

**APPENDIX C - Leeds Local Flood Risk Management Strategy - List of Measures**

ID	Priority	Scheduled Completion Date	Measure	PF % Score	Location (if applicable)	Category	Relevant Objective from LFRMS	Progress/Comments (reference other sources of information)	Benefits/ Outcome	Costs/ Resource Implications	Lead Organisation	Support Organisation	Measure Owner	Last Updated
<b>SCHEMES &amp; FEASIBILITY STUDIES</b>														
S1	Design Stage	2014	Lowther Road, Garforth - Culvert Improvements	121.3%	Garforth	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Restricted culvert, bypass culvert proposed - Scheme has been scoped and detailed design completed. Will go out to tender shortly.	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S2	Design Stage	2014	Ramsden Street, Kippax, Flood Alleviation Scheme - (Local Levy)	100.0%	Kippax	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme has been scoped and detailed design of setback flood wall and embankment is progressing.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S3	Design Stage	2016	Leeds City Flood Alleviation Scheme, River Aire	100.0%	River Aire - Newlay to Woodlesford	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	The approved Upper Aire Strategy considered many options for the protection of Leeds City, the economic centre of the region. The Leeds FAS developed a comprehensive scheme for the River Aire and Hol Beck in Leeds to PAR stage, which was approved by the EA Board in late 2010. However, due to the value of the scheme this was considered to be unaffordable. The Secretary of State provided an assurance that more resource could be made available to explore possible alternatives, including lesser solutions and alternative sources of funding. Work is underway on exploring alternatives so that Leeds CC and their elected members can decide which option to proceed with, and how the additional funding might be found.	Reduce flood risk from River Aire	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Highways Design	20/08/13
S4	HIGH (1)	2014	Wellhouse Drive Flood Alleviation Scheme	114.0%	Gledhow	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Constrained Channel, Channel Improvements.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S5	HIGH (2)	2014	Barnsdale Road Property Level Protection Scheme	114.0%	Allerton Bywater	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Surface water flooding to properties. Install property level protection measures - flood barriers and doors to reduce flood risk to residential properties on Barnsdale Road.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S6	HIGH (3)	2015	Victoria Place Flood Alleviation Scheme	138.0%	Mickletown	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Flooding to residential land. Construct flood embankment and install pumping station to remove accumulated surface water.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S7	HIGH (4)	2015	Culvert Headwall Repair Scheme - (Local Levy)	113.5%	Otley	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Urgent works to repair collapsing culvert. Clear debris from channel and rebuild headwall. LCC have already undertaken emergency works.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S8	HIGH (5)	2015	Cotton Mill Beck Culvert Replacement, Valley Road	139.0%	Morley	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Culverted watercourse surcharges causing flooding to Morley Rail Station and the Transpennine railway - scheme being scoped.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S9	HIGH (6)	2016	Mickletown set back flood defences	107.0%	Mickletown	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Lower Aire Strategy. Managed Retreat.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S10	MEDIUM	2015	Thorner Beck Flood Alleviation Scheme	101.0%	Thorner	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Restricted capacity of existing culverts causing overland flooding. Improve Culvert capacity.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S11	MEDIUM	2016	Victoria Road Surface Water Flood Alleviation Scheme	100.0%	Guiseley	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Surface water flooding to properties. Install attenuation and pumping station to remove flood water to adjacent culverted watercourse.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S12	MEDIUM	2017	Potternewton Surface Water Flood Alleviation Scheme	152.8%	Potternewton	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Surface water flooding. Install attenuation and pumping station to remove flood water to adjacent culverted watercourse.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S13	LOW	2016	Wakefield Road Flood Alleviation Scheme	72.0%	Garforth	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Restricted culvert and surface water flow. Install new culvert and widen highway ditch.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13
S14	LOW	2018	Carry out flood warning feasibility studies for Wortley Beck and Meanwood Beck and implement findings.	TBC	Wortley Beck and Meanwood Beck	1. Flood awareness, response and recovery	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	This measure is listed in the Aire CFMP for the Leeds Policy Unit - to be progressed by 2015.	Establish the potential for advanced warning of flooding. Develop more accurate flood warnings for tributaries of the River Aire which will result in reduction of economic damages and improve community safety.	EA staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	20/08/13
S15	LOW	2019	Wyke Beck Flood Alleviation Scheme	TBC	Halton Moor	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Flooding to residential area from Wyke Beck. Work in partnership with the EA to complete a fluvial flood alleviation scheme to improve the standard of flood protection along Wyke Beck. This measure is listed in the Aire CFMP for the Leeds Policy Unit - to be progressed by 2015.	The risk of flooding will be managed	Staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	20/08/13
S16	LOW	2019	Farnley Wood Beck Flood Alleviation Scheme	TBC	Cottingley	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Flood risk to residential areas, long term issue - scheme being scoped	Reduce flood risk from Farnley Wood Beck	Staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	20/08/13
S17	LOW	2019	Wortley Beck Flood Alleviation Scheme	TBC	Wortley Beck	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Flooding to residential area and outer ring road. Work in partnership with the EA to develop a detailed flood alleviation scheme that integrates with all sources of flooding. This measure is listed in the Aire CFMP for the Leeds Policy Unit - to be progressed by 2015.	The risk of flooding will be reduced from all sources and take into account the implications of climate change.	Staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	20/08/13
S18	LOW	2020	Sheepsca: evaluate the condition of formal and informal flood defences along the Sheepsca Beck which were recently breached to identify potential remedial works required.	TBC	Sheepsca	4. Asset management and maintenance	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Evaluate flood defence improvement works required.	Helps ensure that problems or new works are identified to prevent recurrence of flooding.	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	20/08/13

