

MILTON KEYNES SURFACE WATER MANAGEMENT PLAN APRIL 2016 FINAL SWMP ACTION PLAN

	Action			Location			Cost		Potential		Timi	ing			Responsibility	у			Re	eview
ID	What?	How?	CDC ID	Where	Priority Ranking	Investigation/F easibility	Capital Other	Benefit	Funding Source	Timeframe	Start Date	Approx. Duration	Action Type	Lead Organisation	Dept.	Primary Support	Other Stakeholders	EU Related	Frequency	Next Review Date
Action 1	Incident Log to record and	Implement a standardised flood incident log to record flood events. Educate departments involved in filling in the spreadsheet to ensure everyone involved understands the log and the methodology. It is recommended that the source of flooding be recorded, e.g. gully surcharging, to inform maintenance priorities	All	Milton Keynes Borough	High		<£25k	Improved procedures and protocol for recording flood events and flood risk across the study area. Will provide improved historical flood information to support ongoing and future flood mitigation schemes.		Short		3 months	Flood and Water Management Act / Flood Risk Regulations	МКС	LLFA - Flood Investigation Officer		MKC Highways	Yes		N/A
Action 2	Flood Plans my be effective and consider opportunities to develop these, in conjunction with the local community	Identify where either options and measures are unlikely to significantly reduce flood depth or where options and measures are unlikely to be cost effective - these areas will need specific focus in terms of raising community awareness. The potential to develop a community flood plan should be discussed with the local community in these areas with the 'information portal' used to begin the process. See 'Borough Wide Options: Social Change, Education and Awareness' within the Main Report.	All	Communities identified to be at risk throughout the study area (i.e. within CDCs)	Medium	<£25k	Unknow	Increase awareness of flood risk in communities, therefore improving resilience to flooding and encouragement to implement property-level mitigation measures		Short		6 months	Communication / Partnerships	МКС		Local Residents	EA, AWS		Half Yearly	Dec-2016
Action 3	Land management - Increase urban vegetation coverage	Develop planting of trees and bushes along streets and car parks, potentially using bioretention systems. Incorporate this with policies relating to public spaces. This will additionally improve the ecological and amenity value of urban spaces. Councils should encourage residents to implement green space where possible.	All	Milton Keynes Borough	Low		Unknow	Ensure existing area of drainage / infiltration is maximised to ensure flooding is not exacerbated through compacted ground		Medium		12 months	Flooding Mitigation Action	мкс				No		Apr-2016
Action 4	Ongoing Improvements to the Maintenance of the Drainage Network - targeted maintenance of drainage network	Improved and targeted maintenance, i.e. within CDCs. Ensure guillies and ordinary watercourses in CDCs are targeted for cleaning and clearance at least once a year, prior to 'rainfall' season. Focus attention on the maintenance of gully pots in the identified CDCs which are considered to be high risk and on those areas identified as being at risk from blocked guillies. The introduction of of operational maintenance regimes for the aeration of sports grounds, school playing fields and football pitches to improve infiltration potential could also be introduced. The Council (along with partner organisations) must ensure adequate resources are in place to ensure effective maintenance.		Within CDCs	Medium		Unknown	Existing drainage systems are maximised and operating at full potential, to ensure flooding is not exacerbated through blocked or part-working networks		Medium		Ongoing	Flooding Mitigation Action	МКС	MKC Highways			No		Apr-2016
Action 5	Planning Policy - Formalisation of flood storage areas in Flood Zone 3b.	Formalise flood storage areas as Flood Zone 3b to ensure their existing function is not compromised by the planning and development process. Establish ownership and ensure that each flood storage area has its own management plan	All	Within CDCs	Medium		<£25k	Flood risk to properties and surrounding properties is not exacerbated through implementing development in flood storage areas and therefore losing flood storage capacity.		Medium		12 months	Policy Action	мкс	Development Control					
	Planning Policy - Runoff Rates from New Development	Councils should consider enforcing tighter restrictions on surface water discharge limits. Local Planning Policies could be created for development within CDCs to aim to reduce runoff rates should to a minimum level of 50% of existing runoff rates to alleviate flood risk created by the site.	All	Within CDCs	Medium		<£25k	Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces		Short		Ongoing	Policy Action	мкс	Development Control					
