW AMP 6 and PCC LLFA budget	≤ 50 k	1		3		Bus, Eff, Hom, Inf	2015 - 2020	New
30-C	Keep it Clear 2	Fens	Barnack, Glington & Wittering, Newborough, Northborough	Keep it Clear: Campaign to encourage communities to help our work by playing their part in protecting the sewer network. This includes not disposing of fats, oils, greases and other non-flushables down the sink or toilets or putting anything into surface water drains in the road.	AW	PCC, Parish Councils	AW AMP 6 and PCC LLFA budget	≤ 50 k	1		3		Env, Hom, Inf	2015 - 2020	New
31-C	Existing flood wardens	U, Fens	Newborough, Orton Waterville, West	Maintain relationships with existing flood wardens.	PCC	EA	PCC and EA in-house resources	Staff-time	1	2	3		Eff, Kno	Ongoing	On-target
32-C	New flood wardens	P-wide	All	Actively recruit more volunteers to the Flood Warden Scheme starting in priority areas. Provide annual training and relationship building event for all flood wardens and interested residents. Ideally would have one warden for each Parish area, subcatchment area or Ward.	PCC and EA	FloW Partnership	PCC LLFA budget and EA budgets/ in-house resources	≤ 50 k	1	2	3		Eff, Kno	2015 - 2020	New
33-C	Sustainable water	P-wide	All	Continue campaigns and projects promoting sustainable water to communities including Drop 20 water efficiency campaigns and RiverCare support (flood risk benefits come from general improvement in people's understanding of water management and their actions).	AW	EA, PECT, Keep Britain Tidy, PCC	AW AMP 6, EA budgets	≤ 50 k	1			4	Bus, Env, Hom, Kno	2015 - 2020	Progress
34-C	Permeable driveways	P-wide	All	Set up a campaign to discourage the paving over of drives and gardens with impermeable surfaces and raise awareness about the problems of urban creep.	PCC	AW	PCC LLFA budget	≤ 50 k	1		3	4	Env, Hom, Inf	2015 - 2020	New
35-C	Developer engagement	P-wide	All	Continue and increase engagement with developers regarding surface water management through forums, website, pre-application advice and promotion of Supplementary Planning Document.	PCC	FloW Partnership	PCC in-house resources	Staff-time	1			4	Dev	2015 - 2020	In progress
36-C	Flood warnings	P-wide	All	Flood forecasting/warning service: Maintain current services, undertaking reviews of community based flood warning areas after improvements to forecast models or post-incident performance analysis. This service is underpinned by maintenance of flow gauging station and rain gauges throughout the catchment. Links to be made to PCC and NCC's rain gauge projects.	EA	NCC, PCC	EA budgets	≤ 50 k	1	2			Bus, Hom	Ongoing	In progress
37-C	Utilities and infrastructure	P-wide	All	Continued engagement with energy and water companies and other service providers about ensuring the resilience of infrastructure in Peterborough. Joint projects will be considered where appropriate.	PCC	EA, AW, UK Power Networks, Network Rail	PCC in-house resources. Potentially CIL if joint projects are identified.	Staff-time	1	2	3	4	Inf	Ongoing	In progress
38-P	MAFP	P-wide	All	Update Cambridge and Peterborough Multi-Agency Flood Plan using new flood maps, incident database and SFRA mapping to identify priority areas.	PCC	LRF	PCC in-house resources	Staff-time	1	2			Bus, Eff, Hom, Inf, Kno	2015 - 2020	New

39-P	Severe weather system	P-wide	All	Consider the use of a severe weather recording system to enable the LRF to be able to assess impacts on resources and budgets of extreme weather events.	PCC	LRF	PCC in-house resources / environment budget	≤ 50 k	1	2			Eff, Kno	2015 - 2020	New
40-P	Understanding the risk - Ortons	U	Orton Waterville, Orton Longueville	Complete flood risk assessment from all sources, communicate to community and work with community to understand future options for resilience.	EA	PCC	EA budget, EA and PCC in-house resources	≤ 50 k	1		3		Bus, Hom	2015 - 2020	Some obstacles
41-P	Welland flood banks refurbishment	Fens	Newborough, Glington & Wittering, Northborough	Re-review Welland Cradge Bank Performance Review project using outputs from updated River Welland model. Include review of the operation of the Crowland and Cowbit Washes. Implement recommendations from review sustaining the standard of service provided. Opportunities to improve river corridor habitats and improve the ecological resilience of the Maxey Cut to extreme high and low flows will be included as part of this project.	EA	PCC, Lincolnshire County Council, W&D IDB, Communities, WVP, Welland Rivers Trust	FDGiA, WFDGiA, several other sources to be sought including CIL	5 m - 10 m			3	4	Bus, Com, Dev, Eff, Env, Hom, Inf	2015 - 2025	New
