

APPENDIX 2

Appendix C - List of Measures (Schemes)

| ID | Priority | Current phase | 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 | Lead Organisation | Support Organisation | Last Reviewed |
|--|----------|---------------------------------|---------------------------------|--|------------|-----------------------------|--|--|---|--|--|---------------------------|---|---------------|
| CURRENT SCHEMES AND FEASIBILITY STUDIES | | | | | | | | | | | | | | |
| S37 | High | Feasibility | 2018 | Leeds Flood Alleviation Scheme Phase 2, River Aire City Centre to Upper Catchment | TBC | £112m | River Aire - City Centre to Upper Catchment | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Phase 2 of the Leeds FAS, looking at solutions across the whole catchment upstream of Leeds that will reduce flood risk to the city along the river Aire. Modelling and feasibility work largely complete, Outline Business Case submitted to the EA and Treasury Jan 2018. Moving in to more detailed design in 2018 with construction starting late 2018 early 2019, advanced works have taken place on some 'quick win' items and works at Stourton about to start as is a programme of advanced maintenance and stewardship. | Reduce flood risk from River Aire | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S29 | High | Design / Construction (on hold) | 2018 | Queen Street Culvert | NA | TBC | Allerton Bywater | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Outline design completed. Japanese knoweet treatment taking place this is a 3 year programme due to complete in 2018 | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S40 | High | Design / Construction | 2019 | Hawthorn Terrace Flood Alleviation Scheme Phase 2 | TBC | TBC | West Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Initial scheme completed, but further defects with existing assets and connected infrastructure identified so further works needed and being designed | Reduced risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S15 | High | Construction | 2019 | Killingbeck Meadows Flood Alleviation Scheme | TBC | £1.6m | Halton Moor | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Flooding to residential and commercial areas from Wyke Beck. Accelerated scheme due to combining the benefits of releasing development sites (11 housing sites and land 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 2018 and become a registered flood storage area under the Reservoirs Act. This forms part of a joint Wyke Beck Programme delivering housing growth from Brownfield land and Local Nature reserve and green space improvements. | The risk of flooding will be managed | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S16 | High | Feasibility | 2019 | Farnley Wood Beck Flood Alleviation Scheme | 104% | £500k | Cottingley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Flood risk to residential areas, long term issue - scheme being scoped, developer contribution secured, this scheme is now being progressed as part of the wider Wortley Beck study. | Reduce flood risk from Farnley Wood Beck | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S31 | High | Feasibility | 2020 | Lin Dyke Catchment Assessment - Upper and Middle catchments | TBC | £1.25m | Garforth & Kippax | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Continuation of work included in Section 19 Report, regarding flooding of the SE Leeds area in August 2014 and 2015, design works are continuing to be progressed as schemes are identified. | Reduced risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S30 | High | Feasibility | 2020 | Wyke Beck Catchment Assessment | NA | £50k | Communities along Wyke Beck | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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 ESIF funding to complete various schemes including Killingbeck meadows | Reduced risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S17 | High | Feasibility | 2020 | Wortley Beck Flood Alleviation Scheme | 111% | £1.1m | Wortley Beck | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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 | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S39 | High | Feasibility | 2020 | Wharfedale Flooded Communities Study | NA | £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. | Linked to wider catchment partnership work and Otley Flood Alleviation Study, initial modelling work currently being assessed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S9 | High | Design/ Construction | 2021 | Lower Mickleton Road Flood Embankment | 138% | £1.1m | Mickleton | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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. New model information only recently developed scheme proposal to be assessed in line with the | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S38 | High | Feasibility | 2021 | Otley Flood Alleviation Scheme | TBC | £2m | Otley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Initial £90k studied greatly extended 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 Statement 2016 linked to wider catchment partnership work and Wharfedale Flooded communities study | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S5 | High | Design (on hold) | TBC | Barnsdale Road Property Level Protection Scheme | TBC | TBC | Allerton Bywater | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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. This is currently on hold due to changes in the ownership of the properties involved to allow time to link with their plans for the properties | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S12 | Medium | Pre Outline Business Case | 2021 | Potternewton Surface Water Flood Alleviation Scheme | 153% | £250k | Potternewton | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Surface water flooding. Install attenuation and pumping station to remove flood water to adjacent culverted watercourse. Local levy funding secured | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S10 | Medium | Pre Outline Business Case | 2022 | Thomer Beck Flood Alleviation Scheme | 101% | £150k | Thomer | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Restricted capacity of existing culverts causing overland flooding. Improve Culvert capacity. Local levy funding secured | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S11 | Medium | Pre Outline Business Case | 2022 | Victoria Road Surface Water Flood Alleviation Scheme | 100% | £250k | Guiselley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Surface water flooding to properties. Install attenuation and pumping station to remove flood water to adjacent culverted watercourse. | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S18 | Low | Pre Outline Business Case | 2020 | Sheepscair: evaluate the condition of formal and informal flood defences along the Sheepscair Beck which were recently breached to identify potential remedial works required. | TBC | TBC | Sheepscair | 4. Asset management and maintenance | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Evaluate flood defence improvement works required. | Helps ensure that problems or new works are identified to prevent recurrence of flooding. | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S19 | Low | Pre Outline Business Case | 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 | 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. | 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 | Environment Agency | Leeds City Council & Yorkshire Water Services | 17/10/2018 |
| S33 | | Ongoing | NA | Improvements to surface water drainage outfalls | NA | TBC | City wide | 4. Asset management and maintenance | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Identify improvements to improve discharge of surface water from flooding hot spots, work programme ongoing | Reduce risk of flooding | LCC Flood Risk Management | Yorkshire Water Services | 17/10/2018 |
| S21 | | Ongoing | NA | LCC Significant Maintenance | NA | TBC | Across the District | 4. Asset management and maintenance | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Continuation of regular maintenance of Watercourses and Hot-Spots | Reduced risk of flooding | LCC Flood Risk Management | Yorkshire Water Services & Environment Agency | 17/10/2018 |

