

Report of the Strategic Director of Place to the meeting of Regeneration and Environment Overview and Scrutiny Committee to be held on 25th November 2020

Subject:

Water Management Scrutiny Review- Progress of Recommendations.

Summary statement:

The Environment and Waste Management Overview Scrutiny Committee undertook a wider scrutiny review into water management across the District following the devastating winter 2015 floods. The Water Management Scrutiny Review was endorsed by the Environment and Waste Management Overview Scrutiny Committee at their meeting on 4th July 2017 where it was recommended to be considered by the Corporate Overview and Scrutiny Committee in their meeting on the 26th October 2017 where it was subsequently endorsed.

Following its adoption, The Water Management Scrutiny Review included twenty-six recommendations and it was resolved that a report would be made in the following twelve months which monitored progress against all the recommendations contained in the review. Within the October 2019 report it was again resolved by the Regeneration and Environment Overview Committee that an update report would be presented in a further twelve months.

This report briefly outlines the progress made and the status of each of the twenty-six recommendations in the last twelve months.

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1. SUMMARY

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Following its adoption, The Water Management Scrutiny Review included twenty-six recommendations and it was resolved that a report would be made in the following twelve months which monitored progress against all the recommendations contained in the review. Within the October 2019 report it was again resolved by the Regeneration and Environment Overview Committee that an update report would be presented in a further twelve months.

This report briefly outlines the progress made and the status of each of the twenty-six recommendations in the last twelve months.

2. BACKGROUND

The floods of December 2015 inundated over 1,000 homes and businesses across a wide swathe of Bradford District and turned the lives of many hundreds of local people upside down. The cost of the damage to residential and commercial property is estimated to have been around £34 million. The broader social, environmental and economic impacts were even greater in scope as residents struggled to cope with the upheaval to their everyday lives through the months that followed.

At its meeting on Tuesday 19 January 2016, Bradford Council agreed that the Corporate Overview and Scrutiny Committee undertake an in-depth scrutiny review of the effectiveness of the Council and its Partners in dealing with the District-wide flooding of December 2015.

Following discussions with Councillors and Officers, it was also agreed that water management across the District should be looked at and that the Environment and Waste Management Overview and Scrutiny Committee should undertake that scrutiny review.

The Environment and Waste Management Overview and Scrutiny Committee agreed its terms of reference for this scrutiny review in April 2016. Specifically, the committee resolved to investigate six key lines of enquiry:

- 1) *examine the policies that impact on either the mitigation of flood risk or contribute to that risk;*
- 2) *identify potential sources of funding and other resources that could assist in reducing the risk and impact of flooding;*
- 3) *develop an action plan to reduce the risk and impact of flooding and use in response to any future incidents;*
- 4) *consider future climate change assumptions and their impact on the frequency and*

severity of flooding incidents;

5) consider measures which could be taken to reduce the rate of water runoff into the river system;

6) consider the effect of increased flooding risk on proposed development and the effect of proposed and possible future development on run off and flooding risk. 1

As a result of the review, The Environment and Waste Management Overview and Scrutiny Committee made a total of 26 recommendations for the Council to follow and report on. Recommendations 7 and 26 have been completed in subsequent years and are therefore an update is not included in this report. An update on the progress made over the previous 12 months for the remaining recommendations under each of the 6 key lines of enquiry is detailed in the report.

Water management in Bradford was again unfortunately put to the test in 2020 by the wettest February on record when Strom Ciara and Strom Dennis caused widespread incidents across the district. Approximately 300mm of rainfall fell in a four-week period. To put this in context the average annual rainfall for Bradford is circa 950mm. This caused a reported 71 residential properties and approximately 60 businesses to succumb to internal flooding. This also caused four schools to flood and be forced to close plus large lengths of the highway network becoming impassable. In total over 900 flooding incidents were reported through the contact centre during the period. This is a stark reminder of the importance of flood risk and water management within the district.

3. REPORT ISSUES

Key Line of Enquiry 1

Examine the policies that impact on either the mitigation of flood risk or contribute to that risk.

Recommendation 1 (mirrors Recommendation 16)

That the Council liaises closely with partner city region authorities to finalise supplementary planning guidance as soon as possible, and that officers quickly finalise a date by when these documents will be published.

The potential to produce Supplementary Planning Document (SPD) to be adopted by Leeds City Region Authorities is a complex matter and was explored with Heads of Planning and Flood Risk Managers within the city region. However, it was recognised that a joint SPD was not the preferred approach as all authorities have differing requirements relating to SUDS. For example, some authorities would prefer to integrate SUDS requirements into other policy documentation rather than adopt a stand-alone SPD.

Consequently, it was recommended, and subsequently agreed, at the Leeds City Region Chief Executive's Meeting on 19 July 2018 to endorse the proposal to update the current SUDS guidance [on a City Region scale] rather than a City Region SPD. It was agreed that Heads of Planning would oversee work to update this document. This approach was subsequently endorsed by West Yorkshire Chief Highway Officers at the Senior Flood Officers Group.

