

APPENDIX 1 – Local Flood Risk Management Strategy Update 2023

1 Background

- 1.1 Following major floods during 2007, the Government set up the Pitt Review to investigate the way flood risk management agencies dealt with such a major event. This review came up with 93 recommendations, which Government accepted.
- 1.2 A number of these recommendations needed legislation to give local authorities and agencies the necessary powers or duties and hence the introduction of the Flood & Water Management Act 2010 (F&WMA). One of these duties was for all Lead Local Flood Authorities (Leeds City Council for this area) to prepare a Local Flood Risk Management Strategy (LFRMS).
- 1.3 The Strategy was last refreshed and reviewed by Scrutiny Board (Sustainable Economy and Culture) in December 2018 and adopted by Full Council on 27th March 2019. And is due to be updated in 2024.
- 1.4 **Leeds Local Flood Risk Management Strategy**

The Strategy outlines the approach the Council and other agencies will take regarding flood risk management. The Strategy contains:

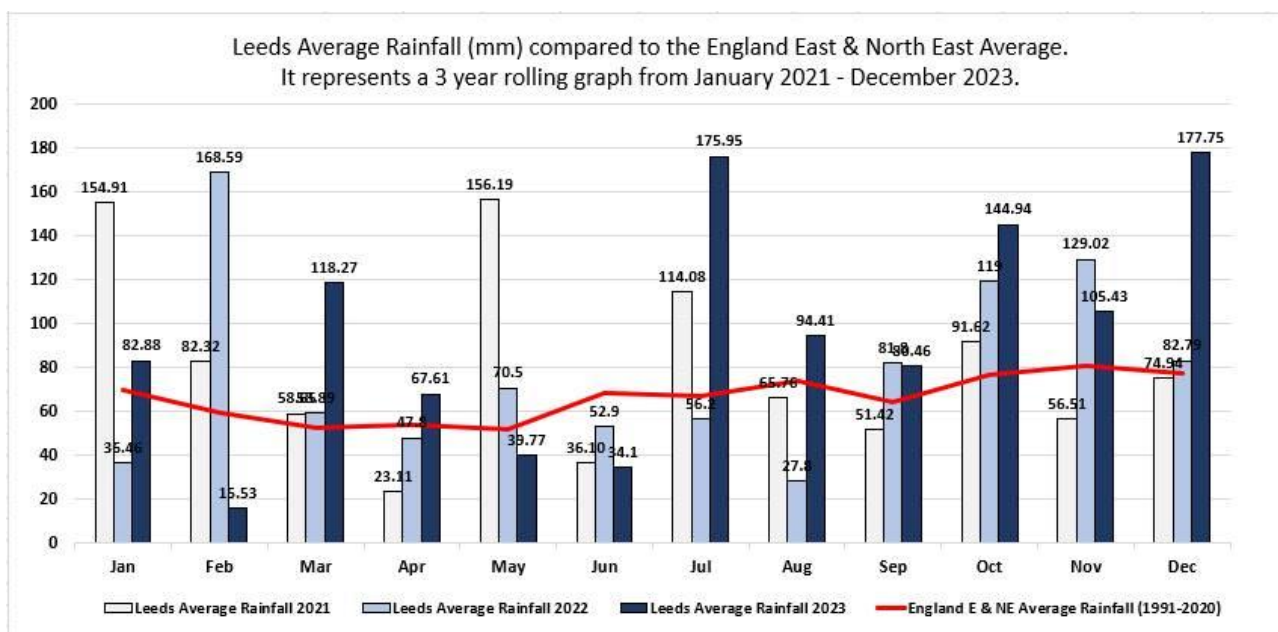
- a. The objectives for managing flood risk.
- b. The measures proposed to achieve those objectives.
- c. Timeframe for any measures.
- d. Costs and benefits of the measures and how they are to be funded.

Specific measures are contained in Appendix C of the Strategy, which have been updated regularly to ensure it is reactive to latest priorities. The section below outlines the work of the Flood Risk Management Team over 2023 with additional works and actions also undertaken

2 Major Storm Events

- 2.1 February storms have become a regular feature in recent years, however these didn't occur in 2023. As the graph shows, February was quiet and the increased rainfall in subsequent months, particularly in July, did not produce named storms until October 20th with the arrival of Storm Babet. This storm was closely followed by Storms Ciaran (November 1st – 2nd), Debi (November 13th), Elin (December 9th), Fergus (December 10th), Gerrit (December 27th) and the heavy rainfall continued into the new year with Storm Henk (January 2nd 2024), Storm Isha and Storm Jocelyn (23rd January). This is the tenth named storm in five months and it's only the second time in the UK storm season that the letter J has been reached in the alphabet. (Storm season runs from the start of September to the end of the following August). For more background on this <https://blog.metoffice.gov.uk/2024/01/23/why-have-there-been-so-many-storms-in-the-uk-this-year/>
- 2.2 The graph below shows a very high increases in rainfall over the past few months since July. And so, the arrival of the storms outlined above in quick succession caused land to be saturated, resulting in issues with overland flow, blockages in

watercourses and a large amount of debris on the hotspots that are cleared by our contractors.



