Name of meeting: Overview and Scrutiny Management
Date: 15 March 2022
Title of report: Kirklees Local Flood Risk Management - Annual Review

Purpose of report: To consider annual progress against the action plan of the Kirklees Local Flood Risk Management Strategy (the Strategy),

Key Decision - Is it likely to result in spending or saving £250k or more, or to have a significant effect on two or more electoral wards?	**N/A**
Key Decision - Is it in the Council's Forward Plan (key decisions and private reports)?	**N/A** **Private Report/Private Appendix – No**
The Decision - Is it eligible for call in by Scrutiny?	**N/A**
Date signed off by Strategic Director & name **Is it also signed off by the Service Director for Finance?** **Is it also signed off by the Service Director for Legal Governance and Commissioning?**	**David Shepherd** **Eamonn Croston** N/A
Cabinet member portfolio	**Cllr Naheed Mather**

Electoral wards affected: All

Ward councillors consulted: No consultations have been carried out

Public or private: Public

Has GDPR been considered? Yes

1. Summary

- £1 million DEFRA Property Flood Resilience Grant Support was put in place for flood victims in 2020 following Storm Ciara/Dennis in February 2020. The scheme will help to better protect 73 properties.
- £1.3 million EA Kirklees Culvert Programme is on track to complete by 31st March 2022. It has better protected 800 properties (see Appendix A)
- £550K Kirklees Debris Screen Study 22/24 was granted approval to review our high-risk debris screen assets.
- MAP Rain has been purchased to enhance our Local Flood Warning System by setting flood alerts based on historic data.
- A West Yorkshire Flood Innovation Programme (WY FLIP) has received £160K springboard funding. Aim to scale up funding for five themes: Integrated Water Management; Community Voluntary Sector, Property Flood Resilience, Natural Flood Management and Local Flood Warning Systems.
- Community flood risk education programme completed reaching 1000 properties.

2. Information required to take a decision

The Local Strategy was refreshed in 2019 to provide an up-to-date evidence base to support the measures identified in the action plan. The details of progress against the action plan are outlined in a "**Progress and Implementation Plan**" included in Appendix B, which summarises the work carried out in support of the Action Plan. It is proposed to remove measures 4.2 and 7.1 as the outcomes have been achieved (highlighted green).

The progress being made align with the themes within the government's current National Strategy, these include:

- Emphasis on natured based solutions
- A greater focus on creating resilient communities
- Adaptive pathways – being agile to new climate hazards
- A build-back better approach
- Extend the support to local communities
- Align incident response and recovery strategy

We had planned to start to renew the Local Flood Risk Management Strategy in 2021/22. This has now started and the tender for this commission has been issued and we hope to have a new strategy in place in around 12 months' time from award of contract. Considerable amount of time is spent in data collection, review and in undertaking a district wide stakeholder consultation.

Whilst the strategy review is in progress; the remaining measures and actions will continue into the next financial year 22/23. It is felt that these measures remain adequate and align with the existing strategy and themes within the new National Strategy.

As part of our tactical response to severe weather warnings, a best endeavour commitment is being made to attend to known high-risk gullies that have caused property flooding. Also, to enhance our support to communities, sandbags maybe deployed in advance to known high-risk locations.

National warnings can be issued at short notice which present a difficult resource challenge and the extent of the support that can be provided. It therefore cannot be guaranteed if these can be always undertaken.

Storm Dudley, Eunice, Franklin

The triple storm week commencing the 14th February 2022 had brought strong winds and rain to the district. Currently we have 133 reported incidents of flooding of which 30 are internal property

flooding (including residential/businesses); others mainly are car parks and road flooding. The numbers are likely to rise as we work through the data and as new information arrives. Please note this data has not been validated until it is fully reviewed and often includes contacting the occupiers. Debrief sessions are being undertaken and lessons learnt will be fed back into our operational plans.

We continue to work with our partners like the Environment Agency in trying to secure funding and look for long term solutions. This is especially around areas that are prone to flooding linked to main rivers (e.g. River Calder, Mirfield). We continue to work with National Trust, River Trusts and Peak District National Park Authority to support Natural Flood Management projects in our more rural areas to slow the flow into our more built-up areas.