The final draft of the updated guidance was completed in June 2019, and has since been endorsed by the Heads of Planning Group and Senior Flood Officers Group. The draft

guidance document was endorsed by the West Yorkshire Combined Authorities Committee on the 12th December 2019 and is now widely used within the industry.

A copy of the guidance document can be viewed at the following link;

<https://www.westyorks-ca.gov.uk/documents/sustainable-drainage-guidance/>

Recommendation 2

That the Council continues to review the development of its ‘register of structures or features that affect flood risk’.

It is a statutory requirement of the Flood and Water Management Act 2010 that the Council under their role as Lead Local Flood Authority maintain a register of structures that affect flood risk. The Council continue to maintain the register but also identify new assets, that are added to the register, through a range of investigatory measures.

Recommendation 3

That the Council urgently reviews its default policy of non-inspection of the sustainable urban drainage features and flood risk aspects of completed developments, particularly in relation to larger projects and including SUDS already installed to date, in order to ensure that these developments are consistent with our LFRMS; and that the cost of doing so is borne as far as is practicable by the developer.

The Council through its role as Lead Local Flood Authority undertake assessments of drainage design submissions as consultee to the planning process. On giving approval to a drainage design it is unlikely that the Lead Local Flood Authority will inspect the installation of the drainage system due to resource constraints within the service. On larger projects the majority of developments will seek to have the drainage infrastructure including SUDS, adopted by the statutory sewerage undertaker, Yorkshire Water. In these instances, Yorkshire Water will inspect the installation of the drainage infrastructure. The Council will also inspect the installation of the system through the Highway Development Control Sections Clerk of Works, who will ensure the drainage infrastructure is installed satisfactorily as not to be detrimental to the structural integrity of the highway. On smaller projects the Building Control department will inspect the installation of drainage infrastructure and report any defects to the Drainage Department if necessary.

The Council has committed to take on the maintenance of SUDS retention ponds at Manywells (Cullingworth), Black Dyke Mills (Queensbury) and Allerton Lane (Allerton) developments, however maintenance will not be undertaken until the developments have been completed and an initial 12-month maintenance period lapsed. The drainage infrastructure on these site have been inspected at relevant construction stages by the Lead Local Flood Authority. It is expected that the maintenance period for Manywells will conclude in January 2021, for Allerton Lane in January 2021 and for Black Dyke Mills in March 2021.

Recommendation 4

That the Council reviews its engagement with communities with a view to ensuring that they are actively involved in the creation and maintenance of SUDS and other flood risk management projects.

The Council is working with local groups and the Aire Rivers and Yorkshire Dales Rivers Trusts (ART and YDRT) on the Aire, Worth and Wharfe catchments to encourage community projects to provide local Flood Risk Management improvements. It is proposed that community engagement, particularly around SUDs within individual properties and businesses will form a part of the Natural Flood Management (NFM) Project on Backstone Beck. The Backstone Beck project is still in progress but community engagement is currently suspended due to Covid 19.

In April 2018 Yorkshire Regional Flood and Coastal Committee allocated £45k of Local Levy money to the Wharfe Flood Partnership, which the Council are a partner of, for the development of a programme of measures and activities to improve community resilience in the Wharfe catchment. The Local Levy spend element is now complete and further funding is being sought by Yorkshire Dales Rivers Trust (YDRT) to progress SUDs and Natural Flood Management elements of the project. Addingham 4 becks were a beneficiary of this local levy money and are being used as a case study in the Yorkshire Pathfinder Project for community resilience. The link to the project is here;

<http://www.yorkshiredalesriverstrust.com/projects/addingham4becks/>

Benefits being delivered in Bradford District by Addingham 4 Becks in conjunction with the Council so far include;

- Training of beck stewards at Addingham – from EA and Bradford Metropolitan District Council (BMDC) staff
- Installation of water monitoring on 2 becks in Addingham
- Sustainable Drainage measures installed in schools in Ilkley and Addingham – working with YWS ‘Soak it Up Programme’
- Community drop in events with of themes of ‘Local flood risk & Water Quality’ and ‘Plants & Wildlife’
- Flood risk questionnaire – responses collated & analysed providing a valuable basis of local data

This programme has so far involved partnership members working together to deliver this holistic programme which supports their strategic objectives of community engagement, flood risk management and environmental improvement.

A further £55k bid for Local Levy funding through to 2021/22 has been made through the Wharfe Flood Partnership to build on this community work. The second phase of investment will support;

- Based on monitoring put in place in phase 1, Identification & delivery of viable & effective Sustainable Drainage measures (SuDS) in Addingham and other communities; the engagement done so far has raised local awareness and stimulated interest.
- Identification & delivery of NFM measures in the wider catchment;
- Development of Farm Flood Management Plans for landowners in Wharfedale – building on the work done by YDRT in Wensleydale & in the upper Wharfe catchment.

- Based on monitoring put in place in phase 1, Identification & delivery of viable & effective NFM measures in Addingham and other Wharfedale communities; using experience from the Dales to Vales Rivers Trust (DVRN) NFM Community Project at Collingham.