2.2 The experiences of the storms described above have demonstrated that the city is still vulnerable to a wide range of flooding impacts. Several properties, roads and businesses were badly affected. The council is working closely with partner organisations, in particular the Environment Agency and Yorkshire Water, to deliver improvements to natural and engineered networks and to install new and improved flood alleviation measures. However more work is needed to address current and future flood risk and to mitigate the increasing impact of climate change.

3 Flood Risk Management team updates in 2023

3.1 Flood Risk Management undertake a wide range of flood risk activities ranging from advising on Planning applications and Planning/ flood risk policies, to the monitoring and data gathering of incidents, to the carrying out of investigations, implementing capital schemes and the operation and maintenance of assets. The section below covers these activities in more detail.

Asset Management Team – Including FAS Team, Investigations Team & Maintenance Team

3.1.1 The FRM Asset Management Team is responsible for operating, maintaining, and managing a diverse range of assets to ensure their proper functioning. One of these assets is part of LFAS1, a large and intricate flood defence scheme located on the river Aire. This scheme incorporates active moveable weirs at Crown Point and Knostrop, as well as active flood gates and passive linear defences. The team's duties include the management and maintenance of LFAS1, as well as other significant recently constructed flood risk schemes such as Otley, Killingbeck and Mickletown.

3.1.2 In addition to these schemes, the team also oversees the maintenance of various other assets, including reservoirs, becks, culverts, trash screens, pumping stations, petrol oil interceptors, and septic tanks. The responsibility for maintaining these assets is often shared among multiple council departments, external

organizations, and private companies. The AMT collaborates with these parties to promote flood risk resilience throughout the city.

- 3.2 **FAS Team:** The Flood Alleviation Schemes (FAS) team takes an active role in operating, managing, and maintaining several large flood alleviation schemes within the city. Their main objective is to protect residents, businesses, and infrastructure from flooding. The moveable weirs and flood gates located throughout the city may require intervention or operation at any time. To ensure a prompt response to incidents, a dedicated team is available 24/7. Staff members from the wider Flood Risk Management (FRM) team choose to participate in incident response roles in addition to their regular duties. The FAS team is responsible for training and coordinating these incident roles, which include a Duty Flood Risk Manager (DFRM) in charge of all resources and the FRM response. Site Operatives (SO's) are responsible for operating flood assets in various locations. The FAS team also maintains and inspects FAS1 assets, which pose unique and interesting challenges. Currently, the team is working on streamlining operations, increasing resilience through proactive measures and sustainable practices, and building more flood-resilient communities.
- 3.2.3 During recent storm events, the duty teams have been active, closely monitoring river levels that have been approaching activation levels.
- 3.2.4 For background on the deployment of the weirs see:
- [Leeds flood defences perform as designed during Storm Babet](#)
 - [Winter storm season requires us to be prepared, as major flood and climate resilience works across Leeds continue](#)
- 3.3 **Investigations Team:** the team helps Leeds City Council fulfil its legal obligation to investigate flooding as the Lead Local Flood Authority, as mandated by the Flood and Water Management Act 2010. Their role is to understand the causes of flooding, prevent future incidents, and protect communities by engaging directly with residents, providing support and guidance, and collecting evidence. They are the primary point of contact for the public, Councillors, and other stakeholders, actively participating in community group meetings, workshops, and events to inform and involve the community.
- 3.3.5 In 2023, the team worked with a contractor to clear 2,442 trash screens, including critical grids that are prone to flooding. They investigated more than 270 flooding incidents, resulting in 162 referrals for maintenance issues such as clearing grids, unblocking culverts, and maintaining watercourses. Additionally, they conducted 185 routine inspections of becks, identifying and removing obstacles that obstruct the flow of water.
- 3.3.6 Recent storms have brought a significant number of debris, including a sofa, trolleys, and a scooter, onto the trash screens in LCC watercourses. The need for debris removal from grids and watercourses has increased during the winter, when the land is saturated and overland flow becomes problematic. Surface water flooding remains a complex issue for residents and businesses in the city, and the team collaborates closely with third parties to promote flood preparedness within the community.
- 3.3.7 Furthermore, the team works together with other LCC H&T departments to survey and investigate existing drainage systems for highway design and development purposes.