3. Implications for the Council

- **Working with People**
  We will continue to work with communities and aim to improve resident preparedness. Many of the actions in the current Strategy, under the umbrella of "Community Engagement", involve information exchange with residents, businesses and ward councillors, explanation of responsibilities and encouragement of self-help to enable householders and business to understand, and manage, the flood risk they face.

- **Working with Partners**
  The Council will continue to work proactively with other Risk Management Authorities, including the Environment Agency and Yorkshire Water, to share information and good practice with neighbouring authorities, develop joint initiatives and provide clarity on the responsibilities for the management of flood risk.

- **Place Based Working**
  The work we do continues to recognise the diversity of the district and the actions identified in the Strategy pay regard to the needs of each community. The assessment tool which has been developed to prioritise the areas at higher levels of flood risk recognises local infrastructure and prioritises investment in deprived communities. The community engagement programme has been designed as a bespoke process, tailored to the requirements of a variety of communities.

- **Climate Change and Air Quality**
  We will deliver a local approach to managing the impacts of climate change in relation to flooding. Flood mitigation improvement schemes, funded by national flood grant, include allowances for increased rainfall from the impact of future climate change.

  Our approach will make further emphasis on the need for Natural Flood Management techniques that can store and slow water running off land in response to a rainfall to help reduce flood levels downstream. This can include ponds, tree planning and use of leaky dams which have wider sustainability benefits such as biodiversity and carbon sequestration.

- **Improving outcomes for children**
  No impact.

- **Other (e.g. Legal/Financial or Human Resources)**

  N/A

Do you need an Integrated Impact Assessment (IIA)?

N/A

4. Consultees and their opinions

No specific consultation has been carried out on this annual report. Extensive public, member and general stakeholder consultation was carried out for the original 2013 Strategy. Proportionate levels of consultation are carried out when implementing actions.

5. Next steps and timelines

To continue to progress the measures in the action plan and to consider the views expressed by Overview and Scrutiny Committee.

6. Officer recommendations and reasons

Members are asked to note the progress in 2021/22 and planned actions for 2022/23. Note measures 4.2 and 7.1 are complete and will be removed from the Action Plan. This is because they can now be picked by another measure or have been implement and can form part of routine monitoring.

7. Cabinet Portfolio Holder's recommendations

This has been supported by the Portfolio Holder.

8. Contact officer

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9. Background Papers and History of Decisions

Original Strategy http://www.kirklees.gov.uk/beta/flooding-and-drainage/pdf/FloodRiskStrategy.pdf

10. Service Director responsible

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Kirklees Culverts Project Summary

Contact: ***Adrian Gill***

Contact: ***Rashid Mahmood***

The Kirklees Culverts Project is a £1.3 million pound scheme that is currently on track to achieve its OM2 target of 800 properties better protected.

Pre 2010 very few councils had detailed records of the location and condition of culverts within their district. The estimated length of culverts within Kirklees is 350km-400km (the real length may never be known). 25% of these culverts are assumed to be 'ancient', stone built and over 150 years old. Most of these are inaccessible for inspection and maintenance. As a result of this, maintenance of council and privately owned culverts has not been carried out.

A detailed survey of over 50 were highlighted to pose a risk to residential properties and have potential condition issues. £50k of Local Levy funding was used (Plus £20k council match) to carry out a comprehensive CCTV survey of these 50 culverts to determine their conditions. This information helped to provide a strong base for a successful Environment Agency capital Flood Defence Grant-in-Aid (GiA) bid.

The project was delivered using the inhouse council resources over a 6 year programme. Some culverts were completely replaced, but some required isolated repairs/replacement and improved access points

The scheme is due to end in April 2022 and is currently expected to be completed on time, on budget and meet the OM2 targets.