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<b>SCHEMES &amp; FEASIBILITY STUDIES (Cont)</b>														
S19	LOW	2020	Develop and implement feasibility studies for fluvial flood alleviation schemes to improve the standard of protection along Meanwood Beck, Bagley Beck and Farnley Wood Beck - integrating with all sources of flooding.	TBC	Meanwood Beck, Bagley Beck & Farnley Wood Beck	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	This measure is listed in the Aire CFMP for the Leeds Policy Unit - to be progressed by 2030.	Helps ensure that areas with proven flood risk are provided with an appropriate flood defence scheme at the earliest possible opportunity and that the Council supports the EA in developing any flood alleviation scheme in the longer-term.	Staff time and capital resource	Environment Agency	Leeds City Council & Yorkshire Water Services	Environment Agency	20/08/13
S20	LOW	2020	Investigate the interaction between the Leeds and Liverpool Canal and the River Aire.	TBC	River Aire and Liverpool Canal	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	This study should identify the potential for managing this interaction to ensure that flood risk is managed effectively. This measure is listed in the Aire CFMP for the Leeds Policy Unit - to be progressed by 2030.	Investigate this relationship to improve knowledge of the risk of flooding posed by the Leeds & Liverpool canal	EA staff time and capital resource	Environment Agency	Canal & River Trust	Environment Agency	20/08/13
S21	?	?	LCC Significant Maintenance	TBC	TBC	4. Asset management and maintenance	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	TBC	TBC	Staff time and capital resource	Leeds City Council	Yorkshire Water Services & Environment Agency	LCC Flood Risk Management	20/08/13
<b>COMPLETED SCHEMES AND FEASIBILITY STUDIES - SINCE 2011</b>														
S22	Completed	2011	Flood Alleviation Scheme - Leeds Road (Allerton Bywater) pumping station (local levy)		Allerton Bywater	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/07/12
S23	Completed	2011	Newton Road property protection and resilience scheme		Newton Road, Potternewton	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme Installed	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/07/12
S24	Completed	2011	Lower Wortley - property protection and resilience scheme		Lower Wortley	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme Installed	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/07/12
S25	Completed	2011	Church Lane, Bardsey - property protection and resilience scheme		Bardsey	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme Installed	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/07/12
S26	Completed	2011	Dean Park Drive, Drighlington - property protection and resilience scheme		Drighlington	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Scheme Installed	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/07/12
S27	Completed	2012	Barley Hill Recreation Ground - (Local Levy)	N/A	West Garforth	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Construction Stage	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Parks and Countryside	05/07/13
S28	Completed	2013	Oakdene, Watercourse Improvements	21%	Swillington	3. Studies, schemes, assessments and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of affordable, high quality measures to alleviate flooding where practicable.	Surface water runoff causing flooding. Improve culverts and widen ditches to reduce risk of flooding.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	05/07/13