COMPLETED SCHEMES AND FEASIBILITY STUDIES SINCE 2011

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| S22 | Completed | 2011 | Flood Alleviation Scheme - Leeds Road (Allerton Bywater) pumping station (local levy) | NA | £34k | Allerton Bywater | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S23 | Completed | 2011 | Newton Road property protection and resilience scheme | NA | £88k (estimated) | Newton Road, Potternewton | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Improve flood resistance and resilience of properties | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S24 | Completed | 2011 | Lower Wortley - property protection and resilience scheme | NA | £47k (estimated) | Lower Wortley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Improve flood resistance and resilience of properties | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S25 | Completed | 2011 | Church Lane, Bardsey - property protection and resilience scheme | NA | £10k (estimated) | Bardsey | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Improve flood resistance and resilience of properties | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S26 | Completed | 2011 | Dean Park Drive, Drighlington - property protection and resilience scheme | NA | £25k (estimated) | Drighlington | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Improve flood resistance and resilience of properties | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S27 | Completed | 2012 | Barley Hill Recreation Ground - (Local Levy) | NA | £113k | West Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S28 | Completed | 2013 | Oakdene, Watercourse Improvements | NA | £8k | Swillington | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S1 | Completed | 2014 | Lowther Road, Garforth - Culvert Improvements | NA | £84k | Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Improve flood resistance and resilience of properties | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S4 | Completed | 2014 | Wellhouse Drive Flood Alleviation Scheme | NA | £22k (estimated) | Gledhow | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S7 | Completed | 2014 | Culvert Headwall Repair Scheme - (Local Levy) | NA | £36k | Otley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S3 | Completed | 2017 | Leeds Flood Alleviation Scheme Phase 1, River Aire City Centre | 100% | £50m | River Aire - City Centre | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce flood risk from River Aire | LCC Civil Engineering Projects | Environment Agency | 17/10/2018 |
| S34 | Completed | 2017 | Giebelands Recreation Ground | 101% | £70k | Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Parks and Countryside | Environment Agency | 17/10/2018 |
| S36 | Completed | 2017 | Barley Hill Recreation Ground Phase 2 | NA | £160k | West Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Parks and Countryside | Environment Agency | 17/10/2018 |
| S2 | Completed | 2017 | Ramsden Street, Kippax, Flood Alleviation Scheme - (Local Levy & FDGIA) | NA | £220k | Kippax | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S14 | Completed | 2017 | Carry out flood warning feasibility studies for Wortley Beck and Meanwood Beck and implement findings. | NA | £10k | 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. | 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 reduction of economic damages and improve community safety. | Environment Agency | Leeds City Council | 17/10/2018 |
| S35 | Completed | 2018 | Westfields, Allerton Bywater | 101% | £600k | Allerton Bywater | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme Completed | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S32 | Completed | 2016 | Hawthorn Terrace Flood Alleviation Scheme Phase 1 | 125% | £47k | West Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Initial scheme completed, but further defects with existing assets and connected infrastructure identified so further works needed and being designed | Reduced risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S20 | Superseded | 2020 | Investigate the interaction between the Leeds and Liverpool Canal and the River Aire. | TBC | £10k | 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. | 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 by 2030. - 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 | Environment Agency | Canal & River Trust | 17/10/2018 |
| S8 | Transferred | NA | Cotton Mill Beck Culvert, Valley Road | NA | £25k | Morley | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | Scheme transferred to Network Rail for Review | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S13 | Transferred | NA | Wakefield Road Flood Alleviation Scheme (transferred to S31) | 102% | £190k | West Garforth | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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 link | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |
| S6 | Transferred | NA | Mickletown (Pit Lane) Flood Embankment (transferred to S9) | 153% | £400k | Mickletown | 3. Studies, schemes, assessments and plans | 6. Improve understanding of local flood risk and seek to decrease local flood risk. | 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 Mickletown Road Flood Embankment, relies on much delayed Lower Aire Modelling work now being reviewed by LCC consultants | Reduce risk of flooding | LCC Flood Risk Management | Environment Agency | 17/10/2018 |