Loughton, Buckhurst Hill and Theydon Bois Surface Water Management Plan - Action Plan

Version 1 Last Updated: 08 April 2016

***Priority:** Short = up to 2 years; Medium - up to 5 years; Ongoing = regular monitoring.
****Cost:** Low = £0 - £5000; Medium = £5001 - £10,000; High = £10,000+

SWMP Section	Action		Benefit	Priority	Implementation Timeframe	Action Owner(s)	Action Partner(s)	Cost**
	What?	How?						
Flood Mitigation - Critical Drainage Areas	Further investigate and verify that flooding incidents have occurred in CDAs and other areas identified as being at risk of flooding in the surface water flood risk maps produced as part of the SWMP.	Review flooding reports, then conduct survey of local residents (e.g. mail drop, door knocking) to update database	Validate model outputs, resident 'buy in'	High	Short-term	EFDC	ECC, LTC, Local Residents	Low
	Assess the flood risk and impacts associated with surface water flooding across the CDAs, and identify high priority CDAs for detailed study / refinement of measures to implement to mitigate surface water flooding.	After verifying historical flood risk, rank the CDAs to identify higher priority CDAs for detailed modelling and refinement of options. Undertake cost-benefit analysis and submit funding applications for flood mitigation schemes.	Reduction in the probability of flooding	High	Short - Medium term	ECC and EFDC	EA / TW	High
	Identify areas where the capacity of Thames Water's public sewer network can be increased to mitigate surface water flooding.	Use the surface water flood risk maps, in particular the depth maps for events less than the 1 in 30 year return event to identify areas where the sewer capacity is insufficient and assess feasibility of upgrading the network to increase capacity.	Medium-long term reduction in the consequences of flooding	High	Short - Medium term	TW	ECC / EFDC	Low
Flood Mitigation - Capital Works	A programme of capital works or activities required to implement the preferred mitigation option(s) should be developed. This is should contain short and longer term programmes of work (some of which may initially be aspirational pending agreement from individual partners' own investment programmes).	Develop programme of capital works and update it on a regular basis	Improved delivery of flood risk mitigation measures.	High	**Develop**: Short - Medium term **Maintain:** Ongoing	ECC	EA / EFDC / TW	Low
	Identify opportunities to coordinate capital works projects to incorporate flood risk mitigation options whilst reducing costs and minimising negative impacts of works.	Use programme of capital works and windfall sites / projects to coordinate implentation of flood risk mitigation measures across the LBT area. Project partners should meet regularly to discuss short / medium / long-term capital works projects and discuss if there area opportunities to undertake flood risk mitigation activities in parallel to achieve cost savings.	Improved delivery of flood risk mitigation measures.	Medium	Ongoing	ECC	ECC (Highways) / EFDC / TW / EA	Low
	Implement capital works projects as per the programme of capital works and undertake public sewer capacity improvements to address potential capacity issues identified in surface water flood depth maps.	Implement capital works programme	Medium-long term reduction in the probability and / or consequences of flooding	High	Ongoing	ECC and TW	ECC (Highways) / EFDC / EA	High

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Flood Mitigation - Maintenance	Ensure drainage systems are operating at capacity	Review existing gully clearance/ maintenance schedules and if necessary revise/prioritise based on surface water flooding predictions in this document	Flooding is not exacerbated	Medium	**Review**: Short - Medium term **Maintain:** Ongoing	ECC (Highways) and EFDC	TW	High
	Gully cleaning - improving 'visibility'	Clearly identify gullies prone to flooding (possibly painted yellow)	Improved maintenance regimes. May promote residents and ground sweeping teams to maintain them between events and cleaning regimes	Medium	Medium-term	EFDC	ECC (Highways)	High
	Clear blocked gullies	Focus attention on the maintenance of gully pots in the CDAs which are considered to be high risk and on those areas identified as being at risk from blocked gullies	Reduction in the probability of flooding	High	Short-term	EFDC	ECC (Highways)	High
	Ensure drainage systems are operating at capacity - maintenance of Thames Water sewers. Thames Water to recommend SWMP findings to Planned Maintenance Programme (PMP), if flooding identified as drainage serviceability issue.	Review existing maintenance schedules and if necessary revise/prioritise	Flooding is not exacerbated	High	**Review**: Short - Medium term **Maintain:** Ongoing	TW	ECC (Highways) / EFDC	High
	Maintain ditches and related infrastructure on Council-owned land and actively 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)	Flooding is not exacerbated	Medium	**Review**: Short - Medium term **Maintain:** Ongoing	EFDC	TW / EA	High
Flood Mitigation - Area Wide Policy	All planning applications relating to major development - developments of 10 dwellings or more; or equivalent non-residential or mixed development - must use Sustainable Drainage Systems (SuDS) for the management of surface water runoff, unless demonstrated to be inappropriate. Proposed developments should be required to include at least one 'at source' SuDS measure (e.g. green roof, rainwater harvesting and / or infiltrating SuDS practice). This is to assist in reducing the peak volume of runoff discharging from the site applications.	Development control review (plan review) and monitoring of policy implementation	Medium-long term reduction in flood risk and improvement in water quality	High	**Develop**: Short - Medium term **Maintain:** Ongoing	EFDC and ECC	TW / EA	Low
	Proposed 'brownfield' redevelopments of more than one property or area greater than 0.1 hectare should be 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 NPPF 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 (plan review) and monitoring of policy implementation	Medium-long term reduction in the probability of flooding	Medium	**Develop**: Short - Medium term **Maintain:** Ongoing	EFDC and ECC	TW / EA	Low