New initiatives that will be supported by this investment - to be developed by the partnership in 2020/21;

- Residential Suds - promote & deliver installation of suds in homes across the catchment. Already being promoted in Addingham as a pilot.
- Engage businesses – local and national chains - to install retro-fitted Suds on their premises, partly to widen public awareness.
- Development of Flood Action Group Network, to share good practice and develop detailed Emergency and Flood Action Plans and projects.
- Develop and establish a sustainable River Stewardship project and plan working with DVRN as CaBA hosts and other delivery partners.

Further Local Levy funding was approved by the Bradford Flood Programme Board for stewardship work and Flood Warning Service Awareness raising within the financial year in the Worth valley of Keighley. The final element was the distribution of Environment Agency leaflets to properties in the area to promote the uptake of the flood warning service. This has also helped to deliver effective community and corporate river clean ups on the River Worth and North Beck as well as the provision of fencing to mitigate against future fly tipping. As a direct result of corporate clean up days Morrisons (Supermarket) has also contacted Parks & Landscapes to see if they can expand their volunteer work to Bradford's open spaces.

A pilot Natural Flood Management (NFM) project is being progressed on Harden Moor. The project is funded by Leeds City Council and is one of five Aire catchment-wide projects being undertaken. The project was launched in March 2019 with the construction of leaky dams. Friends of St Ives volunteers planted trees with the assistance of the Woodlands team before the end of the planting season and further tree planting will be undertaken this coming season. The Countryside & Rights of Way team (CROW) have undertaken footpath works over the summer and Sphagnum moss planting has been undertaken in September 2020 by volunteer groups and the Council.

Three Bradford schools were taken forward as part of Yorkshire Water's 'Soak it Up' programme which implements SuDS in schools. These were Horton Park, Addingham and Sacred Heart Catholic (Ilkley) Primary schools. A link to the Addingham work is below,

<https://www.yorkshirewater.com/news-media/2019/soak-it-up-workshop-addingham-primary-school-2019/>

The Addingham 4 Becks Group were involved and have taken the initial works further by creating a wildlife area in the school.

The Council are within their final year of the four year **BEGIN** (Blue / Green infrastructure through social innovation) project which was approved in early September 2016 to EU North Sea Region Secretariat; The Lead Partner being the Municipality of Dordrecht in the

Netherlands. The project is progressing and will help support the aspirations of the Councils Green Infrastructure Study. The emerging approach in respect of Green Infrastructure and flood risk is based on the creation of a Linear Park along the length of Bradford Beck, restoring the natural character of the beck, retaining areas of natural floodplain, introducing new areas and enhancing existing areas of greenspace whilst incorporating sustainable drainage within new developments. The BEGIN projects also aims to engage with communities to increase awareness of the Beck and its catchment, including innovative ways of involving local communities and groups in the design, delivery and ultimately the maintenance of the project.

Recommendation 5

That the Council ensures that its flood risk management strategy continues to balance the needs of the Aire and Wharfe valley catchments.

The Local Flood Risk Management Strategy is a strategic document to cover Bradford District and its drainage catchments. Objectives within the Local Flood Risk Management Strategy are applicable to the whole of Bradford District and work is ongoing on both the Aire and Wharfe catchments. Section 10 of the Local Flood Risk Management Strategy (Wider Environmental Objectives) is being explored on both the Aire and Wharfe. A NFM project led by the Environment Agency and in conjunction with Bradford Council has started on the Backstone Beck catchment (a tributary of the River Wharfe in Ilkley). The project received an initial £167k and this financial year a further £50k was secured to help advance interventions throughout the catchment (from moorland to urban areas). Flow monitoring (funded through the EU Smart Cities and Open Data Reuse project (SCORE)) has been put in place to establish baseline flow rates on the watercourse and footpath turn byes were installed by the Friends of Ilkley Moor volunteers and the CROW team.

Also in the Wharfe catchment Bradford Council are working alongside the Environment Agency in developing flood risk studies for the towns of Burley in Wharfedale and Ilkley. These studies will firstly require modelling of the flood risk to be undertaken to update the understanding of risk within the towns. Following this commission will be made to see what can be done to reduce the flood risk to properties in the towns using up-to-date information. The studies will require key engagement with the communities as they develop.

Recommendation 4 covers community engagement on the catchment in detail. As also covered in Recommendation 4 a pilot Natural Flood Management (NFM) project is being progressed on Harden Moor and private landowners are being engaged with a view to undertaking NFM interventions on their land.