Appendix B

Progress and Implementation Plan 2020/21 – 22/23

The "Annual Progress and Implementation Plan"

Progress against the 32 actions in the 2013 Strategy have previously been reported annually through the Councils Overview and Scrutiny process using a "traffic light system". A substantial amount of work has been carried out over the last few years which has improved both the Councils evidence base and the local infrastructure to help manage local flood risk. Much of this work has not been reported through the annual review and it is appropriate now to highlight progress made with such initiatives. The approach, since 2019, has been to move away from rigid reporting against the action plan to summarising the work carried out in the previous year, with reference to the action plan. The annual reporting mechanism is now through this '**Annual Progress and Implementation Plan'**. The plan provides more specific details on

- The current understanding of the location and extent of local flood risk
- progress against the Local Strategy objectives
- a record of works and studies carried out in the previous year, which are relevant to the Local Strategy objectives
- Working with Planning colleagues to influence planning decisions to take account of flood risk
- priorities for the forthcoming year

The Plan gives a clearer appreciation of what the council needs to do, how it intends to do it and what it has actually done.

1. Last Analysis of the Location and Size of Flood Risk in Kirklees (on a ward basis)

Note: Numerous datasets are available which provide information on flood risk and are based on high-level assumptions which may under or over-estimate flood risk in some locations. However, the table gives an overview of our current assessment of the numbers of properties at risk from rainfall events that have a 1% chance of occurring in any given year (1% AEP). **The 1% AEP flood is the level of risk that the Government currently judges to be an "acceptable" level of risk.**

The actual risk to individual properties can only be determined through detailed local flood studies. A significant number of additional properties are also at risk from flooding from blocked or collapsed underground drainage systems, particularly in urban areas.

Although many properties will be at risk from both river and surface water flooding, it is possible that flooding from each source could happen during different rainfall events. The "Total" numbers at the right hand side of the table provide an indication of the maximum number of properties at risk but, inevitably, includes some double-counting of properties.

Ward	Fluvial (river) risk		Surface Water risk		Total at risk from both Sources	
	Homes	**Businesses**	**Homes**	**Businesses**	**Homes**	**Businesses**
Almondbury	130	6	251	13	**381**	**19**
Ashbrow	72	11	198	38	**270**	**49**
Batley East	9	54	237	94	**246**	**148**
Batley West	0	6	198	49	**198**	**55**
Birstall and Birkenshaw	31	2	242	47	**273**	**49**
Cleckheaton	236	30	249	73	**485**	**103**
Colne Valley	88	28	462	84	**550**	**112**
Crosland Moor and Netherton	1	4	229	39	**230**	**43**
Dalton	651	172	347	81	**998**	**253**
Denby Dale	6	11	197	36	**203**	**47**
Dewsbury East	3	73	242	129	**245**	**202**
Dewsbury South	2	7	181	34	**183**	**41**
Dewsbury West	69	77	343	33	**412**	**110**
Golcar	16	27	336	68	**352**	**95**
Greenhead	22	9	425	58	**447**	**67**
Heckmondwike	52	18	279	35	**331**	**53**
Holme Valley North	130	61	341	55	**471**	**116**
Holme Valley South	42	38	304	73	**346**	**111**
Kirkburton	30	11	192	30	**232**	**41**
Lindley	0	0	197	10	**197**	**10**
Liversedge and Gomersal	122	26	251	28	**373**	**54**
Mirfield	58	38	407	24	**465**	**62**
Newsome	164	91	193	115	**357**	**206**
Totals	**1934**	**800**	**6301**	**1246**	**8235**	**2046**

2. Progress against the Actions Delivering the Objectives

Note: The outstanding measures from the 2013 Strategy form the basis of the action plan in the updated 2019 Strategy and are outlined below:

