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

ID		Scheduled phase Completion Date	Measure	PF % Score	Whole Scheme Estimated Cost	Location (if applicable)	Category	Relevant Objective from LFRMS	Progress/Comments (reference other sources of information)	Benefits/ Outcome	Costs/ Resource Implications		Support Organisation	Measure Owner	Last Updated
2 S37	SCHEMES & F	2018	DIES Leeds Flood Alleviation Scheme Phase 2, River Aire City Centre to Upper Catchment	твс	£112m	River Aire - City Centre to Upper Catchment	3. Studies, schemes, assessments and plans	 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, looking at solutions across the whole catchment upstream of Leeds that will reduce flood risk to the only along the new Aire. Modelling and feasibility work largely complete, Quillee Business Case submitted to the EV and Treasury. Jan 2018. Moving in to more defailed design in 2018 will work uconstruction starting late 2018 and/2019, advanced works have taken place on some guick win' items and works at Stourton about to start as is a programme of advanced ministenance and stexardation.	Reduce flood risk from River Aire	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £112m
3 S5	Design - On Hold	2017	Barnsdale Road Property Level Protection Scheme	TBC	твс	Allerton Bywater	3. Studies, schemes, assessments and plans	 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 manufactors in a surface of the service of	ly Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018
4 S32	Design/ Construction	2018	Hawthorn Terrace Flood Alleviation Scheme	твс	TBC	West Garforth	3. Studies, schemes, assessments and plans	 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. 	Initial scheme completed, but further defects with existing assets and connected infrastructure identified so further works needed and being designed	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018
5 S33	Design/ Construction	2018	Improvements to surface water drainage outfalls	N/A	TBC	City wide	4. Asset management and maintenance	 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 improvments to improve discharge of surface water from flooding hot spots, work programme ongoing	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	YWA	LCC Flood Risk Management	01/03/2018
6 S31	Feasibility	2018	Lin Dyke Catchment Assessment - Upper and Middle catchments	твс	£1.25m	Garforth & Kippax	3. Studies, schemes, assessments and plans	 Improve understanding of local flood risk and seek to decrease local flood risk through implementation of alfordable, 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 and 2015, design works are contuining to be progressed as schemes are identified	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £1.25m
9 S13	Design	2018	Wakefield Road Flood Alleviation Scheme	102.0%	£190k	West Garforth	3. Studies, schemes, assessments and plans	 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, design being reviewed in line with the findings from the Lin Dyke study as per the above line	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £190k
11 S30	Feasibility	2018	Wyke Beck Catchment Assessment	n/a	£50k (study)	Communities along Wyke Beck	3. Studies, schemes, assessments and plans	 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, this has now progressed in to a catchment wide approach bringing together the EA and many departments across LCC, resulting in an initial stage bid to the LEP for ESI funding to complete various schemes including Killingbeck meadows.	Reduced risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £50k (study)
12 S15	Feasibility	2018	Killingbeck Meadows Flood Alleviation Scheme	твс	£1.6m	Halton Moor	3. Studies, schemes, assessments and plans	 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. 	Flooring to residentia and commercial areas from wyke teack. Accelerated science due to comoning the benefits or releasing development sites (11 housing sites and and within the Enterprise Zone and providing green infrastructure improvements to a Local Nature reserve as well as providing flood risk reduction, this scheme should receive planning permission in March 2016 and become a registered flood storage area under the Reservoirs Act. This forms part of a join Wyke Beck Programme delivering housing growth from Brownfield land and Local Nature reserve and green space	t The risk of flooding will be managed	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £1.6m