- 3.4 **Maintenance Team:** The Maintenance Team is responsible for both reactive and planned maintenance to manage flood risk throughout the city, protecting residents, businesses, and infrastructure. They identify and repair damaged drainage assets through a robust regime of inspections and referrals. Additionally, the team supports other LCC departments in operating and maintaining fifteen pumping stations, six Septic Tanks, and thirty-seven Petrol Oil Interceptors through service level agreements and associated telemetry monitoring and development.
- 3.5 The team works closely with others to prepare for forecasted storm events. This includes:
- Inspection of flood alleviation schemes: All 12 flood alleviation schemes throughout the city were inspected during storm Babet, and they were found to be responding well and operating as expected, providing full protection to properties and communities.
 - Reservoirs: Inspections were conducted on reservoirs regulated by the Reservoir Act. Fleakingley Reservoir required active intervention to divert flows away from the reservoir and prevent inundation of the receiving St Aidan's reservoir.
 - Pumping Stations: Critical surface water pumping stations throughout the city are monitored using telemetry.
 - ELOR Drainage: Ongoing work is being done to understand new assets and their maintenance. Inspections before and after floods have provided a better understanding of flooding mechanisms and any potential issues.
 - FAS1 and FAS2 Trees: A desk study was conducted to identify trees most at risk, and a post-flood review was carried out to assess any damages.
- 4 **FRM Data Systems Team:** Several updates have been made to our data systems to improve recording and functionality of assets, hotspots and incidents and improve team understanding of flood risk.
- 4.1 AMX is a new and fully integrated Asset management system which allows us to organise and inspect Leeds City Councils' flood defences and watercourses. It allows one-system to bring together our assets, hot spots (grids), inspections of assets, investigations, surveys and works referrals into one system. AMX is linked directly to our Geographical Information System to allow updates to the asset register to be directly reflected in AMX. It has improved our way of recorded assets and incidents by integrating these into one system. AMX allows the Flood Risk Management (FRM) Team to respond to flood incidents and keep a record of past incidents for historic purposes. And allows the FRM team to add and update scheme assets (such as FAS 1, FAS 2, Mickletown FAS and Glebelands FAS, to name a few) and their inspections to ensure we are protecting properties from flooding. It is used to prepare for flooding events, such as those caused by storms, by allowing proactive maintenance regimes to be coordinated prior to possible flooding, for example, by clearing grids on a routine maintenance regime. In summary AMX holds: Assets: 50,852 of which are FAS related: 816 It also holds information on Surveys: 3742 Incidents: 10782 Maintenance referrals 329 Inspections, over 1000 scheduled and Hot spots (grid maintenance) 197.
- 4.2 An additional system we utilise is Maprain which provides useful data on forecast and actual rainfall events across the city, as well as historical evidence to support Highways when processing legal claims. And NAFRA2 New National Modelling (NNM) which reviewed the latest Surface Water modelling is now complete. FRM used local and specialised knowledge to ensure the outputs are represented correctly in well-known hotspots and added any completed FAS and culverts to

the map to ensure these are taken into consideration with the modelled outputs. Which is utilised within planning application responses, incident investigations and scheme development.

5 **FRM Development Control:** Leeds City Council in their role as the Lead Local Flood Authority (LLFA) are a statutory consultee for all Major planning applications and pre-applications in relation to the management of surface water drainage. We are also the consenting authority for Works Affecting a Watercourse and determine applications made to us under the Land Drainage Act 1991. For the year-to-date (end of quarter 3 Oct-Dec 2023) Development Control have provided a bespoke response to a total of 1411 applications, with 408 of these being Major applications. We have also responded to 105 separate enquiries sent direct to Development Control which related to highway improvement projects, pre-planning application enquiries, watercourse consent pre-submission enquiries, Councillor queries, and homeowner enquiries. Over the course of 2023 the number of planning application consultations has continued to remain consistent at between 150 – 170 per month, with approximately 1/3 being Major applications which require detailed review, considerable input, and in many cases re-consultation. To place this level of planning activity and LLFA consultation into context, Leeds LLFA provide bespoke comment to more Major application consultations than all the other West Yorkshire LLFA's combined.

5.1 In respect of Watercourse consent applications, for the year-to-date the Development Control Team have determined 22 consent submissions.

5.2 FRM have also been jointly working with Planning to revise the current Strategic Flood Risk Assessment (SFRA) for Leeds. This is a critical element of the Climate Change Local Plan update and is in response to the declaration of the Climate Emergency. The revised SFRA will inform the review and revision of flood risk policies in the Local Plan update. However, the SFRA does has a broader purpose in delivering a robust depiction of flood risk across the district it informs policy, provides a more informed response to development proposals affected by flooding, and helps to identify and implement strategic solutions to flood risk providing the basis for possible future flood attenuation works.

