

Guidance Notes

1. The 'Master Action Plan List' is provided to give a consistent basis for LLFA and any partners' actions and is to be provided to all partner organisations. The Master List is to be kept up to date (this is a living document) and kept CONFIDENTIAL.
2. All fields where data is available, or becomes available, are to be populated (dropdown menus are provided where relevant).
3. Extra tabs can be added to this spreadsheet to create summary tables as required by the individual organisations, but should be dynamically linked back to the Master List (e.g. sorted by lead organisation, action type or other combination of fields).
4. No formatting restrictions are placed on this spreadsheet - column widths, colours, field order and text style can be varied as required.
5. The 'Abbreviated Action Plan List' is a sub-set of the Master List and is provided for inclusion in the SWMP document that will be made available to the public.

'Action Types' in the above Lists are defined as follows:

Action Type Abbreviation	Definition	Explanation
FWMA / FRR	Flood and Water Management Act / Flood Risk Regulations	Duties and actions as required by the FWMA and FRR - refer to Appendix A of the LGG 'Preliminary Framework to assist the development of the Local Strategy for Flood Risk Management' (February 2011) for minimum requirements
Policy	Policy Action	Spatial planning or development control actions
C / P	Communication / Partnerships	Actions to communicate risk internally or externally to LLFA or create / improve flood risk related partnerships
F / R	Financial / Resourcing	Actions to secure funding internally / externally to support works or additional resources to deliver actions
I / F / D	Investigation / Fesibility / Design	Further investigation / feasibility study / design of mitigation
FMA	Flooding Mitigation Action	Maintenance or capital works undertaken to mitigate flood risk

MASTER ACTION PLAN - CONFIDENTIAL

Group	ID	Action			Priority Ranking	Cost			Benefit	Potential Funding Source	Timing			Comments	Responsibility			Other Stakeholders	EU Related?	Review		Location		Linkages	
		What?	How?	Where?		Investigation / Feasibility	Capital	Other			Timeframe	Start Date	Approx. Duration		Action Type	Lead Organisation	LFPA Dept.			Primary Support	Frequency	Next Review Date	CDA ID	Policy Area ID	Related Action IDs?
Local Actions - General Flood Risk Management	1	Take forward actions set out in the SWMP with partners and other flood risk management authorities (if any)	Continue to run a Flood Management Group within the Council and liaise with BCKLWN and others as necessary	Borough Wide	High	-	-	-	Co-ordinated delivery of local flood risk management across the catchment	NCC, partners, BCKLWN, others	Ongoing	2011	Long	FMA	NCC and BCKLWN	FWM Team	Steering Group, partners, BCKLWN, others	Environment Agency, Anglian Water, Network Rail	No	Annually	2012	N/A	N/A	N/A	N/A
	2	Seek opportunities to integrate fluvial and surface water flood risk reduction measures	Review and monitoring of policy implementation and in partnership with EA	Borough Wide	High	-	-	-	Mid-long term reduction in flood risk and improvement in water quality	Private developer	Ongoing	2011	LDF Plan Period	Policy	NCC and BCKLWN	FWM Team	All other LFPA Departments and BCKLWN Departments		No	Annually	2012	N/A	N/A	N/A	N/A
	3	Look for opportunities to reduce flood risk to critical transport infrastructure whilst upgrading the existing drainage network in partnership with Anglian Water, Highways Agency, IDB and Network Rail	Discussion with relevant officers of NCC & BCKLWN	Borough Wide	High	-	-	-	Refine understanding of risk to critical infrastructure. Prioritise localised drainage improvements	Highways Agency, AW and Network Rail	Medium	2011	1-2 years	I / F / D, FMA	NCC	Highways	Highways Agency and Anglian Water	Anglian Water, Network Rail,	No	Annually	2012	N/A	N/A	N/A	N/A