Recognising the need for a long term strategic approach to managing flood risk across our district, BMDC worked with the Environment Agency and Yorkshire Water to scope and develop a Bradford Flood Programme Board ('the Board'). The Board agreed that alongside ongoing scheme development, it is a priority to focus on identifying and delivering cost-beneficial solutions for communities at risk of flooding within the district. The Board was established in January 2017 and have progressed and supported the emergence of a capital flood risk programme of works for the District. Presented in Appendix 1 is a copy of the latest Bradford Capital Flood Risk Programme. This illustrates the spread of projects between the Aire and Wharfe Catchment. The programme shows the forecasted delivery of projects and where currently funding gaps exist based on their

eligibility to attract Flood Defence Grant in Aid from the Department for Environment, Flood and Rural Affairs (DEFRA). Further to the establishment of the Board the first project within the programme is due to start on site at the beginning of November. The Esholt Surface Water Flood Alleviation Project will provide a high standard of protection to 20 properties within Esholt that have suffered repeated flooding in the past. The scheme is due to be complete and ready for service in February 2021.

Key Line of Enquiry 2

Identify potential sources of funding and other resources that could assist in reducing the risk and impact of flooding.

Recommendation 6

That the Council reviews the potential for using funds from the Community Infrastructure Levy for flood alleviation measures.

Community Infrastructure Levy Regulation 123 provides for the Council to set out a list of those projects or types of infrastructure that it intends will be, or may be, wholly or partly funded through the CIL. Local Flood Risk Alleviation is listed as Environmental Improvements but only when the benefits are outside of a specific development. Site specific flood mitigation measures will fall within site specific Section 106 agreements as opposed to CIL.

At the last call for CIL funding, no bid was made for flood risk management works as the schemes within the Councils capital flood risk programme were not at a stage that would have benefited from additional funding. All the schemes were progressing through business cases that were already funded. It is intended to bid for future CIL money to support flood risk management works where necessary in addition to the funding secured and referenced throughout this report.

Recommendation 7

That the Council liaises with other West Yorkshire local authorities to secure funding from the Department of Transport's National Productivity Investment Fund.

This recommendation was completed in 2018's report and will therefore will not continue to be reported on.

Key Line of Enquiry 3

Develop an action plan to reduce the risk and impact of flooding and use in response to any future incidents

Recommendation 8

That the Council takes steps to ensure that the Environment Agency's new climate change allowances are applied in the preparation of the site allocations development plan to ensure that proper consideration is given to increased flood vulnerability linked to climate change and that identified sites are avoided where appropriate.

The Council are currently updating its Strategic Flood Risk Assessment (SFRA) in line with new guidance released this year. Within the update maps of predicted flood risk will be published from detailed computer flood mapping. This will inform the flood risk aspects and policies of the site allocations process. The latest climate change allowances will be considered to identify flood risk extents from all sources of flooding. The mapping outputs will assess the effects of climate change on all sources of flooding and identify areas where it is expected climate change to increase flood risk. The maps will also determine where the effects of climate change will make existing development unsustainable. This process will help identify any development that may need to be relocated to sustainable locations.

Recommendation 9

That the Council reviews the actions necessary for it to ensure that land required for current and future flood management is protected from development in order to mitigate the impacts of climate change.

Policy EN7 of the Councils Core Strategy, includes provisions to 'Safeguard areas which have the potential to increase flood storage provision and improve defences within the Rivers Aire and Wharfe corridors' and 'The Council will not permit development in areas which within the functional floodplain (Flood Zone 3b) as defined in the most up-to-date SFRA with the exception of water compatible uses and essential infrastructure'.

As described in Recommendation 8, the updated SFRA will produce maps of predicted flood risk from detailed computer flood mapping. The mapping outputs will assess the effects of climate change on all sources of flooding and identify areas where it is expected climate change to increase flood risk. This mapping will be used by the planning policy team when identifying future and existing areas of development.

Recommendation 10

That the Council reviews its record to date in enabling community engagement around the challenges of water management and flooding and explores the options for developing more resilient local networks in future years.

It was reported last year that the Council had produced a flood information packs which includes a laminated leaflet providing advice on what to do when a local flood warning is in place, when flooding is happening and recovering from flooding. It was also reported that the Council had been working extensively with Local Councils to voluntarily develop their Emergency and Flood plans. This also included providing resources such as Flood Sacks and Radios for communities to use as part of their Emergency and Flood plan response.

Over the last year, using Local Levy money granted through the Yorkshire Regional Flood and Coastal Committee, the Council have purchased a flood forecasting application called Meniscus MAP Rain. The application enables the Council to look at patterns of historical rainfall events in the district where we know that we have experienced historical flooding issues and forecast the progression of rainfall events in the future providing user defined forecast rainfall alerts. The product will assist the Council to identify where localised events are most likely to occur and therefore where to prioritise and target activities such as gully and trash screen clearance prior to a forecasted event and where Council resources may need to be focussed during an event. The tool will also be used to alert Parish and Town Councils or groups that hold Community Emergency and Flood Plans,

and residents in known hotspot areas of surface water flood risk therefore continuing to build on and support community resilience to flooding.

The Environment Agency utilise a river level gauge network to understand current and future flood risk on main rivers. Unfortunately, the network does not cover ordinary watercourses, the Environment Agency are at capacity in terms of main river gauges and have no funding available to progress community owned telemetry provision in Bradford District. Goose Eye in Oakworth, Keighley is a hamlet that was heavily impacted by a combination of watercourse and surface water flooding in December 2015 and as such. The Bradford Flood Programme Board have approved funding for a community led monitoring system to be installed so that the residents themselves can monitor water levels. The level monitoring will be used in combination with the Meniscus MAP Rain product to give us a better understanding of how reactive the watercourse catchment is and for residents to take an active role in flood resilience and recovery.

