

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	
SCHEMES & FEASIBILITY STUDIES															
1	S5	Construction	2016		Barnsdale Road Property Level Protection Scheme	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. Funding has now been made available from Local Levy and LCC	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
2	S32	Construction	2016		Hawthorn Terrace Flood Alleviation Scheme	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.	Outline scheme design has been completed and local levy funding secured to progress the detailed design and construction.	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
3	S33	Design/ Construction	2016		Improvements to surface water drainage outfalls	City wide	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.	Identify improvements to improve discharge of surface water from flooding hot spots	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	YWA	LCC Flood Risk Management	01/03/16
4	S34	Design/ Construction	2016		Glebelands Recreation Ground	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.	Surface water storage at the head of the Lin Dyke watercourse. Planning approval granted. LCC capital funding secured	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Parks and Countryside	01/03/16
5	S35	Design	2016		Westfields, Allerton Bywater	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.	Existing culvert hasn't sufficient capacity for storm events	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
6	S36	Design	2016		Barley Hill Recreation Ground (Phase 2)	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.	Provide surface water storage at a tributary to the Lin Dyke watercourse	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Parks and Countryside	01/03/16
7	S30	Feasibility	2016		Wyke Beck Catchment Assessment	Communities along Wyke 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.	Continuation of work carried out by both LCC & EA within the Dunhills	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
8	S31	Feasibility	2016		Lin Dyke Catchment Assessment	Kippax & 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.	Continuation of work included in Section 19 Report, regarding flooding of the SE Leeds area in August 2014	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
9	S3	Construction	2017		Leeds Flood Alleviation Scheme Phase 1, River Aire City Centre	River Aire - City Centre	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.	Phase 1 of the Leeds FAS is underway, this covers the central section of the River Aire where it passes through the City. Initial works have been completed in Woodlesford and the main works are due to complete during Summer 2017	Reduce flood risk from River Aire	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Highways Design	01/03/16
10	S6	Design	2017		Mickleton (Pit Lane) Flood Embankment	Mickleton	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.	Assessment of a proposed setback bank is being Carried out, funding from FCRM GIA and Developer Contribution. Being taken forward separately from larger scheme - Lower Mickleton Road Flood Embankment.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
11	S13	Design	2017		Wakefield Road Flood Alleviation Scheme	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.	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	01/03/16
12	S29	Design	2018		Queen Street Culvert	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.	Outline design completed. Japanese knotweed treatment taking place	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
13	S37	Feasibility	2018		Leeds Flood Alleviation Scheme Phase 2, River Aire Kirkstall	River Aire - City Centre to Newlay Bridge	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.	Phase 2 of the Leeds FAS City Centre to Newlay Bridge	Reduce flood risk from River Aire	Staff time and capital resource	Environment Agency	Leeds City Council	LCC Flood Risk Management	01/03/16
14	S9	HIGH (3)	2017	138.0%	Lower Mickleton Road Flood Embankment	Mickleton	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 of larger flood embankment along Lower Mickleton Road to protect properties from flooding. Being taken forward separately from Mickleton (Pit Lane) Flood Embankment as is substantially larger scheme.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
15	S38	HIGH (3)	2017		Otley Flood Alleviation Study	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.	Solutions development to protect 50 properties from flooding	Reduce risk of flooding	Staff time and capital resource	Environment Agency	Leeds City Council	LCC Flood Risk Management	01/03/16
16	S8	HIGH (3)	2017	139.0%	Cotton Mill Beck Culvert, Valley Road	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. Repairs not feasible replacement culvert required	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/16
17	S10	MEDIUM	2018	101.0%	Thorner Beck Flood Alleviation Scheme	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	01/03/16
18	S11	MEDIUM	2018	100.0%	Victoria Road Surface Water Flood Alleviation Scheme	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	01/03/16
19	S12	MEDIUM	2018	152.8%	Potternewton Surface Water Flood Alleviation Scheme	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	01/03/16
20	S14	LOW	2019	TBC	Carry out flood warning feasibility studies for Wortley Beck and Meanwood Beck and implement findings.	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 Catchment Flood Management Plan	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
21	S15	LOW	2019	TBC	Wyke Beck Flood Alleviation Scheme	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 Catchment Flood Management Plan	The risk of flooding will be managed	Staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	04/08/15
22	S16	LOW	2019	TBC	Farnley Wood Beck Flood Alleviation Scheme	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
23	S17	LOW	2019	TBC	Wortley Beck Flood Alleviation Scheme	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
24	S18	LOW	2020	TBC	Sheepsca: evaluate the condition of formal and informal flood defences along the Sheepsca Beck which were recently breached to identify potential remedial works required.	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
25	S19	LOW	2020	TBC	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.	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 Catchment Flood Management Plan 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
26	S20	LOW	2020	TBC	Investigate the interaction between the Leeds and Liverpool Canal and the River Aire.	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
27	S21	Ongoing			LCC Significant Maintenance	Across the District	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.	Continuation of regular maintenance of Watercourses and Hot Spots.	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Yorkshire Water Services & Environment Agency	LCC Flood Risk Management	27/04/16

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COMPLETED SCHEMES AND FEASIBILITY STUDIES - SINCE 2011															
1	S2	Completed	2015	Ramsden Street, Kippax, Flood Alleviation Scheme - (Local Levy & FDGiA)	105.0%	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 Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	04/08/15
2	S1	Completed	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.	Scheme Completed	Improve flood resistance and resilience of properties	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	27/01/15
3	S4	Completed	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.	Scheme Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	27/01/15
4	S7	Completed	2014	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.	Scheme Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	27/01/15
5	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.	Scheme Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	05/07/13
6	S27	Completed	2012	Barley Hill Recreation Ground - (Local Levy)		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.	Scheme Completed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Parks and Countryside	05/07/13
7	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
8	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
9	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
10	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
11	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