	4	Ensure current emergency response to catchment-wide surface water flooding is appropriate	Liaise with Emergency Planning forum	Borough Wide	High	-	-	-	Emergency response based on best available information	NCC and BCKLWN	Short	2011	1 year	I / F / D	NCC and BCKLWN	NCC Resilience Team	Norfolk Resilience Forum	Network Rail	No	N/A	N/A	N/A	N/A	N/A	N/A
	5	Determine extent of i) residential use of at-risk basements (if any), ii) groundwater bores and iii) geological conditions, and decide if a risk from flooding exists.	No basements are identified in the EA NRD however this should be confirmed with local knowledge. If basements are identified then use predicted extent of 75year flood to enable determination.	Borough Wide	High	-	-	-	Better understanding of scope of flooding impact, and improving identification of solutions and funding	NCC and BCKLWN	Medium	2011	1 year	I / F / D	NCC and BCKLWN	FWM Team	Development Control	Local Residents, NCC	No	Annually	2012	N/A	N/A	20	N/A
	6	Consider retrofitting flood resilience and resistance measures to areas at risk of flooding in local topographic low points and basement properties where there is a history (and likely future risk) of groundwater ingress (and likely future risk) of groundwater ingress (and likely future risk) of groundwater ingress	No basements are identified in the EA NRD however this should be confirmed with local knowledge. If identified then impermeable membranes, additional drainage should be investigated. Determine risk of flooding in areas at topographic low points (i.e does a pumping scheme assist in reducing risk)	Borough Wide	Medium	-	-	-	Reduction in the impact of flooding	Property Level Flood Protection (Defra, FDGIA)	Long	TBC	10 years	FMA	NCC and BCKLWN	FWM Team	Building Control	Local Residents, NCC	No	Annually	2012	N/A	N/A	20	N/A
	7	Determine whether services (e.g. power, telecommunications) are resilient to surface water flooding	Discuss the overall resilience of services with relevant companies	Borough Wide	Medium	-	-	-	Community resilience to flooding	Service providers	Medium	2011	3 year	CP, FR	NCC and BCKLWN	FWM Team	Norfolk Resilience Forum		No	Annually	2012	N/A	N/A	N/A	N/A
	8	Installation of additional road gullies or alternative drainage systems to reduce standing water depth and duration	As part of highways improvement programme include additional construction task of installing additional gullies or alternative drainage systems where feasible and required. Consultation with Anglian Water and IDB's may be required.	In relevant CDAs across the catchment	Medium	-	-	-	Reduction in the probability of flooding	NCC/BCKLWN/Developer contributions / other?	Medium	2011	Ongoing	FMA	NCC	FWM Team	Anglian Water and NCC Highways	BCKLWN	No	Annually	2012	N/A	N/A	N/A	N/A
	9	Determine areas within the catchment which are appropriate for retrofitting bioretention basins and carparking pods	Desktop study to determine feasibility of incorporating these SUDs	Borough Wide	Medium	-	-	-	Will assist in reducing runoff volumes and improving quality of water discharging to watercourses	Developer contributions / other?	Medium	2011	1-2 years	I / F / D	NCC	FWM Team		Environment Agency	No	Annually	2012	N/A	N/A	N/A	N/A
Policy	10	Developments across the catchment to include at least one 'at source' SUDs measure, resulting in a net improvement in water quantity or quality discharging to sewer	Development Control Review and Monitoring of policy implementation	Borough Wide	High	-	-	-	Mid-long term reduction in flood risk and improvement in water quality	Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Planning Strategy	Environment Agency?	Environment Agency, NCC	No	Annually	2012	N/A	N/A	Nov-14	N/A