The Council are a partner in The Yorkshire Property Flood Resilience (PFR) Pathfinder project aims to increase the effective uptake of PFR across Yorkshire. The Yorkshire Pathfinder has been established to raise awareness of PFR and local flood risk within local communities and businesses, and aims to identify barriers to the uptake of PFR across a range of Yorkshire-based stakeholder groups. These include residential and commercial property owners and occupiers, the property sector and trades, building suppliers, insurers, financial influencers and flood risk management authorities. The findings will be used to develop and deliver a suite of resources to overcome such barriers, helping to increase levels of awareness and flood resilience to future flooding in Yorkshire. Touring displays will also be created for use at regional events and temporary exhibitions at Lead Local Flood Authority sites. In Bradford the Addingham Four Becks group will be hosting a display and also the Boathouse Inn in Saltaire has demonstrated the benefit of PLR in recent flood events.

Recommendation 11

That the Council works closely with Yorkshire Water to identify key places where surface water drainage problems exist in order to ensure that its action-planning delivers early, tangible results for our community.

Yorkshire Water are a member of the Bradford Flood Programme Board and are represented within the various sub groups that develop the capital flood risk works programme and flood resilience initiatives. The Council have also worked in collaboration with Yorkshire Water and the Environment Agency to identify flood risk prone areas and these have been included within the Price Review 19 submission to OFWAT.

Recommendation 12

That Yorkshire Water and the Environment Agency undertake a full investigation of possible sewage-related pollution sources in the Bradford Beck catchment in the next investment cycle (AMP7, which starts with PR19).

Yorkshire Water have a programme of works from 2015 to 2020 to deliver 100% event duration monitoring of waste water storm discharges across Yorkshire, the relevant data from which will inform the investigation into Bradford Beck.

Following campaigning, Yorkshire Water are required to carry out two investigations of the Bradford sewer system in the next business cycle; these will start in in April 2020. The first is called “Bradford Beck catchment investigation” and The objective of this catchment scale study is to understand the polluting inputs to the Bradford Beck system and their impact on the ecology, working in partnership with local interest groups, and to produce a detailed strategy for reducing pollution and improving ecological status.

The second study is to analyse whether the system meets the standards for intermittent discharges (ie in wet weather) and will be done by numerical model of the response of the system. Both of these projects are investigations. It may be the business cycle later (2025-29) that any significant improvements are made.

To compliment this work, the Council are partners in the Interreg North Sea Region SCORE project that is a wide ranging smart cities project looking at using / reusing data and open data to provide efficiencies in public sector delivery. At the moment the Council are scoping monitoring devices and systems in order to determine pollution levels in watercourse such as Bradford Beck. The Council are in discussion with Bradford College, Friends of Bradford’s Becks and Yorkshire Water about future Beck monitoring including pollution monitoring. This aligns with Yorkshire Water’s proposals for their Bradford Beck Catchment Investigation.

Key Line of Enquiry 4

Consider future climate change assumptions and their impact on the frequency and severity of flooding incidents.

Recommendation 13

That the Council urgently reviews both capital and revenue funding streams for maintaining council-owned drainage systems and watercourses/rivers in order to ensure that we deal with the rise in water flows and levels associated with climate change.

The Drainage Section do not receive capital funding to undertake maintenance works on council owned drainage infrastructure. The responsibility of drainage infrastructure will depend on which department or service manages the function of each individual asset. The Drainage Section is working with the Environment Agency, Yorkshire Water and other organisations to identify and progress flood risk schemes within their capital works programme to address property flooding, and is actively looking for match funding to reduce the pressure on existing drainage systems. The Council's Capital Flood Risk Programme is included within Appendix 1 for information. This shows where flood risk studies are being progressed in the district.

The Highways Service manages a range of existing drainage infrastructure including assets such as the carrier drains that serve the highways, road gullies, road side ditches, drainage outfalls, and culverted watercourses that pass under the highway. Budgets are used to maintain these assets are limited and base revenue budgets have decreased over recent years due to the spending constraints the Council is facing. Some sections are reported to use revenue budgets to undertake emergency maintenance projects however no capital budgets are available to implement a periodic asset maintenance programme.

With a reduction in base budgets for maintenance, the Highways Service have applied for other 'ad hoc' funding streams managed by the Department for Transport (DfT). In the year 2017/18 a total of £550k was drawn down from the National Productivity Investment Fund to spend on local drainage infrastructure improvements across the district.

The Council were successful in obtaining £2.7m of the £420m national DfT Additional Highway Maintenance fund 2018/19. This was split across assets with the majority spent on carriageway resurfacing and structural maintenance. £40k was allocated to 'Shipleigh type' gully replacements and £50k for culvert investigations/repairs in Oakworth Road.