Ref.	Measure	How will we measure success?	Timescale for the Action	Actions from February 2021	Planned Actions up to March 2023
1.1	Assessment of High Flood Risk Locations	• Complete the assessment of the highest risk locations • Have a clear understanding of the type and size of flood risk at each location	Ongoing	• Review completed studies, options considered viable are on EA Medium Term Plan. • Cluster study areas 6 (Kirkheaton, Upper/Lower Hopton/Gomersal) and 7 (Thornhill Lees, Thornhill, Overthorpe and Highburton) are complete. Viable options are being progressed onto the EA MTP Plan	• Continue recommended works from all area assessments to be collated into work packages that can be put forward for EA funding • Continue to undertake flood studies at known locations on the highway network.
1.2	Improve Skills and Knowledge of FRM Officers	• Develop a multi-skilled team • Encourage knowledge transfer from technical consultants	Ongoing	• Training undertaken includes SUDS and modelling. • Seminar training with the Met. Office.	• Continue with staff training and development • Employ a new substantive Planning Technician
2.1	Publish and distribute information explaining responsibilities, local flood risk, property protection/ resilience etc.	• Identify programme of community engagement • Produce information templates • Complete programme of community engagement	Ongoing (2018-23)	• Community/ member engagement programme has now completed all 23 wards. This included distribution of Member booklets and leaflets for residents. A reach of 1000 properties. • Kirklees Twitter Account was used during severe rain events to inform and warn. • Draft guide has been developed with ICASP (based in Leeds University) to issue to local landowners in how to protect a nearby watercourse.	• Finalise a Communication Plan to provide meaningful and timely information to flood communities. • Complete guide and work with ICASP to facilitate an engagement exercise with homeowners/ businesses. • Improvements to Council flood risk management website.
2.2	Involve local communities in local initiatives and schemes	• Develop an engagement programme which encourages information exchange (assets and flood incidents) with residents	See above	• Delivering the DEFRA Property Flood Resilience Grant is nearing completion. • Ongoing dialogue with businesses and residential communities in	• Continue to deliver the DEFRA PFR grant (ends 31st March 2022).

				conjunction with the Environment Agency. • A water level monitoring trial has started to asses debris load with a local business to monitor debris loads on debris screens to develop a local enhanced warning system.	• Commence the trial of local storage of sandbags at two locations. • Seek opportunities to have flood community groups in keys areas. • Continue to engage with local members/residents and businesses
3.1	Identify highest risk open and culverted watercourses, highway drains and other drainage/flood features	• Develop a prioritisation process to rank watercourses and other drainage systems/assets • Develop a program of condition surveys on high priority assets • Compile a list of highest risk council-maintained drainage systems	March 2020	• EA grant funded culvert improvement project will successfully complete by 31st March 2022. Improved 50 highway culverts. • Investigation and surveys being carried out throughout the district to enhance asset and flood risk knowledge. • A Debris Screen Asset Performance Study has been approved £550K. • A list of high-risk highway flood hotspots has been established that caused flooding to infrastructure. The tender for these has been issued. • Kirklees have commenced a new initiative for a modern Asset Management System for flood and drainage asset data – ongoing.	• Commence the 2-year Debris Screen Asset Performance Study. It will review the debris screen asset conditions and risk to flooding. • Consultant to commence the design work for the high-risk highway asset for design and costings. Review funding sources and establish a delivery programme. • Develop an assessment process which highlights surface water drainage systems which are under capacity – ongoing.
3.2	Develop an affordable cyclical and reactive maintenance regime based on risk	• Document the inspection/ maintenance regime for trash grilles • Document the cleansing process for road gullies including performance management • Document an affordable inspection/ maintenance process for significant highway culverts	March 2020	• High-risk gullies have now been added onto our Pre-Flood Operational Plan in response severe weather warnings. • A larger list of highway gullies that have led to flooding have been identified. Aim is too annually clean them as part of the Winter Preparedness. • A site trial has begun on debris screens to monitor debris loads on debris screens to develop a local enhanced warning system.	• Complete debris load site trials and review next steps. • Establish a periodic low-cost inspection regime for higher priority culverts.
4.1	Identify highest risk private flood defence and drainage assets	• Document a process to record and risk-assess significant private drainage assets • Compile a list of highest risk privately maintained drainage systems	Oct 2020	• Assets continue to be recorded. • Difficult to resource a planned programme of inspections.	• Establish a process to record private drainage assets when resources allow