13 S6	Design	2018	Mickletown (Pit Lane) Flood Embankment	153.0%	£400k	Mickletown	3. Studies, schemes, assessments and plans	 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. 	improvements. Assessment of a proposed setback bank is being Carried out, funding from FCRM GIA and Developer Contribution. Bein taken forward separatley from larger scheme - Lower Mickletown Road Flood Embankment, relies on much delayed Lower Aire Modelling work now being reviewed by LCC consultants.	g Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £400k
14 S9	Feasibility	2018	Lower Mickletown Road Flood Embankment	138.0%	£1.1m	Mickletown	3. Studies, schemes, assessments and plans	 Improve understanding of local flood risk and seek to decrease local flood risk through implementation of alfordable, high quality measures to alleviate flooding where practicable. 	Construction of larger flood embankment along Lower Mickletown Road to protect properties from flooding. Being taken forward separately from Mickletown (Pit Lane) Flood Embankment as is substantially larger scheme. New model information only recently developed scheme proposal to be assessed in line with that	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £1.1m
15 S29	Design/ construction	2018	Queen Street Culvert	N/A	TBC	Allerton Bywater	3. Studies, schemes, assessments and plans	 Improve understanding of local flood risk and seek to decrease local flood risk through implementation of alfordable, high quality measures to alleviate flooding where practicable. 	Outline design completed. Japanese knotweed treatment taking place this is a 3 year programme due to complete in 2011	B Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018
16 S17	Feasibility	2018	Wortley Beck Flood Alleviation Scheme	111.0%	£1.1m	Wortley Beck	3. Studies, schemes, assessments and plans	 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 and YWS to develop a detailed flood alleviation scheme that integrates with all sources of flooding. This measure is listed in the Aire Catchment Flood Risk Management Plan.	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £1.1m
17 S38	Feasibility	2018	Otley Flood Alleviation Scheme	твс	£2m	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.	Initial £90k studied greatly extenbded to develop full Otley FAS to be constructed by December 2020, currently assessing shortlisted options to identify solutions to protect 58 properties from flooding, funding announced in the Autumn Statemer 2016 linked to wider catchment partnership work and Wharledale Flooded communities study	nt Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £2m
18 S39	Feasibility	2018	Wharfedale Flooded Communities Study	n/a	£90k	Collingham, Linton, Wetherby, Thorp Arch	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.	Llinked to wider catchment partnership work and Otley Flood Allevation Study, initial modelling work currently being assessed	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £90k
20 S10	MEDIUM	2019	Thorner Beck Flood Alleviation Scheme	101.0%	£150k	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. Local levy funding secured	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £150k
21 S11	MEDIUM	2019	Victoria Road Surface Water Flood Alleviation Scheme	100.0%	£250k	Guiseley	3. Studies, schemes, assessments and plans	 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	01/03/2018 £250k
22 S12	MEDIUM	2019	Potternewton Surface Water Flood Alleviation Scheme	152.8%	£250k	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. Local levy funding secured	Reduce risk of flooding	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £250k
23 S16	MEDIUM	2019	Farnley Wood Beck Flood Alleviation Scheme	104.0%	£500k	Cottingley	3. Studies, schemes, assessments and plans	 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, developer contribution secured, this scheme is now been progressed as part of the wider Wortley Beck study	Reduce flood risk from Famley Wood Beck	Staff time and capital resource	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £500k
25 S18	LOW	2020	Sheepscar: evaluate the condition of formal and informal flood defences along the Sheepscar Beck which were recently breached to identify potential remedial works required.	TBC		Sheepscar	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	01/03/2018
26 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 Catchment Flood Risk 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	01/03/2018
27 S21	Ongoing	-	LCC Significant Maintenance	-		Across the District	4. Asset management and maintenance	 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 revenue resource	Leeds City Council	Yorkshire Water Services & Environment Agency	LCC Flood Risk Management	01/03/2018