Action 7	Planning Policy - Use of SUDS	Update existing policies that state the use of SUDS within new development to highlight the preferred SUDS mechanisms used for the control of surface water runoff generated from the site. To facilitate this the Council must educate/train their staff to ensure that planning officers can deliver planning policy relating to SUDS effectively.	All	Milton Keynes Borough	Medium		<£25k	More influence on preferable use of SuDS for surface water management		Short		Ongoing	Policy Action	МКС	SuDS					Apr-2016
Action 8	Planning policy - Information on SUDS	Design and publish a SuDS Design and Adoption Guide.	All	Milton Keynes Borough	Medium		Unknow	Flood risk to properties and surrounding properties is not exacerbated through implementing SuDS techniques		Medium		Ongoing	Policy Action	MKC	SUDS		EA			
Action 9	Planning policy - Paved driveways	Provide a section in the SuDS Design and Adoption Guides that residents can consult for further information on permeable paving, including links to other organisations (e.g. EA) who can provide 'best practice' guidance and examples.	All	Milton Keynes Borough	Low		Unknow	Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces		Medium		Ongoing	Communication / Partnerships	MKC	SuDS		EA	No		
Action 10	Planning policy - Permeable surfaces	Councils could use the SuDS Design and Adoption Guide to o raise awareness of the options for installation and maintenance of permeable surfaces within property grounds.	All	Milton Keynes Borough	Low		Unknow	Flood risk to properties and surrounding properties is not exacerbated through implementing hardstanding, impermeable surfaces		Medium		Ongoing	Policy Action	MKC	SUDS		EA	No		
Action 11		Councils could explore the potential for installation of rainwater harvesting on new or regenerated development areas. In particular where there is a large footprint and high potential use.	All	Milton Keynes Borough	Low		Unknown	Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservatior impacts, and provides educational opportunities where systems are fitted to schools / public buildings		Medium		Ongoing	Flooding Mitigation Action	MKC	SUDS		EA			
Action 12	Water conservation - retrofitting rainwater harvesting	Investigate the feasibility of retrofitting rainwater harvesting systems to council owned buildings, such as schools and libraries.	All	Milton Keynes Borough	Low		Unknown	Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservatior impacts, and provides educational opportunities where systems are fitted to schools / public buildings		Medium		Ongoing	Flooding Mitigation Action	MKC	SUDS		EA			
Action 13	Water conservation - Water Butts in all new residential developments	Consider the installation of water butts in all new residential developments to provide source control and helps to meet sustainability goals. This can be enforced through planning policy	All	Milton Keynes Borough	High		Unknow	Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.		Medium		Ongoing	Flooding Mitigation Action	MKC	SUDS		EA			
Action 14	Water conservation - Water Butts in all existing residential developments	Consider retrolling water butts on all existing development. This provides supplementary benefits beyond regeneration and redevelopment sites (volumetric reduction with opportunity for complimentary water quality improvements).	All	Milton Keynes Borough	Low		Unknown	Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.		Medium		Ongoing	Flooding Mitigation Action	MKC	SUDS		EA			
	Water conservation - promotion of water butts	Consider promoting the use of water butts across the study area and provide information (either directly or through links to external websites) on potential costs, installation and benefits.	All	Milton Keynes Borough	Low		<£25k	Potential for localised reduction in peak surface water discharge during rainfall events. Is likely to have positive sustainability and water conservation impacts.		Medium		Ongoing	Flooding Mitigation Action	MKC	SUDS		EA			
Action 16	FDGiA funding for priority schemes	Put forward priority capital schemes for FDGiA funding	All	Milton Keynes Borough	High		<£25k	Potential for CDCs to receive funding to undergo further investigation or capital works to reduce flood risk		Short		6 months	Flooding Mitigation Action	МКС	LLFA					



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Action 17	Develop, update and maintain the draft Action Plan	Review and update the draft Action Plan in conjunction with MKC wide annual action plans.	All	Milton Keynes Borough	High			<£25k	Established procedure for managing and agreeing on future flood mitigation and management across the study area.		Short		Ongoing	Flood and Water Management Act / Flood Risk Regulations	мкс	LLFA		EA, AWS		Annually	Apr-2016