4.2	Develop technical advice for owners to guide them in preparing local maintenance plans	• Develop standard maintenance recommendations and a template for the plan • Distribute maintenance plans to asset owners identified in Item 2.1	Oct 2019	• Maintenance advice developed	• Advice to be embedded within community engagement programme
5.1	Develop proposals to engage with landowners to embrace land management techniques and initiatives which help to reduce the rate of surface water run-off	• Support council and regional initiatives to implement NFM measures • Identify local landowners in higher priority areas and offer encouragement/advice and support to help them to reduce surface water run-off.	Ongoing	• Working closely with community led groups in the Holme and Colne valleys to support where possible. • WY FLIP has secured £160K of funding to develop innovative flood solutions with local partners. • Continue to support Our Future Landscapes Strategy partners. • White Rose Forest programme engaging with landowners to develop NFM – Landscapes for Water.	• Develop longer term plans to engage with smaller landowners to share advice on implementing low-cost, high-impact NFM measures. • Work with partners NEIRF bid with National Trust, Yorkshire Water and Woodlands Trust
6.1	Develop and deliver a pragmatic programme of schemes and initiatives which are likely to be funded through the National Programme or Local Levy	• Formulate the outputs of the studies carried out in Item 1.1 into an affordable long-term works programme • Deliver the programme, optimising the use of council budgets to attract external funding	March 2020	• Delivery of the priority schemes has been established in the EA programme with a value of £30m put aside subject to viability.	• Develop the identified works in the programme into business cases that can be submitted through the grant funding process.
7.1	Embed the LFRMS into response and recovery plans and use developing knowledge on flood risk to “tune” emergency procedures	• Update the Pre-Flood Operational Flood Plan to reflect highest risk locations requiring most support	Oct 2019	• The Food Risk and Response Policy has been revised. • Pre-Flood Operational Plan review is completed and updated. • Map Rain has been installed to support Emergency Planning.	• Continue to monitor and ensure new data is reflected in our plans.

3. Summary of Flood Management Initiatives carried out in 2021/22 to support the Strategy

Many of the actions outlined in the 2013 Strategy involved establishing new council procedures to investigate flood events, introduce more robust data collection processes and to establish the LLFA as the main point of contact for the management of local flood risk.

A number of other actions in the 2013 Strategy involved improving the council's understanding of the location and size of local flood risk and developing a programme of mitigation measures to manage the risk. Some progress has been made on these actions through a variety of studies and works which have provided information and drainage infrastructure improvements. Some projects have been opportunistic, resolving immediate issues and others have formed part of a broader programme to better understand local flood risk. The latter is part of an iterative process to, ultimately, provide interventions at a local level in an informed and prioritised way.

The initiatives carried out in the last year are detailed below:

Initiative	Date Completed	Purpose	Cost (£,000's)	Funded by (Council or External)	Benefits
Map Rain Software	2021	To enhance local flood warning system by setting virtual flood alerts	5	Council	Support Emergency Planning and our tactical response during severe weather events
Property Clusters#6	2021	To aggregate small clusters of issues into single projects	20	Local Levy	Detailed assessment of risk
Property Clusters#7	2021	To aggregate small clusters of issues into single projects	20	Local Levy	Detailed assessment of risk
Gully Blitz	2021	Winter Preparedness Nov/Dec annual initiative to clear high gullies to have caused flooding	15	Council	To reduce likelihood of property and infrastructure from flooding.
Community Engagement – 5yr	2022	Education leaflet to flood risk communities	N/A	Council	To support communities in understanding flood risk in their areas
DEFA PFR Grant Scheme	2022	To install property level protection to reduce internal flooding	£300	DEFRA	Detailed assessment of risk
EA Highway Culvert Programme – 5yr	2022	To improve asset condition of high-risk culverts.	£1, 300	EA	Improving the asset condition will prevent blockages/collapses which ensure neighbouring properties don't' flood.
Water Level Monitoring trial in ordinary watercourses	Ongoing	To identify higher risk locations and mitigation options	N/A	Council	Detailed assessment of risk
WY FLIP Programme – 2 yrs.	Ongoing	Seek funding to deliver innovative list of flood management projects in West Yorkshire	160	Local Levy	Provide funding to undertake natured based solutions, community and voluntary initiatives and develop integrated water management solutions in flood risk areas.
Sandbag Pre-Deployment Trial	Ongoing	To support flood risk communities in advance of severe weather	£5K	Council	To better protect high risk communities from property flooding
Gully Cleansing telemetry	Ongoing	To record gully cleansing operation – gully visits and gully condition	N/A	Council	Electronically recorded data can be used to better understand gully condition, gang outputs and gully round efficiency. Several cycles of data will be needed before gully rounds can be made more efficient.