24 S14		CHEMES AND F	EASIBILITY STUDIES - SINCE 2011 Carry out flood warning feasibility studies for Wortley Beck and Meanwood Beck and implement findings.	d n/a	£10k	Wortley Beck and Meanwood		6. Improve understanding of local flood risk and seek to decrease local flood risk through interface of off and by both available memory to allocide flooding where excellenges	This measure is listed in the Aire Catchment Flood Risk 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	EA staff time and capital resource	Environment Agency	Leeds City Council	Environment Agency	01/03/2018 £10k
1 S3	Completed	2017	Leeds Flood Alleviation Scheme Phase 1, River Aire City Centre	100.0%	£50m	River Aire - City Centre	and plans	implementation of affordable, high quality measures to alleviate flocding where practicable.	Scheme Completed	reduction of economic damages and improve community safety. Reduce flood risk from River Aire	Ctoff time and conital		Environment Agency	LCC Civil Engineering	01/03/2018 £50.6m
19 S8	Completed	2017	Cotton Mill Beck Culvert, Valley Road			Morley		E. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of alfordable, high quality measures to alleviate flooding where practicable.	Scheme Completed	Reduce risk of flooding	Staff time and capital	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018
10 S35	Completed	2018	Westfields, Allerton Bywater			Allerton Bywater		 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	01/03/2018 £502K
7 \$34	Completed	2017	Giebelands Recreation Ground			Garforth		 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	01/03/2018
8 S36	Completed	2017	Barley Hill Recreation Ground (Phase 2)			West Garforth		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 canital	Leeds City Council	Environment Agency	LCC Parks and Countryside	01/03/2018
1 S2	Completed	2017	Ramsden Street, Kippax, Flood Alleviation Scheme - (Local Levy & FDGiA)			Кіррах		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	Ctoff time and conital	Leeds City Council	Environment Agency	LCC Flood Risk Management	01/03/2018 £305k
2 S1	Completed	2014	Lowther Road, Garforth - Culvert Improvements			Garforth	3. Studies, schemes, assessments and plans	 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	27/01/2015 £220k
3 S4	Completed	2014	Wellhouse Drive Flood Alleviation Scheme			Gledhow	3. Studies, schemes, assessments and plans	 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	27/01/2015
4 S7	Completed	2014	Culvert Headwall Repair Scheme - (Local Levy)			Otley	3. Studies, schemes, assessments and plans	 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	27/01/2015
5 S28	Completed	2013	Oakdene, Watercourse Improvements			Swillington	3. Studies, schemes, assessments and plans	 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	05/07/2013

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6 5	327 (Completed	2012	Barley Hill Recreation Ground - (Local Levy)	West Gar	rforth 3. Studies, schemes, and plans	6. Improve understanding of local flood risk and seek to decrease local flood risk through implementation of alfordable, 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	05/07/2013	
7 5	i22 (Completed	2011	Flood Alleviation Scheme - Leeds Road (Allerton Bywater) pumping station (local levy)	Allerton B	3. Studies, schemes, and plans	 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		LCC Flood Risk Management	04/07/2012	
8 5	23 (Completed	2011	Newton Road property protection and resilience scheme	Newton R	Road, Potternewton and plans	 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		LCC Flood Risk Management	04/07/2012	
9 5	624 (Completed	2011	Lower Wortley - property protection and resilience scheme	Lower Wo	ortley 3. Studies, schemes, and plans	E. 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	04/07/2012	
10 S	25 (Completed	2011	Church Lane, Bardsey - property protection and resilience scheme	Bardsey	3. Studies, schemes, and plans	essments 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	04/07/2012	
11 S	526	Completed	2011	Dean Park Drive, Drighlington - property protection and resilience scheme	Drighlingt	ton 3. Studies, schemes, and plans	essments 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	04/07/2012	
12 5	20 S	Superceded	2020	Investigate the Interaction between the Leeds and Liverpool Canal and the River Aire.	£10k River Aire	e and Liverpool Canal 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 Aire Catchment Flood Risk Management Plan for the Leeds Policy Unit - to be progressed b 2050 this has now been included in the scope of Phase 2 of the Leeds Flood Alleviation Scheme	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	01/03/2017	£10k