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Action MKC 21	Further investigation - CDC 1	Undertake further investigation of the preferred options, and alternative options across CDC 1 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 2, 3, and 4, are required.	CDC 1	Ravenstone	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 22	Infiltration SuDS to the north of Northend Farm and the northeast of Abbey Farm.	This is dependent on the outcome of Action MKC 1. Install swales in the open space north of Northend Farm and North West of Abbey Farm to capture surface water higher up in the catchment. Swales could be constructed up to 800m in length	CDC 1	North of Northend Farm and the northeast of Abbey Farm	Medium		£26k to £50k		Actions MKC 2 and 3 combined could reduce flood		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council		Landowners	EA	
Action MKC 23	Attenuation SuDS to the north of Northend Farm and the northeast of Abbey Farm (basins or bunded areas).	This is dependent on the outcome of Action MKC 1 and the feasibility of MKC 2. Modify the existing open space north of Northend Farm and North West of Abbey Farm to create a number of multifunctional flood storage basins or areas, designed to attenuate surface water runoff temporarily from extreme rainfall events. An combined area of storage up to approximately 69,000m3 could be constructed.	CDC 1	North of Northend Farm and the northwest of Abbey Farm	Low		>£1m		risk to 21 properties which have been modelled to be at risk of flooding of 0.15m or greater during the 3.3% AEP rainfall event.		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council		Landowners / residents	EA	
Action MKC 24	Land Management Practices - Perpendicular Ploughing of agricultural land	Where not already implemented, perpendicular ploughing could be applied across agricultural land to the north, east and west of Ravenstone. Other potential measures include the increased coverage of vegetation and hedge rows. This would slow down flow rates of surface water runoff and could assist in removing diffuse pollutants from runoff arising from agricultural practices.	CDC 1	Agricultural land to the north, east and west of Ravenstone	Low		Unknown		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		Ongoing	Flooding Mitigation Action	Milton Keynes Council		Landowners / residents		
Action MKC 25	Further investigation - CDC 4	Undertake further investigation of the preferred options, and alternative options across CDC 3 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 6, 7, 8 and 9, are required.	CDC 4	Woburn Sands CDC	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 26	Attenuation SuDS at Old Park Farm	This is dependent on the outcome of Action MKC 5. The installation of a bund or basin at Old Park Farm would intercept the surface water flow path which follows the ordinary watercourse within this CDC alleviating surface water flood risk to the large residential area of Quiller Meadow and Britten Grove. Up to 33,000m3 storage volume could be implemented.	CDC 4	Old Park Farm	Medium		£501k - £1m		Actions MKC 6 and 7 combined could reduce flood risk to 10 properties which have been modelled to be at risk of flooding of 0.15m or greater during		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 27	Attenuation SuDS southeast of Walton High School playing field.	This is dependent on the outcome of Action MKC 5. The south-eastern extent of Walton High School playing field may also be appropriate for attenuation features to alleviate floor risk to the south and east of Walnut Tree including Hockliffe Brae. An attenuation area of up to 55,000m3 system could be implemented.	CDC 4	Walton High School playing field.	Medium		>£1m		the 3.3% AEP rainfall event.		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 28	Watercourse clearance and increasing capacity at Cranfield Road through use of an oversized pipe.	This is dependent on the outcome of Action MKC 5. There are a number of ordinary watercourses and drainage board designated watercourses which could be suitable for clearance works within Woburn Sands. An oversized pipe along Cranfield Road could also help alleviate ponding around Turnpike Court.	CDC 4	Cranfield Road	High	ś	£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council		BGDB & AWS		