A couple of additional studies have been completed to understand the surface water flood risk (cause of the flooding in the areas) with outline recommendations being made. A programme of mitigation measures can now be developed to address the locations at highest risk with greatest impact. These will require further detail assessments and grant funding for these will be sought but often do not generate all the funding required.

In broad terms, the risk of flooding is such that major flood defence schemes to reduce the risk to property are likely to be unaffordable. Whilst a substantial number of residential properties in the district are at risk from river flooding, and a significant amount of historic industrial buildings lie adjacent to the river, the funding formula for the national Flood Grant in Aid programme is such that it won't generate significant amounts of grant funding to make such schemes affordable.

Funding opportunities are regularly considered and developed where resources permit as alternative funding means to bridge funding gaps or to act as standalone initiatives. A West Yorkshire wide Innovative Resilience Fund bid was made for £9.8 million but was not successful. However, the bid was recognised for its quality, so it was rebranded as West Yorkshire Flood Innovation Programme (WYFLIP). WY FLIP is a **collaborative programme** which aims to enable local authorities, academia, industry and the third sector to increase the **resilience of the region to flooding** and the impacts of climate change. The focus of the Programme will be to collaboratively develop innovative funding bids to attract significant funding to West Yorkshire over the next 6 years, bringing resource to the region as a national flagship for collaborative working, innovation and resilience. It has secured £160K springboard funding to establish and develop the Programme over the next 2 years. More information can be found here.

Natural Flood Management is key part of the solution to flood risk management and compliments wider Council and partner organisations priorities. Hence, the approach being taken is done on a catchment wide basis using a multi-agency approach to gain multiple benefits such as flood risk mitigation, supporting biodiversity, carbon sequestration, impact on Climate Change. The key partners include Environment Agency, River Trusts, White Rose Forest (covering West Yorkshire and North Yorkshire) and Our Future Landscapes Partnership (covering the Holme and Colne catchments).
Improved management of the Councils own drainage systems (culverted watercourses and highway drainage) has continued to make optimum use of limited budgets. As part this priority gullies list has been established that records indicate have historically resulted in property flooding and in high-risk areas.

4. Priorities for 2022/23

Much of the groundwork to establish information, assessment and performance management processes has been completed and future work will concentrate on making best use of our greater knowledge base. Remain abreast of emerging new climate science to ensure the Council is in the best position to response. It is important to not only respond to flood mitigation using engineering defences but seek out sustainable options such as opportunities to slow the flow. National priorities and policies for flood risk management are developing with an emphasis on managing flooding at source (natural flood management), ensuring that new developments minimise flood risk and that current climate change predictions are factored into hydraulic assessments. Enhancing community resilience is a key part of the solution to the managing local flood risk so building volunteering capacity in our flood communities is key.

The main priorities for 2022/23 are therefore:

- Review the Council's Flood Risk Management Strategy following the release of the National Strategy and Policy.
- Continue our efforts in S19 and flood investigations to enhance our flood risk and asset knowledge.
- Continue the high-level area flood risk assessment programme to help understand the location and size of flood risk in our highest risk areas
- Continue with our engagement/information-sharing programme with local ward members and at-risk communities
- Continue planning compliance on recent development sites in flood risk areas.
- Support regional initiatives around developing discussions with major landowners on land management practices which minimise surface water run-off
- Work with communities to building resilience by establishing local flood groups.
- Map out NFM opportunities in Kirklees with partner organisation.