
Report to: Green Economy Panel

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Subject: **Flooding and Natural Flood Management Update**

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1.0 Purpose of this report

1.1 To summarise the work of partners to address flood risk issues and deliver Natural Flood Management (NFM).

2.0 Information

2.1 In collaboration with partners, the Combined Authority developed the Leeds City Region Flood Review following the 2015 Boxing Day flood events. The Review sits within Strategic Economic Framework and outlines the Combined Authority's approach to Flood Risk Management (FRM).

2.2 In collaboration with key stakeholders such as partner Councils, the Environment Agency (EA) and Yorkshire Water the Combined Authority has supported the delivery of ambitious and innovative FRM and Natural Flood Management (NFM) schemes.

2.3 The resilience of the City Region to flood risk is vitally important to tackling the climate emergency. Our communities need to be helped to become more resilient to current and future weather events, which will only increase as our climate continues to change. The work undertaken to improve FRM provides an important contribution to the City Region's work to address the Climate Emergency, supporting the commitment made by the City Region and all its council partners to become net zero carbon by 2038 at the latest with significant progress by 2030.

Current Capital Programme (up to March 2021)

2.4 The Combined Authority is investing £20 million from the Leeds City Region Growth Deal Three, alongside over £200 million of partner match, into flood alleviation schemes across the region. To date, over £19.833 million (£16.262

million spend) has been awarded to eight projects. Projects include Skipton, Mytholmroyd and Leeds Flood Alleviation Scheme (FAS) 1, alongside the Wyke Beck Flood Alleviation Scheme, and NFM projects in the Colne, Calder and Upper Aire catchment areas. Approvals have recently been granted for Leeds FAS2 and Hebden Bridge. When complete, the programme will protect up to 1,385 businesses and at least 11,100 jobs from the risk of flood.

- 2.5 The NFM programme includes £1.7 million interventions led by the National Trust and Yorkshire Wildlife Trust in the Upper Aire and Colne/Calder catchments, designed to slow the flow of water and help protect 1,075 businesses and 2,936 homes. This innovative programme, which will be monitored by the University of Leeds, will support the City Region's ambition to become a trailblazer in NFM techniques.

Environment Agency

- 2.6 The Environment Agency are committed to working with partners on rising to the challenge of the nature and climate emergencies. This requires extensive collaboration and agile programme development, as we learn at pace whilst delivering at scale. Critically, this also involves building capacity in our partner organisations, supporting development and sharing learning, to make best use of everyone's skills and experience.
- 2.7 The Environment Agency are working with the Combined Authority and local authorities, as part of the West Yorkshire Flood Risk Partnership, to develop and deliver the current (2015-21) and next (2021-27) six year programmes of priority schemes. This includes the proposed £15m NFM programme included in the Combined Authority's bid to government. Further funding has been identified for Calderdale to scale up existing catchment wide schemes and for Leeds to deliver its ambitious FAS2 NFM programme.

An overview of progress to date in the Aire Catchment:

- 2.8 The Leeds FAS's NFM programme continues to scale up delivery of its ambitious programme of works to reduce flood risk to Leeds and is the largest NFM programme in the UK to date. By April 2021, the Environment Agency will have planted 50,000 trees and facilitated a further 300,000, all of which contribute to reducing flood risk. The Environment Agency has awarded a contract to the White Rose Forest, the City Region's community forest joint venture & of which all the West Yorkshire local authorities are members, to find, engage and support landowners to participate in the programme.
- 2.9 The programme has completed its series of pilot projects, having delivered sites in partnership with Bradford Council, Leeds University, the National Trust, Yorkshire Dales National Park and others.
- 2.10 The programme team are developing a number of digital geo-spatial tools on a single platform that can be used live on site, that will automate the process of site design and delivery. Functions include land bank data management, site concept design, pre-construction information, carbon calculation and monitoring. The platform will facilitate site visits with all the data relating to that

site in hand, working with the landowner to develop solutions in real-time, which will then be passed for further development through the platform, including developing planning applications, preparing contracts and estimating budgets.