Action MKC 29	Land Management Practices - Perpendicular Ploughing of agricultural land	Where not already implemented, perpendicular ploughing could be applied across agricultural land ot the east of Woburn Sands. Other potential measures include the increased coverage of vegetation and hedge rows. This would slow down flow rates of surface water runoff and could assist in removing diffuse pollutants from runoff arising from agricultural practices.	CDC 4	East of Woburn Sands	Low			<£25k	Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		Ongoing	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 30	Further Investigation - CDC 6	Undertake further investigation of the preferred options, and alternative options across CDC 6 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 11,12, and 13, are required.	CDC 6	Downs Barn and Conniburrow	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		12 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 31	Attenuation SuDS at land south of Dansteed Way including land west of Capel Drive, land west of Overstreat and land west of the Grand Union Canal	This is dependent on the outcome of Action MKC 10. Construct three flood storage bunds on identified land west of Capel Drive, land west of Overstreet and land west of the Grand Union Canal. The bunds would restrict the flow of surface water leaving this area benefitting residential properties south of Danstead Way. The measures could provide a combined storage area of up to 37,000m.	CDC 6	land west of Capel Drive, land west of Overstreet and land west of the Grand Union Canal	Low		>£1m		This action could reduce flood risk to 36 properties which have been modelled to be at risk of flooding of 0.15m or greater during the 3.3% AEP rainfall event.		Medium		13 months	Flooding Mitigation Action	Milton Keynes Council		Landowners / residents		
Action MKC 32	Further Investigation - CDC 8	Undertake further investigation of the preferred options, and alternative options across CDC 8 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA, AWS and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 15, 16, 17 are required.	CDC 8	Newport Pagnell	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		14 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 33	Flood storage areas or basins implemented in fields at Portfield Combined Schools, Newport Pagnell Youth Club, Green Park School and Kingfisher Park	This is dependent on the outcome of Action MKC14. Re- landscape the playing fields so that they are able to create detention basins. The area identified could offer up to 62,000m2 of storage volume.	CDC 8	Portfield Combined Schools, Newport Pagnell Youth Club, Green Park School and Kingfisher Park	Medium		>£1m		Actions MKC 13 and 14 combined could reduce flood risk to 12 properties which have been modelled to be at risk of flooding of 0.15m or		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 34	Attenuation SuDS retrofitted across school parking areas.	This is dependent on the outcome of Action MKC14. Install tanked permeable paving or tanked geocellular storage in the school car parks to attenuate surface water runoff in these areas, an area of approximately 2875m2 could be implemented	CDC 8	Schools	Medium	5	£251k to £500k		modelled to be at risk of flooding of U.15m or greater during the 3.3% AEP rainfall event.		Medium			Flooding Mitigation Action	Milton Keynes Council				





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Action MKC 35	Improvement to Drainage infrastructure	This is dependent on the outcome of Action MKC 14. Increase the size of highway drains and surface water sewers in worst affected areas such as the High Street to	CDC 8	High Street	Medium	easibility	£101k to £250k	k		Source	Medium		12 months	Flooding Mitigation Action	Milton Keynes Council		7		
Action	Managing overland flows on Wolverton Road	improve conveyance away form properties. This is dependent on the outcome of Action MKC 14. Carry out kerb raising along Wolverton Road to channel	CDC 8	Wolverton Road	Medium		Unknown		Divert surface water away from properties to lower		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action	Implementing Flood gates at Little Linford Lane	surface water away from properties Install Flood gates at Little Linford Lane	CDC 8	Little Linford Lane	High		£3-5k		risk areas Reduce surface water flooding further downstream, and reduce surcharging of the sewer		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 38	Further Investigation - CDC 10	Undertake further investigation of the preferred options, and alternative options across CDC 10 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, and the EA. The outcome of this will determine whether or not actions MKC 21, 22, 23 or 24 are required.	CDC 10	Olney	High	<£25k			network. Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium			Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS	