A bid for capital monies for drainage maintenance/improvement works from the DfT's Local Highway Maintenance Challenge Fund 2019/20 proved unsuccessful.

The Council maintain 25 trash screens that protect downstream culvert systems from becoming blocked. The Trash Screens therefore provide protection to many key highway networks works plus approximately 250 residential properties. The maintenance works to keep the trash screens cleared are currently funded through Council staff revenue budgets.

Another flood risk management asset that is maintained using staff revenue budgets is Bradford Beck Overflow tunnel. The overflow tunnel was built in in the early 1990's and provides a standard of protection to 77 residential properties plus 158 businesses located within Bradford City Centre. Its operation and maintenance are vital to the City Centres viability.

As more flood risk management projects are delivered, these revenue budgets will be stretched and are likely to be underfunded to properly manage the assets that protect the properties and infrastructure within the district from flood risk.

Recommendation 14

That the Council continues to update its LFRMS to take account of the disproportionate impacts that arise from the growing risk of flooding events related to climate change.

It is a legislative requirement to update the LFRMS in line with the current six-year cycle for flood risk management. The LFRMS is up to date in accordance with current climate change guidelines but is a living document and will be reviewed accordingly. Specific actions (and examples of current working practice) within the LFRMS will be reviewed in the next update.

Recommendation 15

That the Council updates its LFRMS to incorporate the development of 'bottomup' actions to support sustainable drainage, mitigate the risk of flooding and enable communities to recover from flooding events.

It is a legislative requirement to update the LFRMS in line with the current six-year cycle for flood risk management. Specific actions (and examples of current working practice) within the LFRMS will be reviewed in the next update.

Key Line of Enquiry 5

Consider measures which could be taken to reduce the rate of water runoff into the river system.

Recommendation 16 (mirrors Recommendation 1)

That the Council publishes minimum design standards (in the form of supplementary planning guidance) so that developers and their consultants are clear on the standards required for acceptable planning applications in relation to water runoff and sustainable urban drainage systems, and seeks to ensure that this process is completed by the end of April 2018.

Please refer to response provided in recommendation 1.

Recommendation 17

That the Council engages proactively with partner organisations to identify opportunities for additional Natural Flood Management projects across the District (such as in the Clayton Beck catchment).

The Council are working with the Leeds Flood Alleviation Scheme Phase 2 (Leeds FAS2) project team, in partnership with the Environment Agency, to develop a catchment wide approach to reducing flood risk. This includes Natural Flood Management (NFM) measures on the upper and mid stretches of the River Aire as an integral part of phase 2 of the scheme. The scheme is identifying with landowners, which land is suitable for NFM measures. Also as part of the scheme, potential areas have been identified and shared with partners and the Leeds FAS2 project team. A substantial land bank is required to deliver the Leeds FAS NFM programme, and requires a significant amount of buy in from numerous landowners. The Leeds FAS2 project team are very keen to continue to work with large landowners throughout the River Aire Catchment and have continuously engaged with the Council on the potential to implement NFM measures within the district.

A pilot NFM project is being progressed on Harden Moor where the Council are landowners and are key partners in the design and delivery of the project. Private landowners are being engaged with a view to undertaking NFM interventions on their land and expanding the scope of the project.

The NFM project on Backstone Beck is covered in detail in recommendation 5.

Recommendation 18

That the Council works jointly with Friends of Bradford's Becks on water management projects in the Canal Road area.

Each year the Council take a report of the Strategic Director of Place to the meeting of Regeneration and Environment Overview and Scrutiny Committee that outlines the ongoing partnership work with the Friends of Bradford's Becks (FOBB). The last report was presented at the 10th March 2020 meeting and below are a description of ongoing water management projects.

Friends of Bradford's Becks have been engaged by the Council in discussions with the West Yorkshire Transport Fund scheme along the Shipley and Canal Road Corridor. The renaturalisation of sections of Bradford Beck along this corridor is a joint key aspiration of the Councils and FOBB and work to achieve this is a priority. As the highway scheme has progressed it has become increasingly clear that it has overlaps in the objectives with the

renaturalisation of Bradford Beck. A Peer Review Group will be established to evaluate the designs and ideas of the Project to ensure that the Project delivers multiple outcomes whilst achieving its main objective to reduce flood risk in the catchment. The Peer Review Group will monitor the Project during key milestones. It is intended that FOBB will sit on the Peer Review Group to include other stakeholders from the environmental community.

Furthermore, The Council, The Environment Agency (EA), The Friends of Bradford Beck and the Wild Trout Trust are working in partnership to deliver a £90,000 EA funded scheme to re-naturalise the northern length of Bradford Beck. This includes the removal of Invasive Non- Native Species (INNS), habitat creation works, pedestrian access improvements and works to improve fish passage. Fish passage works will include the installation of baffles on existing barriers to slow the flow of water in key areas. Habitat works will include the planting of wetland species in areas cleared of invasive species, together with the enhancement of woodland ecology on surrounding river banks. Improved footpaths and signage will help walkers access the beck and raise its profile amongst local residents. The main update is that the fish pass works are now on site with some complete and wetland planting and habitat creation works and taking place. The project is also looking at engaging with the market to design and build another larger scale (£25-30k) fish pass on the Environment Agency weir close to Leeds Road in Shipley.