42-P	Understanding the risk - West ward	U	West	Continue to work with the community and Flood Wardens to develop understanding of the local river response based on river levels and local knowledge. Develop appropriate actions to manage the risks.	EA and PCC	Flood Wardens, community, Flow Partnership	PCC and EA in-house resources. Other sources of funding will be sought as appropriate.	≤ 50 k	1		3		Hom	2015 - 2020	New
43-P	Understanding the risk - Fletton & Woodston	U	Fletton & Woodston	Work with the community to better understand flood risk in this ward, including the impact of combined sewers, and develop appropriate actions to manage the risk. Assess the modelling required to determine actual allowable discharge rates for sites discharging to Fletton Spring.	EA and PCC	Community, Flow Partnership	PCC and EA in-house resources. Other sources of funding will be sought as appropriate.	≤ 50 k	1		3		Bus, Hom	2015 - 2020	New
44-P	Werrington Brook improvements programme	U	Werrington North, Werrington South, Walton, North Bretton	A programme of works: Appraise options and develop detailed designs for water quality, habitat and flood risk improvements. Seek additional funding. Deliver community and business engagement schemes. Deliver in-channel improvements at various points along Marholm Brook and Werrington Brook.	EA and PCC	Werrington Neighbourhood Council, Welland Valley Partnership, Flow Partnership, Network Rail, local businesses and landowners	PCC LLFA budget, WFDGiA, FDGiA, WVP, AW AMP 6, CIL, other funding sources being sought such as community grants and business funding.	100 - 500 k			3	4	Bus, Com, Dev, Env, Hom	2015 - 2020	On-target
45-P	Brook Drain flood alleviation scheme	U	North Bretton	Comprehensive review of system. Develop and secure funding for a flood alleviation and WFD improvements scheme linked to Network Rail's proposed works to Werrington Junction. Investigate the need for and improvements to be gained from changing the operation of the Werrington penstock at the confluence with Marholm Brook and Brook Drain. Investigate options for control of diffuse pollution.	EA	PCC	FDGiA, Network Rail, CIL, PCC LLFA budget, WFDGiA	500 k - 1 m			3	4	Bus, Dev, Eff, Inf	2015 - 2020	New

46-P	Paston Brook flood alleviation scheme	U	North Ward	Comprehensive review of flood risk, investigating appropriate solution to manage the risk, which may include improving the A47 culverts on Paston Brook.	EA	PCC, AW	FDGiA, PCC LLFA budget, AW AMP 6	1 m - 5 m				3	Env, Hom, Inf	2015 - 2025	New	
47-P	Understanding the risk - Stanground Central	U	Stanground Central	Work with the community to better understand flood risk in this ward and develop appropriate actions to manage the risk. Includes consideration of flow monitoring on the Lode, modelling to determine the actual allowable discharge rates for sites discharging to Stanground Lode, and removal of surface water from combined sewers.	FloW Partnership	Community	WFD GiA, EA and PCC in-house resources. Other sources of funding will be sought as appropriate.	≤ 50 k	1			3	Bus, Eff, Hom	2015 - 2020	New	
48-P	Understanding the risk - Rivergate	U	Central	Work with local businesses and partners to better understand the risk around Rivergate. Undertake additional mapping of sewers if needed. Determine whether further works are required. Link works in with highway improvements.	FloW Partnership	Local businesses	AW AMP 7 business plan, PCC LLFA budget, local businesses	≤ 50 k				3	Bus	2020 - 2025	New	
49-P	Peterborough adaptation plan	P-wide	All	Develop a partnership adaptation plan for Peterborough to enable the City to be more resilient to changes in severe weather, climate, resource availability etc.	PCC	FloW Partnership, Environment Capital Steering Group	PCC environment budget and other sources of funding will also be sought.	≤ 50 k	1	2		3	4	Agr, Bus, Com, Dev, Eff, Env, Hom, Inf, Kno	2015 - 2020	New
50-P	Rain gauges	P-wide	Barnack, Bretton North, Central, Dogsthorpe, East, Eye & Thorney, Fletton & Woodston, Glington & Wittering, North, Northborough, Newborough, Orton with Hampton, Orton Longueville, Orton Waterville, Paston, Stanground Central, Werrington North, West	Install rain gauge(s) in Peterborough to provide data for warnings and response, incident reporting and long-term records for use by schools and PCC.	Peterborough DNA	Local schools	Peterborough DNA, PCC LLFA funding	≤ 50 k	1	2				Eff, Kno	2015 - 2020	On-target