Action MKC 39	Permeable paving in school car parks	Attenuation SuDS – Tanked permeable paving or tanked geocellular storage could be retrofitted across the vehicle parking areas at Olney Junior and Middle school	CDC 10	Olney Junior and Middle School	Medium		£501k to £1m		Actions MKC 19 and 20 combined could reduce flood risk to 23 properties which have been modelled to be at risk of flooding of 0.15m or		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 40	Bunds or basins in school green space	Attenuation SuDS – bunds or storage basins in the green space at three schools across Olney .	CDC 10	Olney Junior and Middle School	Medium		>£1m		greater during the 3.3% AEP rainfall event.		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 41	Infiltration SuDS	Infiltration SuDS at schools where feasible	CDC 10	Olney Junior and Middle School	Low		<£25k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 42	Increased capacity of drainage system	The surface water sewers and highway drains in the worst affected areas could be increased in size, most significantly in the High Street of the CDC. This could be coupled with increasing the maintenance of the existing guilles and installation of new guilles or channel drains to increase conveyance further.	CDC 10	High Street area	Medium		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 43	Further Investigation - CDC 11	Undertake further investigation of the preferred options, and alternative options across CDC 11 to determine the suitability, teasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 21, 22, 23 are required.	CDC 11	Brinklow	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 44	Attenuation SuDS (Tanked permeable paving or tanked granular storage) retrofitted across vehicle parking areas of Brinklow industrial estate and at the Kingston Centre.	This is dependent on the outcome of Action MKC 23. Tanked permeable paving or tanked geocellular storage could be retrofitted across the vehicle parking areas in Brinklow industrial estate and the Kingston Centre.	CDC 11	Brinklow Industrial Estate and Kingston Centre	Medium		>£1m		Actions MKC 24 and 25 could reduce the flood risk to 36 of the buildings currently modelled to be at risk of surface water flooding (0.15m depth from a		Medium		More than 12 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 45	Bunds or basins in school green space	This is dependent on the outcome of Action MKC 23 Attenuation SuDS could be implemented at Monkston Drive Primary School playing field A storage basin could provide up to 18,000m3 storage volume.	CDC 11	Monkston Primary School	Medium		£251k - £500k		3.3% AEP rainfall event).		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 46	Improvement to Drainage infrastructure	This is dependent on the outcome of Action MKC 23. Extra guillies in the road around the roundabout north of the Kingston Centre in Chippenham Drive could assist with conveying surface water flood flows away from the roundabout and into the surface water sewer.	CDC 11	Chippenham Drive	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 47	Further Investigation - CDC 12	Undertake further investigation of the preferred options, and alternative options across CDC 12 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 28,29 and 30 are required.	CDC 12	Medbourne / Crownhill	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 48	Detention Basin - Medbourne Community Sports Pavilion, Chalkdell Drive	This is depended on the outcome of Action MKC 27 Re- landscape the existing space at Medbourne Community Sports Pavilionand Chalkdell Drive and potentially Grange Farm to create detention basins. The area identified could offer approximately 120,000m3 of storage with a depth of 1m. Loughton Manor First School could also be considered for attenuation SuDS.	CDC 12	Medbourne Community Sports Pavilion, Chalkdell Drive	Medium		>£1m		Actions MKC 28 and 29 could reduce the flood risk to 114 of the buildings currently modelled to be at risk of surface water flooding (0.15m depth from a		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 49	Tanked permeable paving - Chalkdell Drive, other parking areas	This is depended on the outcome of Action MKC 27. Tanked permeable paving or tanked geocellular storage could also be retrofitted across the vehicle parking areas of Chalkdell Drive. An area up to 55,000m2 could be implemented	CDC 12	Chalkdell Drive, Medbourne Community Sports Pavilion and the schools across this CDC	Low		>£1m		3.3% AEP rainfall event).		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 50	Improvement to Drainage infrastructure	This is depended on the outcome of Action MKC 27. Upsizing the existing surface water sewer network in flood hotspots	CDC 12	Hotspots e.g. Loughton Roundabout	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 51	Further Investigation - CDC 13	Undertake further investigation of the preferred options, and alternative options across BAS 15 to determine the suitability, teasibility and function of each. This should be undertaken, where required, with the riparian owners, Mitton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 32 is required.	CDC 13	Wymbush / Two Mile	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