Recommendation 19

That the Council works with partner organisations to gather together existing knowledge and practice of Natural Flood Management in the form of a 'best practice manual' in order to engage the community and guide implementation of these kind of measures.

The Council is currently working with other signatories of the White Rose Forest (WRF) to design the Harden Moor Pilot Natural Flood Management project and are part of the project team for the NFM scheme to be implemented on the Backstone Beck Tributary on Ilkley Moor. This is in the River Wharfe catchment. The project in Ilkley has secured £167K of DEFRA NFM funding. The approaches we are looking to implement on the moor (slowing the flow, drainage reversal, sphagnum translocation, increasing tree cover and additional environmental benefits of increased biodiversity, active blanket bog management and re-wetting areas of the moor) are all replicable on other catchments in the District and beyond. These projects will help the Council broaden its knowledge and understanding of NFM and how the multiple measures can benefit the catchment by reducing water flows but also increase biodiversity and community engagement.

A best practice manual in regards to Natural Flood Management has been put together by the Yorkshire Dales National Park and this is regular used by the Council in pursuing NFM opportunities. A link to the guide is below;

https://www.yorkshiredales.org.uk/wp-content/uploads/sites/13/2020/03/11301_flood_management_guide_WEBx.pdf

Recommendation 20

That the Council adopts a 'whole catchment' approach to reducing water runoff, in conjunction with neighbouring local authorities (particularly Leeds, but also those 'upstream' of our District) and partner agencies.

The whole catchment approach is central to any schemes being discussed and funding bids are increasingly being submitted on a catchment-wide basis encompassing multiple projects through a number of local authority administrative areas.

The Bradford Aire Flood Alleviation Study was commissioned by the Bradford Flood Programme Board and has investigated the use of direct interventions and more catchment wide solutions to reduce flood risk for communities along the River Aire including Keighley, Bingley, Baildon, Shipley and Apperley Bridge. The study has investigated the use of upstream storage solutions within Craven and the western parts of the district at reducing flood levels along the River Aire. The early results show levels can be reduced however the cost of implementing these measures are proportionally high and therefore current funding arrangements sourced through DEFRA do not fully fund any of the measures. Further catchment wide discussion are now taking place with the Environment Agency to see where multi benefit schemes across the catchment could help fill the funding gaps.

The Council are a member of the River Wharfe Flood Partnership which is a group that includes The Environment Agency, Yorkshire Water, Yorkshire Dales River Trust, Leeds City Council and North Yorkshire Council. The Partnership has been recently successful in securing £55k of Local Levy monies from the Yorkshire Region flood and Coastal Committee to continue to drive a programme of works that involves partnership members working together to deliver strategic objectives of community engagement, flood risk management and environmental improvements. The measures to achieve this will include raising awareness of how rivers work and helping to reduce the risk of flooding, raising resilience and preparedness and developing a sustainable river stewardship project and plan.

Recommendation 21

That the Council incorporates the ‘Green Streets’ approach in its planning process and infrastructure development schemes.

The Council have developed a ‘Housing Design Guide’ and are developing a ‘Street Design Guide’ that will emphasise the importance and specify the use of Blue Green Infrastructure and Green Street Initiatives within developments. The Street Design Guide is currently out for consultation and the Housing Design Guide was adopted as a Supplementary Planning Documents in 2020. A link to the document is below.

[https://www.bradford.gov.uk/Documents/SupplementaryPlanningDocuments/Adopted%20SPDs/Homes%20and%20Neighbourhoods%20Design%20Guide%20SPD//Homes%20and%20Neighbourhoods%20-%20A%20guide%20to%20designing%20in%20Bradford%20SPD%20\(screen%20version\).pdf](https://www.bradford.gov.uk/Documents/SupplementaryPlanningDocuments/Adopted%20SPDs/Homes%20and%20Neighbourhoods%20Design%20Guide%20SPD//Homes%20and%20Neighbourhoods%20-%20A%20guide%20to%20designing%20in%20Bradford%20SPD%20(screen%20version).pdf)

Furthermore, Policy SC6 of the Councils Core Strategy, includes provisions to provide clearer direction to new development in contributing towards linking areas and corridors of Green Infrastructure. The policy also now provides for further strategic information on Green Infrastructure as it provides a common thread that links other important issues in the Core Strategy including: local resilience to climate change (in relation to the provision of flood water storage, sustainable drainage and urban cooling), sustainable transport and housing, leisure and tourism, health and well-being and making space for water.

Also within Policy SC6 the River Corridors of the Aire and Wharfe and the South Pennine Moors are identified as strategic Green Infrastructure assets due to the opportunities offered to enhance the living landscape as a resource for people and wildlife and to address future needs for flood alleviation, water management, carbon capture and recreation.