- 2.11 Once these tools have been tried and tested on the River Aire catchment, the Environment Agency and Leeds City Council hope that they can be used in other areas as part of the response to the climate emergency.
- 2.12 The programme is now, subject to COVID-19 impacts, moving into the delivery phase. Developing the programme has included significant stakeholder engagement including; engaging landowners, working with local environmental organisations and community groups, sharing & learning best practices from across the world, developing research and monitoring proposals. In 2021 the Environment Agency will collaborate with partners to deliver works at:
- Broughton Hall (a 3,000 acre estate with significant NFM opportunity)
 - the Brownlee Triathlon Site in Leeds, which will showcase different methods and enable detailed academic research at Leeds University
 - East Riddlesden Hall estate with the National Trust
 - Various sites in Keighley, as part of the Town Council's 'People's Trees' initiative.

An overview of progress to date in the Upper Calder Catchment:

- 2.13 Following the 2015 Boxing Day floods, £1million (£800k of DEFRA booster) was made available for NFM across Calderdale to support the delivery of the Calderdale Flood Action Plan, managed by the NFM Group and led by Yorkshire Water as part of the Calderdale Flood Partnership. Nearly £900,000 of this is delivering practical work on the ground, £500,000 of which has been allocated to the Calderdale landowner grant scheme (co-produced with third sector and statutory organisations) and Calderdale Council are managing grants to landowners who introduce NFM measures on their land. As of October 2020, 12 out of 30 private landowner schemes had been completed.
- 2.14 The original £1 million allocated for NFM across Calderdale has enabled wider investment, through match funding and project startup costs, of more than £3.7 million in the development and delivery of several partnership projects, including:
- 1) **Calder Greening** – a European and Environment Agency funded programme led by Calderdale Council. This scheme includes nature-based solutions on Brearley Fields a floodplain, piloting sustainable approaches to invasive species and other nature based work on the mid-Calder.
 - 2) **Landscape for Water** – a National Trust and Yorkshire Water initiative, as part of the White Rose Forest - focused on large upland landowners, including large scale targets for woodland planting and peatland restoration.
 - 3) **Moors for the Future** – leading on strategy for moorland climate change resilience especially in relation to fire risk and baselining the current moorland status in Calderdale.
 - 4) **Community and volunteer led initiatives** including work led by Treesponsibility, Slow the Flow, Calder Future and the Yorkshire Wildlife

Trust. For example: promoting the use of SUDs in schools and across communities, a virtual campaign on controlling invasive species and developing pipelines of potential NFM projects.

- 5) **Brighouse FAS** - European funded work to incorporate nature based solutions to develop an integrated, multi benefit scheme.

Yorkshire Water

- 2.15 Yorkshire Water's most significant NFM project to date is the 'Growing Resilience' project, which was delivered in partnership with National Trust, Woodlands Trust and local community partners.
- 2.16 Over a three-year period, up to winter 2019/20, this project delivered some 151 hectares of new woodland at Gorpley Reservoir (upper Calder) and in the Wessenden Valley (upper Colne), the restoration of 85 hectares of peat bogs, heath and Molinia (moor grass) and the construction of over 650 'leaky dams'. In addition, over 3,000 metres of fascines (bundles of brushwood) were dug in to help stabilise stream banks and slopes, and new areas of land were fenced for sustainable grazing by sheep and cattle.
- 2.17 The overall project, which also included NFM activity on the National Trust's estate at Hardcastle Crag, had a total value of £2.6m, of which £1.3m came from the Combined Authority, with the remainder as either funds or in-kind support from a wide range of partners, including the Forestry Commission, Moors For The Future Partnership, Environment Agency, Woodland Trust, Yorkshire Water, National Trust Calderdale Council and community groups. The work will help to slow the flow of water along the Colne and Calder river catchments.
- 2.18 In addition, as part of its commitment to planting 1 million trees by 2028, YW has been working closely with its tenant farmers and other stakeholders to deliver further tree planting across its estate, where this is in keeping with the local landscape and farming activity. Including the trees planted at Gorpley, over 213,000 trees have been planted to date, some 200,000 of these are within West Yorkshire.

Future Funding (2021/22-2026/27)

- 2.19 Partners have identified £240m of flood risk management investment across West Yorkshire over the period 2021/22-2026/27 covering 125 projects of varying degrees of scale & complexity. The Environment Agency have an indicative allocation of £146m from DEFRA against the 125 projects, leaving £94m to be found from other sources.

Combined Authority

- 2.20 Building on the success of the Growth Deal Three funded programme, the Combined Authority has worked with partners to develop a programme of priority schemes for the 6-year programme for 2021/22-2026/27 delivery. The programme requires £120m of additional funding from government, including:

- £103.9m to unlock local contributions and private funding to deliver 28 FRM schemes with a total capital value of £176.4m.
- £15m Natural Flood Management programme to deliver the Leeds and Upper Calder schemes and support a £8.3m pipeline of other projects.