	Detention Basins - Golf Course and school fields	This is dependent on the outcome of Action MKC 31. Develop detention basins at the Golf Course to the west of the CDC and the school playing fields adjacent to Downland with an estimated storage capacity of up to 200,000m3	CDC 13	Golf Course and school fields	Medium		>£1m		This action could reduce the flood risk to 64 buildings currently modelled to be at risk of surface water flooding (0.15m depth from a 3.3% AEP rainfall event).		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 53	Further Investigation - CDC 14	Undertake further investigation of the preferred options, and alternative options across CDC 14 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 32 is required.	CDC 14	Bradwell Abbey	High	<£25k	<£25k		Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium			Investigation / Feasibility / Design				EA, AWS, BGDB	





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Action MKC 54	Bund / flow restriction - Bradwell Abbey golf course	This is dependent on the outcomes of Action MKC 33. Relandscaping and construction of bunds could be implemented at Bradwell Abbey golf course opposite Dahina and Kildonan Place, the northern extent of Bradwell Abbey cricket field. Approximately 300m3 of embankment could be implemented.	CDC 14	Golf course and cricket field	Medium		>£1m		This action could reduce the flood risk to 83 buildings currently modelled to be at risk of surface water flooding (0.15m depth from a 3.3% AEP rainfall event).		Medium		12 months	Flooding Mitigation Action	Milton Keynes Council		Landowners / residents		
Action MKC 55	Improvement to Drainage infrastructure	This is dependent on the outcomes of Action MKC 33. Upsizing the existing surface water sewer network in flood hotspots, such as White Alder, possibly in conjunction with increasing the number of gullies or installing channel drains which outfall into upsized sewers	CDC 14	Hotspots e.g. White Alder	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
		This is dependent on the outcome of Action MKC 33. There is the potential for raising the kerb heights of highway networks which are shown to at a high risk of surface water flooding, particular in residential areas such as White Alder which has low kerbs.	CDC 14	White Alder	Medium		<£25k		Divert surface water away from properties to lower risk areas		Medium		6 months	Flooding Mitigation Action	Milton Keynes Council				
Action MKC 57	Further Investigation - CDC 15	Further Investigation is needed of the interactions between the drainage ditches, ordinary watercourses and the main river which flow within the CDA. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 37, 38, 39 and 40 are required.	CDC 15	Stony Stratford	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS,BGDB	
Action MKC 58	Tanked permeable paving - School parking areas	This is depended on the outcome of Action MKC 37. Tanked permeable paving or tanked geocellular storage could also be retrofitted across the vehicle parking areas of the school. An area up to 500m2 could be implemented	CDC 15	School parking areas	Medium		£51k to £100k		Actions MKC 38 and 39 could reduce the flood risk to 11 of the buildings currently modelled to be at		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 59	Attenuation Basin - between Latimer and Milford Avenue	This is depended on the outcome of Action MKC 37. Develop a detention basin across the green space between the residential areas of Latimer and Millford Avenue with an estimated storage capacity of up lo11,500m3	CDC 15	Green space between Latimer and Milford Avenue	Medium		£251k - £500k		risk of surface water flooding (0.15m depth from a 3.3% AEP rainfall event).		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 60	Permeable paving - Vicarage Road	This is depended on the outcome of Action MKC 37. Further attenuation through permeable paving could be implemented at the vehicle parking area of Vicarage Road with an area of up to 4000m2	CDC 15	Vicarage Road	Medium		£501k to £1m		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Flooding Mitigation Action	Milton Keynes Council				
Action MKC 61	Further Investigation - CDC 17	Further Investigation is needed of the interactions between the drainage ditches, ordinary watercourses and the main river which flow within the CDA. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 41,42 and 43 are required.	CDC 17	Oldbrook	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 62	Tanked permeable paving - parking area at Winterhill Retail Park	This is depended on the outcome of Action MKC 41. Tanked permeable paving or tanked geocellular storage could also be retrofitted across the vehicle parking areas at Winterhill Retail Park. An area up to 500m2 could be implemented	CDC 17	Winterhill Retail Park	Medium		>£1m		Actions MKC 42 and 43 could reduce the flood risk to 135 of the buildings currently modelled to be at risk of surface water flooding (0.15m depth from a		Medium			Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 63	Attenuation Basin - Jubilee School playing field	This is depended on the outcome of Action MKC 41. Develop a detention basin at the Jubilee Primary School field with an estimated storage capacity of up to15,500m3	CDC 17	Jubilee Primary School	Medium		£251k - £500k		3.3% AEP rainfall event).		