	11	All developments across the catchment (excluding minor house extensions less than 50m ²) which relate to a net increase in impermeable area are to include at least one 'at source' SUDs measure (e.g. water butt, rainwater harvesting tank, bioretention planter box etc). This is to assist in reducing the peak volume of runoff discharging from the site	Development Control Review and Monitoring of policy implementation	Borough Wide	High	-	-	-	Mid-long term reduction in the probability of flooding	Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Planning Strategy	Environment Agency?	Environment Agency, NCC	No	Annually	2012	N/A	N/A	10, 13 & 14	N/A
	12	Proposed 'brownfield' redevelopments of more than one property or area greater than 0.1 hectare are required to reduce post-development runoff rates for events up to and including the 1 in 100 year return period event with an allowance for climate change (in line with PPS25 and UKCIP guidance) to 50% of the existing site conditions. If this results in a discharge rate lower than the Greenfield conditions it is recommended that the Greenfield rates (calculated in accordance with Ioh124) are used.	Development Control Review and Monitoring of policy implementation	Borough Wide	High	-	-	-	Mid-long term reduction in the probability of flooding	Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Planning Strategy	Environment Agency?	Environment Agency, NCC	No	Annually	2012	N/A	N/A	10-Dec	N/A
	13	Developments located in Critical Drainage Areas (CDAs) and for redevelopments of more than one property or area greater than 0.1 hectare require a betterment to Greenfield runoff rates (calculated in accordance with Ioh124). It is recommended that a SUDs treatment train is utilised to assist in this reduction.	Development Control Review and Monitoring of policy implementation	Borough Wide	High	-	-	-	Mid-long term reduction in the probability of flooding	Borough and Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Planning Strategy	Environment Agency	Environment Agency, NCC	No	Annually	2012	N/A	N/A	Oct-13	N/A
	14	Implement Policy relating to Best management practices in relation to Water Quality and a reduction in pollutant loads (investigate using the water quality computer software (MUSIC or similar))	Development Control Review and Monitoring of policy implementation	Borough Wide	High	-	-	-	Mid-long term reduction in the probability of flooding	Borough and Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Development Control	Environment Agency	Environment Agency, NCC	No	Annually	2012	N/A	N/A	N/A	N/A
	15	Ensure drainage systems are operating at capacity - maintenance of gullies	Review existing gully clearance/maintenance schedules and if necessary revise/prioritise CDAs	Borough Wide	High	-	-	-	Flooding isn't exacerbated	NCC and BCKLWN	Ongoing	2011	Long	FMA	NCC and BCKLWN	Highways	Street Cleansing	Anglian Water	No	Quarterly	2012	N/A	N/A	N/A	N/A
Maintenance	16	Ensure drainage systems are operating at capacity - maintenance of Anglian Water sewers. Anglian Water to recommend SWMP findings to PPM programme, if flooding identified as drainage serviceability issue	May require mapping of existing drainage infrastructure. Review existing maintenance schedules and if necessary revise/prioritise CDAs	Borough Wide	High	-	-	-	Flooding isn't exacerbated	Anglian Water	Ongoing	2011	Long	FMA	Anglian Water	FWM Team	NCC Highways and BCKLWN	Anglian Water	No	Quarterly	2012	N/A	N/A	N/A	N/A
	17	Maintain ditches and balancing ponds on Borough owned land and enforce maintenance of land drainage by riparian owners;	Review existing maintenance schedules and if necessary revise/prioritise area of historic blockage (may require public consultation)	Borough Wide	High	-	-	-	Flooding isn't exacerbated	BCKLWN	Ongoing	2011	Long	FMA	BCKLWN	FWM Team	BCKLWN, IDB	Anglian Water Environment Agency,	No	Quarterly	2012	N/A	N/A	N/A	N/A