Following the public consultation period detailed comments were received from the Environment Agency and numerous commercial and private respondents. The SFRA was amended, where possible and appropriate, to largely reflect their suggested alterations. We undertook a short re-consultation with the Environment Agency and aside from minor suggested wording alterations for the policies, their main concerns for the SFRA were:

- Consistent use of proxy catchments for mapping of functional floodplain,
- Easy identification of the source of mapping, and
- Identification of residual flood risk areas.

5.3 It should be noted at this stage that the EA are in large part content with, and supportive of, the updated SFRA. None of the issues raised are a 'soundness' concern for the updated SFRA and we have now produced a Technical Note to address these specific concerns which will be issued to the EA. The interactive mapping, which is an excellent and extremely useful tool, is now available for use on-line. [Local Plan Update - SFRA 2022.pdf \(leeds.gov.uk\)](#), [SFRA final_exp_v2 \(arcgis.com\)](#)

5.4 Additionally, there have been several major and upcoming policy changes:

- The re-drafted Minimum Development Control Standards for Flood Risk guidance document was published in May on the 'Advice for Developers' and 'Natural Resource and Local Plan' webpages. This was a significant piece of work for the Development Control team, and we are pleased that the document has been well received and used. Our counterparts in the West Yorkshire Flood Risk Management teams use this document as an exemplar template and basis for their own technical standards. The document will periodically be updated to reflect new or revised guidance and any changes will be submitted to Planning Board for approval. [Minimum development control standards for flood risk \(leeds.gov.uk\)](https://www.leeds.gov.uk/minimum-development-control-standards-for-flood-risk)
- The Government announced in early January 2023 a proposed consultation and review on how Schedule 3 of the FWMA 2010 will be implemented. This relates to a framework for the approval and adoption of sustainable drainage systems and could have considerable implications for the Flood Risk Management team. At some point early in the new year we are expecting communication from DEFRA announcing completion of the review and a period of public consultation. This public consultation will collect views and advice on impact assessment, national standards, and statutory instruments. Development Control continues to lead at monthly meetings with counterparts in the West Yorkshire Flood Risk Management teams to share information and co-ordinate actions. [New approach to sustainable drainage set to reduce flood risk and clean up rivers - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/new-approach-to-sustainable-drainage-set-to-reduce-flood-risk-and-clean-up-rivers)
- The implementation of mandatory Biodiversity Net Gain (BNG) for Major applications was delayed from November 2023 to January 2024. There are two proposed elements to BNG – terrestrial units and river units. Where Leeds City Council can offer river credit units Flood Risk Management will likely play a role in the identification, costing, and delivery of the river units but the scope and extent of this role has yet to be agreed with colleagues in Planning & Sustainable Places. [Biodiversity and planning \(leeds.gov.uk\)](https://www.leeds.gov.uk/biodiversity-and-planning)

6 Strategy and New Works team: Manage and deliver a range of capital schemes reflecting key flood risks, right through from initial feasibility up to completion on site and handover to the FRM maintenance team. The list below gives a summary of our key schemes in progress along with an update to the overall programme in Appendix C.

6.1 Recent Capital Works Completed : In the past two years, three schemes were completed:

6.1.1 Farnley Wood Beck FAS: completed in 2023 this £1m scheme protects 15 properties at Old Close Cottingley from flooding (previous flooding events, most notably in 2005). The works completed in February 2023 have been to de culvert the watercourse between Old Road and Elland Road providing protection up to a 1 in 100-year flood event for these properties. The scheme is funded by local levy, FDGIA and S106 funding. We are also looking at a next phase (outlined below) with a Natural Flood Management scheme to provide the climate resilience to this work.

6.1.2 Otley FAS: Completed in 2022/23, this £4.43m project to reduce flood risk from the River Wharfe in Otley with the background covered by the Otley FAS webpage which includes a copy of the latest newsletter and public updates on the scheme. The effectiveness of the scheme recently proved itself in the Spring 2022 See Video [link](#) of the residents feedback and the scheme effectiveness after a

recent flooding event. The scheme was also recognised through an ICE Regional Award.