Recommendation 22

That the Council identifies future opportunities where it can show leadership in reducing and slowing water flow by its own actions, such as in the road and cycle path engineering schemes that it designs and through its ongoing refurbishment of the Council estate (possible measures may include controlling roof drainage by disconnecting building drains from the sewer system and installing planters, soakaways and green roofs).

The West Yorkshire Transport Fund projects currently include highway improvements works in Great Horton, New line Junction, Hard Ings, Keighley and Bradford to Shipley Corridor. The design and implementation of the drainage solutions that serve these scheme are all being delivered, in-house, by the Drainage Department. As a result, all these highway schemes incorporate measures to reduce quantities of surface water and improve the quality of runoff from the new carriageway areas through the use of SuDS.

The Housing Section have delivered a number of residential sites within the district that include a range of sustainable drainage systems. Cliffe Lane in Baildon includes individual infiltration structures that serve each dwelling and the adopted highway drains to an infiltration swale. Both the Bronte School and Braithwaite School housing developments incorporate measures to reduce quantities of surface water runoff from the new carriageway and dwelling areas through the use of SuDS.

Three recent school expansion projects at Immanuel College, Ilkley Grammar and Poplars Park have installed underground surface water storage facilities to manage the rate in which surface water leaves the site ensuring flood risk downstream is not increased.

Recommendation 23

That the Council considers either (a) signing up to the 'Blue and Green Infrastructure' declaration issued by Newcastle City Council and five partner agencies in February 2016 or (b) issuing its own declaration in order to aid the prioritisation of Blue-Green infrastructure in managing flood risk across Bradford District.

The Councils promotion of Blue Green Infrastructure is discussed in detail within recommendation 4 in the description of the EU BEGIN project.

Furthermore, Policy SC6 of the Councils Core Strategy, includes provisions to provide strategic information on Green Infrastructure as it provides a common thread that links other important issues in the Core Strategy including: local resilience to climate change (in relation to the provision of flood water storage, sustainable drainage and urban cooling). The policy aspires to create space for both green and blue (ie water-based) infrastructure within the city centre, the Canal Road Corridor and elsewhere within the densely developed urban area will form an essential element in the District's approach. The policy recognises that space for water can manage flood risk, improve water quality and access

to waterways, support regeneration and provide wetland habitats and landscape enhancement.

Recommendation 24

That the Council investigates what more it can do to promote community and individual awareness of what can be done locally to reduce water runoff and flooding risk.

See Recommendation 4 & 5. All community engagement is covering all aspects of Flood and Water Management from awareness raising to river stewardship and riparian and individual citizen responsibilities.

Key Line of Enquiry 6

Consider the effect of increased flooding risk on proposed development and the effect of proposed and possible future development on run off and flooding risk.

Recommendation 25

That the Council incorporates sustainable urban drainage messages and policies into its broader community engagement, such as the benefits of permeable driveways, along the lines of the Ten Point Plan produced by Friends of Bradford's Becks.

See Recommendation 4 & 5. All community engagement is covering all aspects of Flood and Water Management from awareness raising to river stewardship and riparian and individual citizen responsibilities.

4. OTHER CONSIDERATIONS

None

5. FINANCIAL & RESOURCE APPRAISAL

Recommendations 6 of the adopted Water Management Scrutiny Review relate to the potential for using funds from the Community Infrastructure Levy for flood alleviation measures.

6. RISK MANAGEMENT AND GOVERNANCE ISSUES

If there are no significant risks arising out of the implementation of the proposed recommendations it should be stated but only on advice of the Assistant Director Finance and Procurement and the City Solicitor.

7. LEGAL APPRAISAL

None

8. OTHER IMPLICATIONS

8.1 EQUALITY & DIVERSITY

None

8.2 SUSTAINABILITY IMPLICATIONS

None

8.3 GREENHOUSE GAS EMISSIONS IMPACTS

None

8.4 COMMUNITY SAFETY IMPLICATIONS

None

8.5 HUMAN RIGHTS ACT

None

8.6 TRADE UNION

None

8.7 WARD IMPLICATIONS

All wards are impacted by flood risk and water management.

**8.8 AREA COMMITTEE ACTION PLAN IMPLICATIONS
(for reports to Area Committees only)**

None

8.9 IMPLICATIONS FOR CORPORATE PARENTING

None

8.10 ISSUES ARISING FROM PRIVACY IMPACT ASSESSMENT

None

9. NOT FOR PUBLICATION DOCUMENTS

None

10. OPTIONS

The report seeks to update members on progress achieved on the recommendations of the Water Management Scrutiny Review. Members are asked to consider the report and provide views and comments.

11. RECOMMENDATIONS

That Bradford Council's Regeneration and Environment Overview and Scrutiny Committee receives a report back before the end of October 2021 which monitors progress against the recommendations contained within the Water Management Scrutiny Review.

12. APPENDICES

Bradford Councils Capital Flood Risk Programme

13. BACKGROUND DOCUMENTS

Water Management Scrutiny Review Report