Medium			Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 64	Improvement to Drainage infrastructure	This is dependent on the outcomes of Action MKC 41. Upsizing the existing surface water sewer network in flood hotspots, possibly in conjunction with increasing the number of gullies or installing channel drains which outfall into upsized sewers.	CDC 17	Areas around Oldbrook Cricket Ground	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 65	Further Investigation - CDC 19	Undertake further investigation of the preferred options across CDC 19 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 45,46 and 47 are required.	CDC 19	Bradwell	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
Action MKC 66	and schools	This is dependent on the outcomes of Action MKC 45. Tanked permeable paving or tanked geocellular storage could also be retrofitted across the vehicle parking areas at Braille Industrial Estate, Stanton School, Pepper Hill School and the industrial estate surrounding Fingle Drive. An area of up to 16,000m2 could be implemented	CDC 19	Bradville Industrial Estate and schools			>£1m		Actions MKC 46 and 47 could reduce the flood risk to 102 of the buildings currently modelled to be at risk of surface water flooding (0.15m depth from a		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 67	Attenuation Basin - school green spaces	This is dependent on the outcomes of Action MKC 45. Develop detention basins in the green spaces at Stanton School and Pepper Hill School The areas identified could offer approximately 20,000m3 of storage with a depth of 1m.	CDC 19	Stanton School, Pepper Hill School	Medium		£251k - £500k		3.3% AEP rainfall event).		Medium		12 months	Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 68	Improvement to Drainage infrastructure	This is dependent on the outcomes of Action MKC 45. Upsizing the existing surface water sewer network in flood hotspots, possibly in conjunction with increasing the number of guillies or installing channel drains which outfall into upsized sewers.	CDC 19	Hotspots e.g. Junction between Monks Way and Grafton Street	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium			Investigation / Feasibility / Design	Milton Keynes Council				
Action MKC 69	Further Investigation - CDC 20	Undertake further investigation of the preferred options across CDC 20 to determine the suitability, feasibility and function of each. This should be undertaken, where required, with the riparian owners, Milton Keynes Council, the EA and the Bedford group of Drainage Boards. The outcome of this will determine whether or not actions MKC 48 and 49 are required.	CDC 20	West Bletchley	High	<£25k			Provide a clearer understanding of potential options before further funding is invested in the design and implementation of capital schemes.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council			EA, AWS, BGDB	
	Detention basins - green spaces and school fields	This is dependent on the outcomes of Action MKC 49. Develop detention basins in the green spaces at Oxley Park Academy, Howe Park wood, Green space next to Sneshall West Industrial Estate, Windmill Hill Golf course, Chestnuts School, St. Thomas Aquinas Catholic Primary School and Barleyhurst park Primary School. The areas identified could offer approximately 170,000m3 of storage with a depth of 1m.	CDC 20	Greens spaces and schools across CDC	Medium		>£1m		This action could reduce the flood risk to 175 of the buildings currently modelled to be at risk of surface water flooding (0.15m depth from a 3.3% AEP rainfall event).		Medium		More than 12 months	Investigation / Feasibility / Design	Milton Keynes Council				



MILTON KEYNES SURFACE WATER MANAGEMENT PLAN APRIL 2016 FINAL SWMP ACTION PLAN



	Action		Lo	ocation			Cost			Potential		Timir	ng			Responsibility	1		
ID	What?	How?	CDC ID	Where	Priority Ranking	Investigation/F easibility	Capital	Other	Benefit	Funding	Timeframe	Start Date	Approx. Duration	Action Type	Lead Organisation	Dept.	Primary Support	Other Stakeholders	EU Related
	Improvement to Drainage infrastructure	This is dependent on the outcomes of Action MKC 49. Upsizing the existing surface water sewer network in flood hotspots, possibly in conjunction with increasing the number of guillies or installing channel drains which outfall into upsized sewers.	CDC 20	Hotspots across CDC	Low		£101k to £250k		Reduce surface water flooding further downstream, and reduce surcharging of the sewer network.		Medium		6 months	Investigation / Feasibility / Design	Milton Keynes Council				