- 6.1.3 We also received additional Department for Education funding (£50k), as the scheme reduces the risk of flooding to the access route to two schools in Otley. This included the funding for some retrofitting of SuDS schemes (two schools) and provides the students with some education around flooding and what the scheme does to help reduce that risk. The educational work with Prince Henry's Grammar School took place on their global citizenship day (July 22) where LCC and EA colleagues inspired students about what they can do as citizens of the world to help reduce the risk of flooding and a green roof is to be installed at the school as part of the initiative. A presentation and site visit are planned with Ashfield Primary school and discussions of a green roof at both schools are progressing well, with implementation anticipated in 2024. This will provide an opportunity for the team to better understand the benefits of green roofs.
- 6.1.4 **Queen Street (St Aidan's):** In the late 2000's, three housing developments adjacent to St Aidan's Nature Reserve, discharged their surface water to an existing drainage ditch on the site/boundary of St Aidan's. In the more extreme storm events this ditch overtops and spills out across the adjacent footpath affecting a public right of way. The works connected the drainage ditch, to an existing culvert and are now completed with the final tree planting undertaken in March 20223.
- 6.1.5 **Leeds FAS Phase 2 £125,826,000:** Phase 2 of the Leeds Flood Alleviation Scheme is a two-step scheme, reducing flood risk along the river Aire, between Leeds station and Apperley Bridge, Bradford. This involves a combination of Natural Flood Management (NFM) and traditional engineering methods, providing protection to 1048 homes and 474 businesses. The scheme comprises of a flood storage area near Calverley, and flood walls in Apperley Bridge, Newlay and Kirkstall. The flood storage area is particularly central to work on Phase 2, as the construction of a flow control structure on the existing flood plain will mean that during high river levels, this can be activated to alleviate flooding being experienced further downstream. When this is complete, it will raise the level of protection for the entire FAS2 area to a one-in-200-year level. Once delivered in full (Summer 2024) , Phase 2 will also raise the standard of protection of Phase 1 (Leeds city centre), to a one-in-200-year level. All funding required has been secured, however there have been further cost increases (e.g., supply, war in Ukraine, inflation) which are being closely monitored and under review.
[commonplace site](#)

Next Schemes under construction

- 6.2 **Sheepscar:** Sheepscar Beck is a historic water course that runs through the North of Leeds City Centre. The beck is heavily engineered with a high number of manmade structures. Due to the age of the stone and brickwork that makes up these structures, and the presence of invasive plant species, there are many points throughout the channel that need repair. Alongside the works needed within the channel, there are several brick and stone structures above and overlooking the beck that need to be repaired.
- 6.2.1 If the infrastructure in and around Sheepscar Beck were to fail, it would negatively impact on several hundred homes and businesses in the area and require significant financial investment and carbon cost to restore. This project aims to proactively carry out repair works to sustain the existing level of flood

risk by preventing future blockages. The scheme is due to start in April 2024 at an estimated cost of £1.5m and fully funded through the Environment Agency and WYCA funding. [Have Your Say Today - Sheepscar Beck Flood Alleviation Scheme - Leeds City Council Flood Resilience \(commonplace.is\)](#)

- 6.3 **Thorner:** There have been major flooding events in the past from Thorner Beck, particularly in 2007. The feasibility phase of the scheme is mostly complete having identified a suitable solution for a flood scheme. Which includes a flood storage upstream of the Westfield Lane Ford. Other Natural Flood Management measures in the catchment will also be considered. We are also working closely with the Yorkshire Dales Rivers Trust, who are currently delivering a project to improve water quality in the Thorner Beck catchment. This work includes tree-planting, work with farmers and local improvements to re-naturalise areas of the channel. [Have Your Say Today - Thorner Beck Flood Risk Study - Leeds City Council Flood Resilience \(commonplace.is\)](#)

Potential Future Schemes and Studies

- 6.4 **Wortley Beck FAS:** There have been frequent flooding events from this beck with over 50 properties known to have been affected by internal flooding and 200 properties within Flood Zone 3. There was also recent flooding of the outer ring road in February 2021. Funding for this feasibility work has been secured from the Environment Agency through local levy and flood defence grant in aid for the development of a flood alleviation scheme. After a recent review of the hydraulic modelling study, an optioneering exercise is currently underway on eight options and is the largest scheme on the Leeds programme (aside from FAS2). An Exec Board report is due to be submitted in the Summer of 24 to keep Cllrs updated and a further engagement will be undertaken on the preferred option. Previous engagement and consultation included a seven-week consultation on the options (see below) and generated a good response with over 100 comments and 76 agreements. This feedback has been fed into the options appraisal and several newsletters sent out to local Counsellors and residents and a recent presentation update given in (November 2023) to local Cllrs in Pudsey and Wortley. For further information [Have Your Say Today - Wortley Beck Flood Risk Study - Leeds City Council Flood Resilience \(commonplace.is\)](#)
- 6.5 **Meanwood Beck FAS:** Another potentially very substantial scheme with further modelling and optioneering currently under review in Meanwood catchment, The work has considered over 20 sites/ options. Finding adequate flood storage whilst minimising environmental impacts is very challenging in this catchment. A shortlist of options is currently under assessment with a further engagement planned for the Summer of 2024. For further information see [Have Your Say Today - Meanwood Beck Flood Risk Study - Leeds City Council Flood Resilience \(commonplace.is\)](#)
- 6.6 **Wharfedale Flooded Communities Study:** A study is currently in progress to model the impact of flooding in settlements along the Wharfe including Collingham and to identify possible alleviation measures. The baseline model is complete and preliminary long list options have been put forward. A public drop-in event and online have been previously held. Attendance from the community was very good and supported by local ward members. This is along with regular meetings in Collingham and with Cllrs and local MP to keep residents updated of progress. A web page is now live showing the strategic options and an online survey has recently received a very positive response. [Have Your Say Today - Middle Wharfe](#)