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	What?	How?						
Flood Mitigation - Area Wide Policy	Proposed development located in Critical Drainage Areas should be required to provide a betterment on runoff rate / volume to assist with mitigating increased surface water flood risk in the CDAs. It is recommended that a SuDS treatment train is utilised to assist in this reduction.	Requirement to provide a betterment on runoff rate / volume should be incorporated into the Local Plan. Development control review (plan review) and monitoring of policy implementation - Plan review should include a review of Critical Drainage Area (CDA) maps to determine if proposed development is located in CDA, and if so, then encourage provision of betterment of runoff rate / volume control over typical planning applications.	Medium-long term reduction in the probability of flooding	High	**Develop**: Medium term **Maintain:** Ongoing	EFDC and ECC	EA / ECC	Low
	Surface water flood risk maps produced for the SWMP should be used to ensure that surface water flood risk is given sufficient consideration when considering the suitability of a proposed development in compliance with NPPF. Surface water flood risk should be given sufficient consideration as part of a site-specific Flood Risk Assessment to ensure development will remain safe and will not increase risk to others. Where surface water flood risk is high and / or the proposed use is of increased vulnerability a Flood Risk Assessment should be supported by more detailed integrated hydraulic modelling.	Development control review and monitoring of policy implementation	Medium-long term reduction in the consequences of flooding	High	**Develop**: Short - Medium term **Maintain:** Ongoing	EFDC and ECC	TW / EA	Low
	Implement policy relating to Best management practises in relation to Water Quality and a reduction in pollutant lCDAds (investigate using the water quality computer software [MUSIC or similar])	Development control review and monitoring of policy implementation	Medium-long term reduction in the probability of flooding	Medium	**Develop**: Medium term **Maintain:** Ongoing	EFDC	EA / ECC	Low
	Identify and establish 'Urban Blue Corridors' (preferential overland flowpaths). This concept aims to manage the conveyance of surface water across an area of the catchment through the long term redesign of the urban landscape to create specific pathways to convey surface water.	Use SWMP maps to identify overland flowpaths and target the construction of mitigation measures to manage flows along these paths. Furthermore ensure that future development identifies existing flowpaths and provides space for these flows through the site and / or provides a betterment by mitigating these flows through the post-developed site.	Medium-long term reduction in the consequences of flooding	Low	**Develop**: Medium term **Maintain:** Ongoing	EFDC and ECC	ECC (Highways)	High
Flood Mitigation - Emergency Planning and Awareness	Review the emergency planning procedures in areas at risk from surface water flooding	Review depth and hazard model outputs with emegency planning teams	Ensure the safety of people and highlight where additional planning is required	High	Short-term	ECC and EFDC	Category 1 and 2 Responders	Low
	Raise community awareness of simple measures and systems that can be installed at their homes to manage local flooding	Produce information packs and distribute to the community highlighting the low cost and high benefits of rainwater harvesting and water-butts	Improved community awareness of flood risk and 'buy in' to being part of the solution	Medium	**Develop**: Medium term **Maintain:** Ongoing	ECC and EFDC	Category 1 and 2 Responders	Medium
	Communicate the risk of flooding and raise awareness within local communities	Prepare and communicate a summary of SWMP outcomes for use by the community	Improved community awareness of flood risk and 'buy in' to being part of the solution	Medium	**Develop**: Medium term **Maintain:** Ongoing	ECC and EFDC	Category 1 and 2 Responders	Medium

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	Engage Essex Highways 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	Understanding of local flood risk and potential impacts	Medium	Ongoing	ECC (Highways)	ECC / EFDC	Medium
Review and Update	Monitor Action Plan and delivery of actions by responsible parties.	Review Action Plan at Essex Flood Partnership Meetings	Ongoing awareness of actions and responsibilities to deliver them	Medium	Ongoing	ECC	EA / TW / EFDC	Low
	Update Action Plan following one or more of the trigger events occuring.	Review SWMP outputs against new information and revise Action Plan to suit	Action Plan is up to date and based on best available information	Medium	Ongoing	ECC	EA / TW / EFDC	Low