2.21 The Combined Authority is engaging with government departments to address this funding gap to enable the programme to be delivered.

2.23 The Combined Authority is developing its approach to operating the Single Investment Fund (SIF) established under the devolution deal that will be applied across all the Authority's pipelines of schemes.

Yorkshire Water

2.24 Following the success of the 'Growing Resilience' project, the Yorkshire Water and National Trust 'Common Cause' partnership is now planning a further significant landscape scale programme of NFM activity across the upper Calder and Colne valleys – the 'Landscapes for Water' project. Following initial consultation with tenants and other local stakeholders, and preliminary design work, this has identified the potential opportunity for a further 581 hectare woodland creation on National Trust and Yorkshire Water land from Holmbridge, through the Marsden Estate and north as far as Hebden Bridge.

2.25 Further significant NFM activity is planned in this same area. An application for development funding for the woodland component of this was made to the White Rose Forest in late 2020, under the Community Forests Nature for Climate programme. If successful, then it is hoped that woodland planting will commence in late 2021. The partnership is also exploring other sources of funding to deliver other parts of the project including NFM. This could include aligning with the Combined Authority's proposed City Region NFM programme which is currently seeking Government support in order for it to proceed.

2.26 As with 'Growing Resilience', 'Landscapes for Water' has a strong emphasis on partnership funding and collaboration, with notable support from the Woodlands Trust, White Rose Forest and Calderdale and Kirklees Councils, as well as Yorkshire Water and National Trust.

2.27 Yorkshire Water will also continue to deliver other projects across its estate as part of the 1 million trees commitment, and also through its Asset Management Plan (AMP) 7 regulatory programme for upland catchment restoration (blanket bog & peat).

2.28 Alongside NFM activity, Yorkshire Water continues to work collaboratively with the EA and Local Authorities across West Yorkshire on other measures that will reduce flood risk to our communities. Of particular note is the partnership work with EA on schemes in Calderdale, including Hebden Bridge and Brighouse, and also close working with Leeds City Council on a SuDS project to reduce flood risk in Pudsey.

3.0 Tackling the Climate Emergency Implications

- 3.1 Climate change drives extreme weather events such as storms and prolonged periods of wet weather which cause floods. The programmes of work outlined in this paper seek to adapt our communities so that they become more resilient to future flood events.
- 3.2 Delivery of Natural Flood Management also supports wider adaptation and mitigation measures by supporting tree planting, peat restoration and wider green infrastructure activities. These measures offer a mix of benefits including carbon sequestration, biodiversity enhancements and urban cooling.

4.0 Inclusive Growth Implications

- 4.1 Climate change drives adverse weather events such as floods and heatwaves, both of which significantly affect people's health. Climate change risks are likely to worsen health inequalities.
- 4.2 The flood risk management work by partners recognises the importance of the health and wellbeing benefits provided by enhanced flood protection. This is particularly important when considering NFM measures, which can offer wider health benefits when integrated with green infrastructure.
- 4.3 The flood pipeline developed with partners will include stages of community engagement and co-development of schemes as they develop.
- 4.4 NFM projects present an excellent opportunity to collaborate across public, private and third sector. As delivery increases and COVID-19 restrictions reduce, there is scope for more focus on where volunteers come from and how these projects can develop skills and experience in an emerging sector. For example, the NFM Upper Aire project will support local volunteers, corporate volunteer days and trainees through 78 practical volunteering days (giving a total of 562 individual volunteer days in total).

5.0 Financial Implications

- 5.1 Many of the FRM schemes in the Environment Agency's pipeline of schemes have significant funding gaps. The Combined Authority is working with partners to engage with government to address this issue.

6.0 Legal Implications

- 6.1 There are no implications associated with this paper.

7.0 Staffing Implications

- 7.1 Capacity to deliver this work programme is constrained. The Combined Authority and partners are likely to have the resources to deliver but timescales can often become pressured e.g. after a major flooding event with resource being directed to crisis management.

8.0 External Consultees

8.1 The work outlined in this update has used an extensive partnership approach. This includes industry, public sector, business and academia.

9.0 Recommendations

9.1 The Panel to note the work undertaken in relation to Flood Risk Management activities.

10.0 Background Documents

10.1 None.

11.0 Appendices

11.1 None.