[Catchment Flood Risk Study - Leeds City Council Flood Resilience \(commonplace.is\)](#)

- 6.7 **Potternewton Surface Water FAS:** The area has a history of surface water flooding particularly at the Newton Road and Newton Park Drive areas which have been flooded multiple times to significant depths. Past investigation and discussion with Yorkshire Water identified that the main sewer through Potternewton park is at under capacity and surcharges during minor flood events. A review of the options to reduce flood risk to properties within the Potternewton area as well the flooding of the highways and Park is currently underway with over 12 sites under review to examine how they could reduce surface water runoff. For further information - [Have Your Say Today - Potternewton Flood Risk Study - Leeds City Council Flood Resilience \(commonplace.is\)](#)
- 6.8 **Farnley Wood Beck Natural Flood Management (NFM) :** This scheme will deliver NFM work consisting of meandering, tree planting, leaky dams, and flood storage at areas along Farnley Wood Beck. This will complement the deculverting scheme protecting properties at Farnley Wood Beck and provide the climate resilience as well as reducing flows along Farnley Wood Beck and Hol Beck downstream where further properties are at risk. The NFM work will create and improve habitat in the catchment and sequester carbon through new planting. This is the second scheme which has submitted for NFM funding (£796k) from WYCA's Climate Emergency Action Plan funding.
- 6.9 **Lin Dyke Garforth and Kippax FAS:** Various scheme options have been drafted and costed. However, when assessed the cost benefit assessments, do not justify taking a scheme forward to Outline Business Case. The assessment is based on standard funding criteria for flood risk schemes. However further work has been commissioned, to identify next steps for the work and potential funding options. The Environment Agency have commissioned research to examine how areas could create more adaptable and resilient schemes and Garforth has been included as an area within that research.
- 6.10 **Property Flood Resilience (PFR) :** PFR is the term used to describe measures that help to reduce flood risk to people and property. Using PFR enables households and businesses to reduce the damage and stress caused by floods, making the process of recovery and reoccupation easier. In 2022 Leeds was included to be part of the ongoing Yorkshire Flood Resilience project (Defra funded) and undertook a PFR survey last year, and FLIP are now building on that work to identify which properties need further assessment.

Other actions undertaken are.

- Partnership working with other key agencies, notably the Environment Agency (EA), West Yorkshire Combined Authority (WYCA) and Yorkshire Water (YW)
- Close working with impacted residents, businesses, local councillors, and community flood groups to increase awareness of flood risk.
- Develop and maintain a comprehensive register of flood risk features and assets.
- Investigate flooding events – where necessary producing a Section 19 Report. Under section 19 of the Flood and Water Management Act 2010 Leeds City Council has a duty to investigate flooding when it is deemed necessary and appropriate. The report is a public statement of

the circumstances of a flood event and what parties have a role in managing the risks.