51-P	Dogsthorpe Ward flood alleviation scheme	U	Dogsthorpe	Work in partnership with the community to better understand the risk in this area and to develop options for reducing surface water flood risk. Consider retrofit of sustainable drainage systems and an outlet in the embankment. Implement preferred option.	PCC	AW, community	PCC, AW AMP 7 business plan	50 - 100 k				3	Hom	2015 - 2020	New	
52-P	Stewards House Drain	Fens	Eye & Thorney	Undertake capacity improvement works to Stewards House Drain	NLDIDB	PCC, local school, Parish Council	FDGiA, NLDIDB budget, PCC LLFA budget, local beneficiaries	50 - 100 k				3	Bus, Com, Hom	2015 - 2020	On-target	

53-P	Counter Drain flood resilience scheme	Fens	East	Make the channel more resilient to pump failure and failure of the banks. Reduce the frequency of flooding.	Flow Partnership	Landowners	All riparian owners	100 - 500 k		2	3	4	Agr, Env, Inf	2015 - 2020	Some obstacles
54-P	Wansford flood alleviation scheme	RW	Outside Peterborough, Glington & Wittering	Work with professional partners and community to develop and secure funding for a flood alleviation scheme. Involves a comprehensive review of flood risk and existing management assets and investigation of appropriate solutions to sustain the standard of service that they provide.	EA	CCC, NCC, Community, PCC	FDGiA, WFDGiA, other funding to be sought	500 k - 1 m			3		Bus, Hom	2020 - 2025	On-target
55-P	Whittlesey Washes (Nene Washes) works	Fens	Outside Peterborough	Improvement to banks of the Washes to reduce the chances of breach. Essential works under the Reservoirs Act, arising from the Whittlesey Washes Probable Maximum Flow study and the section 10 Inspection Report. Includes work to Stanground green wheel cycle route.	EA	NLD IDB, PCC, CCC	FDGiA, local levy, NLD IDB, local beneficiaries	> 10 m			3		Agr, Bus, Dev, Hom, Inf	2015 - 2020	In progress
56-P	City centre combined sewers	U	Central, West	Upon redevelopment of sites or significant highway improvements push for removal of surface water discharges to combined sewers. Outside of these sites consider partnership projects (such as SuDS retrofit schemes) to drive this change forward and achieve a reduction in flood risk from the combined sewers.	PCC	AW, developers	CIL, new PCC capital budget, developers, AW AMP 6 and 7	100 - 500 k			3	4	Bus, Eff, Hom, Inf	2015 - 2020	New
57-P	Understanding Ravensthorpe	U	Ravensthorpe	Exercise to understand why Ravensthorpe scores highly in the climate change susceptibility work and plan for this accordingly with future actions.	PCC	FloW Partnership	PCC in-house resources	Staff-time			3	4	Hom, Kno	2015-2020	New
58-P	City Council - sustainable water	P-wide	All	Undertake a variety of measures to help deliver the Environment Capital Action Plan, by ensuring best use of natural resources and promoting protection of water environments (e.g reducing water consumption and minimising pollution).	PCC	-	PCC strategic resources, framework contractors or environment budget	Staff-time				4	Eff, Env	2015 - 2020	In progress
59-P	Emergency response	P-wide	All	As warning of flooding is given prepare for the event through communications and implementation of the Multi Agency Flood Plan. Undertake response activities in accordance with the roles of Category 1 and 2 emergency responders.	LRF	Flood wardens, FloW Partnership	In-house budgets, emergency resilience budgets	Unknown	1	2	3		Bus, Com, Hom, Inf	Ongoing	On-target
60-P	Riverside pathway flood alleviation	Fletton & Woodston	U	Work with landowners in the area to develop options and seek funding to reduce the impact of flooding to key city centre cycle and pedestrian routes (Green Wheel and other highways). Could be combined into a more holistic community scheme involving improvements to aesthetic environment, amenity, safety and biodiversity.	Railworld and PCC	Network Rail, EA, RiverCare, PECT	In-house budgets, emergency resilience budgets	≤ 50 k			3	4	Com, Inf	2015 - 2020	New
61-P	Woodland creation for flood risk	P-wide	All	Encourage opportunities for targeted new woodland creation where it will help to mitigate flood flow issues, at the same time as contributing to biodiversity enhancement and green infrastructure provision.	PCC and PECT	Woodland Trust	Funding to be sought	≤ 50 k				4	Agr, Bus, Env, Hom	2015 - 2025	New

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