

# Appendix E – Options

## Generic Source, Pathway and Receptor Options Available

Measure	Main benefits
<b>Source Type</b>	
Green Roofs	Counteract effects of climate change on surface water flood risk
Soakaways	Indirectly reduce surcharge in sewers * and recharge the water table
Swales	Improve water quality, recharge the water table and provide some flow attenuation
Permeable paving	Indirectly reduce surcharge in sewers * and recharge the water table (if not sealed at the bottom)
Rainwater harvesting	Reduce mains water supply and indirectly reduce surcharge in sewers * however to a lesser extent than flow attenuation systems
Detention basins	Attenuate flows and reduce surcharge in sewers *
Ponds and wetlands	Attenuate flows, reduce surcharge in sewers * and improve water quality
Partial or full disconnection of roof runoff from sewer system (combined with rainwater harvesting, garden flooding, infiltration or filling of ponds)	Reduce surcharge in sewers * and in most cases they recharge the water table

Measure	Main benefits
<b>Pathway Type</b>	
Increased capacity in drainage systems	Locally reduce flood risk however could increase downstream flood risk
Separation of foul and surface water sewers	Reduces health and safety risk originating from combined systems surcharging (with a foul component)
Improved maintenance regimes	Reduced localised flood risk
Managing overland flows in the form of sacrificial flooding of car parks, open spaces and other compatible land uses	Reduce sewer surcharges * and in some cases downstream overland flooding
Managing overland flows in the form of new pipes through embankments to reduce deep flooding behind embankments	Reduce the potential risk of loss of life if deep flooding is anticipated
<b>Receptor Type</b>	
Improved weather warning	Reduces the potential damage to property
Planning policies to influence	Avoid increasing flood risk elsewhere and ensure the safety of developments. They can also contribute to a wider campaign of

development	reducing overall flood risk in a large area.
Temporary or demountable flood defences	Provide the necessary function of flood defences without the need to have permanent structures
Social change, education and awareness	Could contribute towards reducing the significant flood risk originating from the blockage or failure of drainage infrastructure
Improved resilience measures	Assist in restoring normal conditions quickly and reduce flood damages
Improved resistance measures	Prevent flooding inside property
Evacuation plans	Reduce the risk of loss of life at locations where the flood hazard is high
Emergency Planning	Reduce flood damages (critical infrastructure, roads, property, people, etc)

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\* The reduction of sewer surcharges translates into reducing flood risk at those locations where surcharged sewers result in flooding of property.