- Promote sustainable development – particularly regarding Sustainable urban Drainage Systems (SuDS)
- Support planning with determining the impact of development on flood risk and securing contributions from developers to support the delivery of flood risk management measures. New developments in the city give us a great opportunity to better manage flood water and reduce the risk of flooding to the city, we will see improvements from new developments rather than pressures due to the strength of our planning legislation.
- The operation and maintenance of Leeds Flood Alleviation Scheme Phase 1 (LFAS1) and preparation for the handover of LFAS2 later this year
- Reservoir maintenance and management as well as the co-ordination of Reservoirs Act compliance work (inspections, plans and reporting)
- Preparation for the introduction of Schedule 3 FWMA, which focuses on SuDS including liaison with other LLFAs and Defra, and development work to design new governance and assurance frameworks for the anticipated SuDS Approval Body.
- Natural Flood Management: The Strategy and New Works team have procured a Leeds wide NFM mapping tool which will assist identification of NFM potential. NFM supports flood risk management measures by 'slowing the flow' and provides wider adaptation and mitigation measures by delivering habitat restoration and wider green infrastructure activities with a mix of benefits including carbon sequestration, biodiversity enhancement, water quality improvements and urban cooling. We have two NFM schemes proposed which are outlined in the report.
- Climate Resilience and Adaptation are emerging but key themes of both the council's response to the climate emergency and the Yorkshire & Humber Climate Commissions Climate Action Plan. The council are playing a leading role in developing programmes and plans that will enable local authorities to develop their priorities and work streams that will lead to increased climate resilience across the city and wider region. This included a council wide workshop on severe weather and climate adaptation risk planning held in December, there will be work for all services across the council to do following this and this work is being facilitated by a task group from Flood Risk Management, Resilience & Emergencies, Sustainable Energy & Air Quality and Intelligence and Policy services.
- West Yorkshire Flood Innovation Programme (FLIP): Five lead Local Flood Authorities in West Yorkshire have launched an innovative programme to make the region more resilient to flooding and climate change. The Environment Agency and West Yorkshire Combined Authority are also partners, they have support from local stakeholders including academic partners, community-based groups, Third Sector organisations and Yorkshire Water. iCASP (at the University of Leeds) will also provide a scientific lead, ensuring the latest research is embedded into new techniques employed across the region and

provide an evaluation framework. The council takes a leading role in managing the programme and plays directly into ongoing projects looking at developing new tools to assess Property Flood Resilience measures, the use of Smart technologies linking in with colleagues in IDS and the implementation of Schedule 3 as detailed above. You can [watch this short animation](#) for more information about WY FLIP

7 Sources of Funding

7.1 The capital schemes for flood risk management utilise a range of funding to deliver the projects which in the main cover Grant in Aid (DEFRA), Local Levy, Section 106 monies, and West Yorkshire Combined Authority. There are also submissions to Yorkshire Water for schemes on their 5-year programme (PR24)

Flood Risk Management Minor Works Capital Budget

7.2 In 2015 Leeds City Council Strategic Investment Board awarded £1m to deliver flood mitigation works that would not be eligible for other funding and to provide partnership funding as leverage to attract external contributions. In 2019/20 a further £1m was awarded.

7.3 In 2021 a further application has been approved as part of the recent capital funding review and this will provide a further £2.5 million over the next 5 years (£500,000 p.a.). So far £1.9m has been used in the Council's Capital Programme for Flood Risk projects, with the remaining £2.6m profiled for use in future financial years. This continues to prove an extremely beneficial way to maximise the council's ability to deliver schemes and has helped to attract substantial external funding that would not otherwise have been available. The ratio of LCC capital money is 1:7 and so for every £1 spent by the Council on flood risk schemes this generates an additional £7.

7.4 **Flood Defence Grant in Aid and Local Levy:** Flood Defence Grant in Aid (FDGiA) is provided by DEFRA and allocated locally by the Environment Agency and is subject to submission of an acceptable business case.

7.4.2 For 2022 LCC have been awarded £8.9m FDGiA. Significant amounts are: £7.8m for the Leeds Flood Alleviation Scheme Stage 2 (FAS2), £842,000 for Otley Flood Alleviation Scheme and £180,000 for the Wortley Beck Scheme. In 2023 we were awarded a total of £738,000 for 22/23. Significant amounts include £608,000 for Farnley Wood Beck FAS – Phase 1. Further funding has been awarded to FAS2 which is detailed in para 3.31.

7.4.3 Local Levy (LL) is raised from annual contributions from councils within the region and allocated through the Regional Flood and Coastal Committee (RFCC). Over the past 12 months LCC have been successful in a number of LL bids that support regional schemes that LCC are taking a leading role on.

- £175k LL bid (in addition to £95k from Grant in Aid (GiA) already secured) to develop a Legal Entity to attract green finance and secure the future of NFM work in the catchment (supporting Leeds FAS2), which is in its final stages of approval.
- £83k to lead the Yorkshire Natural Flood Management Community of Practice,
- £160k to manage the WY FLIP programme for 2 years.