	18	Maintain Dersingham Bog to ensure the Special Area of Conservation (SAC) is not compromised by surface water runoff and any changes from development or flow regime	Undertake monitoring of the bog (water quality, flora/ fauna, etc)	Dersingham Bog	High	-	-	-	Maintain SAC status	NCC and BCKLWN	Ongoing	2011	Long	FMA	BCKLWN/NCC	FWM Team	Environment Agency,	IDB	Yes	Quarterly	2012	N/A	N/A	N/A	N/A
Local Actions - General	19	Developments in urban areas at risk of flooding in Local Flood Risk Zones (LFRZs) to contribute to measures to reduce surface water flood risk in the settlements	Section 106, Community Infrastructure Levy, Development Control Policy	Borough Wide	High	-	-	-	Mid-long term reduction in the probability of flooding	Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Development Control	Building Control	Environment Agency, NCC	No	Annually	2012	N/A	N/A	N/A	N/A
	20	Seek to include SUDs retrofitting policies in Planning reform to enhance or replace conventional drainage systems in LFRZs, or elsewhere as opportunities arise	Review and monitoring of policy implementation	Borough Wide	Low	-	-	-	Mid-long term reduction in flood risk and improvement in water quality	Private developer	Medium	2012	LDF Plan Period	Policy	NCC and BCKLWN	Planning Strategy	Building Control		No	Annually	2012	N/A	N/A	N/A	N/A
	21	Use SWMP mapped outputs to require developers in areas at risk of flooding to demonstrate compliance with PPS 25 to ensure development will remain safe and will not increase risk to others, where necessary supported by more detailed integrated hydraulic modelling	Development Control Policy	Borough Wide	High	-	-	-	Mid-long term reduction in the consequences of flooding	Private developer	Ongoing	2011	LDF Plan Period	Policy	NCC/BCKLWN	Planning Strategy	Building Control		No	Annually	2012	N/A	N/A	N/A	N/A
	22	Ensure any development falling within a Strategic Growth Area is designed to limit runoff to low predevelopment Greenfield runoff rates.	Development Control Policy	All Strategic Growth Areas	High	-	-	-	Long term reduction in flood risk in the GA	Private developer	Ongoing	2011	LDF Plan Period	Policy	BCKLWN	Planning Strategy		Environment Agency, NCC	No	Annually	2012	N/A	N/A	N/A	N/A
	23	Investigate whether flooding incidents have occurred in LFRZs and other areas identified as being at risk of flooding	Review flooding reports, then conduct survey of local residents (e.g. mail drop, door knocking) to update database	Borough Wide	High	-	-	-	Validate model outputs, resident 'buy in'	NCC and BCKLWN	Short	2011	1 year	I / F / D	BCKLWN	FWM Team		Local Residents NCC	No	N/A	N/A	N/A	N/A	N/A	N/A
	24	Monitor flood risk related problems and manage future development to minimise impact on flood risk	Development control policy and monitoring of flood risk incident register	Areas with ponding >0.3m	Low / Medium	-	-	-	Proactive management of potential flood risk in areas of higher risk probability	NCC and BCKLWN	Ongoing	2011	Ongoing	FMA	BCKLWN	FWM Team	NCC Highways	NCC	No	Annually	2012	N/A	N/A	N/A	N/A
	25	Carry out more detailed studies including further investigation of the technical issues and consultation with local stakeholders	Site investigations and modelling	Areas with ponding >0.3m	High	-	-	-	Refine understanding in flood risk within the Borough	NCC and BCKLWN	Short	2011	5 years	I / F / D	NCC	FWM Team	Highways and BCKLWN	Environment Agency, Anglian Water	No	N/A	N/A	N/A	N/A	29	N/A
	26	Work proactively to monitor the condition of ordinary watercourse and its culverts.	Assess condition of ordinary watercourses	Borough Wide	High	-	-	-	Understanding of culvert condition and associated potential collapse risk	EA / NCC/BCKLWN	Ongoing	2011	Ongoing	FMA	NCC/BCKLWN	FWM Team	EA	Local Residents	No	Monthly	2011	N/A	N/A	27	N/A