- £100k towards the development of a Farnley Wood Beck NFM scheme

- 7.5 **West Yorkshire Combined Authority:** The Environment Agency and other Government agencies will continue to support the West Yorkshire Combined Authority (WYCA) in investigating and attracting future funding for the delivery of the flood risk programme. Although funding specifically for flood risk is not included in the devolved powers, the additional powers and financial flexibility allow for more investment decisions to be taken locally in line with local needs and opportunities. Mayoral Combined Authority (MCA) status allows for deeper engagement with government. The mayor can also act as figurehead to unlock other local contributions and private funding.
- 7.5.1 The Combined Authority and partners have outlined a programme of flood schemes with a significant impact that require additional funding to unlock their delivery. The programme requires £120m of additional investment and is being used as the basis of engagement with Government. If the additional funding is achieved, it can accelerate delivery of Flood Risk Management schemes including a dedicated Natural Flood Management Programme. It also includes funding for schemes within Leeds and will support delivery of the flood alleviation capital programme including phase 2 of the Leeds FAS. These schemes will protect properties and businesses within Leeds and safeguard existing jobs.
- 7.5.2 This programme will strengthen the region's response to the Climate Emergency by reducing carbon emissions and improve resilience to the effects of climate change. The work in the programme is being undertaken in a way that is minimising carbon emissions through changing construction practice, incorporating low carbon materials and using Natural Flood Management (NFM) alongside hard engineering. It will support delivery of our City Region strategies relating to energy and green and blue infrastructure. Delivery of this programme will allow the City Region to make further progress toward our objective of becoming a net contributor to the UK economy and achieving our ambition of becoming a net zero carbon economy by 2030.
- 7.5.3 The Combined Authority Capital Infrastructure Flood Programme lists 23 schemes across West Yorkshire (including 5 Leeds schemes) towards gap funding. FAS 2 has been supported in this process when the Government Department of Business Energy and Industrial Strategy (BEIS) committed to fund £12.565m towards gap funding. A Strategic Outline Case is under development to be submitted to the CA for approval (22nd June 2023) after which project level business cases can be submitted for approval as funding is confirmed. As well as the FAS2 funding, there is a Business Case undergoing the approval process of £650k towards the Sheepscar refurbishment.
- 7.5.4 To further support delivery of NFM In 2022 we have two current applications for funding into a new funding pot under the Climate Emergency Action Plan. Leeds has bid for two schemes under this funding for Farnley Wood Beck NFM (796k) and Thorner (779k - detailed above) both of which require business case approval.
- 7.6 **Section 106 agreements**
- 7.6.5 Section 106 of the Town and Country Planning Act includes enabling powers for legal agreements between the Local Planning Authority and developers to provide improvements to local services and infrastructure. In 2022 we utilised £300k from S106 monies available and enabled us to make a significant contribution towards

the £1m for the Farnley Wood Beck Scheme. We are currently exploring how we can make the most of this opportunity to link S106 monies with flood risk schemes.

- 8 **Yorkshire Water** : There are regular meetings with Yorkshire Water to develop our joint working potential. Yorkshire Water are currently undertaking their 5-year annual plan review (PR24) for investment in the West Yorkshire Region. FRM have submitted scheme proposals where there is a clear YW interest. We are currently awaiting feedback on these schemes and whether they have been included for funding.

9 Corporate Considerations

9.1 Equality and Diversity / Cohesion and Integration

- 9.1.6 It should be noted that by carrying out flood alleviation works the Council will be ensuring the safety of the local community and particularly those residents that have children and members of the families that have a disability, where these benefits will be greater – as currently these individuals may struggle to get to safety if flooding occurred. Included as Appendix 4.

9.2 Climate Emergency

- 9.2.1 The Council declared a Climate Emergency in March 2019, with the stated ambition of working towards a net zero carbon city by 2030. The Council has accepted that very urgent action is required to make our contribution to containing global temperature rises within 1.5C. Beyond this limit, there is a strong scientific consensus that there will be catastrophic consequences for both humanity and the natural world. Since the declaration the Council has adopted a new way of working, changing its own structures and governance processes to incorporate the new climate emergency priority. Delivery of the LFRMS will help to reduce the impacts of flooding and therefore deliver managed adaptation to the future impacts of climate change. In delivering the capital programme for flood alleviation the carbon impact of these schemes will be considered to promote lower carbon solutions.

- 9.2.2 In the annual update to Executive Board in July 2023 there will be much greater emphasis on climate resilience and adaptation, LCC now not only forms a key part of the Leeds Climate Commission but also to the more recently formed Yorkshire & Humber Climate Commission including being members of the Climate Resilience and Adaptation Panel with a view to planning a response to the Y&HCC Climate Action Plan launched in late 2021 around COP26.

10 Conclusions

- 10.1 Flood Risk is a key threat to the wellbeing of the residents across Leeds and to ensure action is taken it is important that Council continues a proactive approach to mitigating the impact of flooding. Moreover, throughout 2022 and looking to the future the broader focus of climate resilience and adaptation must align very closely with flood risk.
- 10.2 There has been good progress in the delivery of projects identified in the Strategy in 2023. The current 6-year programme 2021-27 will deliver more than 10 schemes to reduce the risk of flooding by investing £20m in the City's flood and climate resilience infrastructure. This would be in addition to the investment from Leeds FAS2.