	27	Work proactively with the EA to monitor the condition of Main Rivers, culverts and Defences.	Share condition assessment information and jointly review other information as it becomes available	Borough Wide	High	-	-	-	Understanding of standard of defences	EA / NCC/BCKLWN	Ongoing	2011	Ongoing	FMA	EA		NCC	Local Residents	No	Monthly	2011	N/A	N/A	26	N/A
	28	Engage Highways Agency to monitor any future flooding and assess the associated risk on all Major Roads	Maintain regular contact with relevant parties to share flood risk information	Borough Wide	High	-	-	-	Understanding of local flood risk and potential impacts	Highways Agency	Ongoing	2011	Ongoing	FMA	NCC	Highways	Highways Agency		No	Quarterly	2012	N/A	N/A	32	N/A
>0.5m	29	Undertake a detailed feasibility study to confirm significant level of flood risk predicted by SWMP study and use as justification for possible FDGIA funding	Engage consultant to complete detailed study and work with EA to investigate FDGIA opportunities	Borough Wide	High	E40k	TBC	TBC	Improved understanding of LFRZ flood mechanisms and potential funding opportunities for mitigation solutions	FDGIA / NCC / EA	Short	2011	4 months	FMA	NCC	FWM Team	EA and BCKLWN	Anglian Water, Local Residents	No	6months	Mid 2012	N/A	N/A	25	N/A

MASTER ACTION PLAN - CONFIDENTIAL

Group	ID	Action			Priority Ranking	Cost			Benefit	Potential Funding Source	Timing			Action Type	Comments	Responsibility			Other Stakeholders	EU Related?	Review		Location		Linkages	
		What?	How?	Where?		Investigation / Feasibility	Capital	Other			Timeframe	Start Date	Approx. Duration			Lead Organisation	LLFA Dept.	Primary Support			Frequency	Next Review Date	CDA ID	Policy Area ID	Related Action IDs?	Related Partners' Action IDs?
Local Actions - depth	30	Investigate large areas of deep (>0.5m) flooding. These should be shown as Local Flood Risk Zones, unless there is evidence to suggest that the risk has been mitigated, for example by high capacity drainage or pumping infrastructure.	Site investigations and modelling	Areas with ponding >0.5m	High	-	-	-	Refine understanding in LFRZs	NCC and BCKLWN	Short	2011	5 years	I / F / D		NCC	FWM Team	BCKLWN	Environment Agency, Anglian Water	No	N/A	N/A	N/A	N/A	N/A	N/A
	31	Work with the IDB's and Anglian Water to mitigate the water quality impacts related to CSO surcharges	Joint investigation of mitigation solutions that have multiple benefits	Borough Wide	High	£10	TBC	TBC	Partnership working with others to achieve multiple benefits for local flood risk mitigation and river water quality improvement	NCC / EA / Anglian Water / EU	Short	2011	4months	FMA	EU funding may be available if significant water quality benefits can be achieved	NCC	FWM Team	EA and BCKLWN	Anglian Water and IDBs	No	Quarterly	2012	N/A	N/A	N/A	N/A
Underpass Risk Assessment	32	Carry out a flood risk assessment for the pumping station/drainage system which are located in major roads (e.g. A Roads)	This should include ascertaining the standard of protection currently provided and, if necessary, carrying out further investigation/ modelling to improve the level of understanding. Establish need for more detailed analysis and/or higher standard of protection.	Borough Wide	Low	-	-	-	Refine understanding of flood risk in underpass	NCC/Highways Agency	Medium	2011	6 months	I / F / D		NCC/BCKLWN	N/A	Highways Agency		No	Annually	2012	N/A	N/A	N/A	N/A
	33	Carry out a flood risk assessment for pedestrian underpasses and provide signage for those at risk of flooding.	Review of topography and model results to determine risk to users	Borough Wide	Low	-	-	-	Refine understanding of flood risk in pedestrian underpass	NCC/Highways Agency	Medium	2011	6 months	I / F / D		NCC/BCKLWN	N/A	Highways Agency		No	Annually	2012	N/A	N/A	N/A	N/A