Gateshead Council

REPORT TO CABINET
14 December 2021

TITLE OF REPORT: **Northumbria Groundwater Flooding Project**

REPORT OF: **Colin Huntington, Strategic Director, Housing, Environment & Healthy Communities**

Purpose of the Report

1. To inform Cabinet that the Council has been awarded a Department of Food & Rural Affairs (DEFRA) grant to map groundwater flood risk, to develop groundwater flood risk maps and to consider a groundwater flood risk warning system for Gateshead and the surrounding area.

Background

2. In November 2020 DEFRA invited expressions of interests from lead local flood authorities (LLFAs) to bid for funding from the Flood and Coastal Resilience Innovation Programme (FCRIP). The main aim of the programme is to encourage local authorities, businesses and communities to test and demonstrate innovative practical flood resilience actions in their areas. Gateshead Council's LLFA duties are managed by the Highway & Flood Risk Management (H&FRM) team in Highways & Waste and they prepared and submitted the bid.

3. The project will measure rising groundwater levels (using new and existing deep boreholes), identify groundwater flood risk, produce groundwater flood risk maps and assess the potential for a groundwater flood warning system. It will inform potential flood risk management schemes to protect existing homes and property and will also inform strategic planning documents to enable future development. Mine water pumping and climate change mitigation will be important elements of the project.

4. The winning projects were announced in March 2021. The programme will fund twenty-five projects to provide innovative practical actions. The projects must improve resilience to flooding and coastal change, including the ability to adapt to future climate change. These resilience actions will go beyond and are outside, those funded through the government's main flood and coastal erosion grant in aid (GIA) programme. All projects must be partnerships lead by a LLFA and must include other flood risk management authorities.

5. Unlike the GIA funded flood risk management schemes, which require third party funding to complement the grant, the FCRIP is fully funded by DEFRA and will require no financial contribution from the participating LLFAs. The grant is a maximum of £6m to be spent before the end of the 2026/27 financial year. LLFAs

have strategic responsibility for managing groundwater flood risk. The project findings will be shared with other LLFAs for possible implementation nationally.

Proposal

6. The project partners include the Environment Agency, Northumbrian Water, Newcastle University, the Coal Authority and neighbouring local authorities. It is proposed that Gateshead's Flood Risk Management Team will lead and manage the project.

Recommendations

7. It is recommended that Cabinet:

(i) notes the award of the FCRIP grant;
(ii) approves acceptance of the grant; and
(iii) approves the Highway & Flood Risk Management team to manage the project.

For the following reasons:

(i) To map groundwater flood risk in Gateshead;
(ii) To inform future flood risk management schemes, to inform strategic planning & development policy and to mitigate against climate change groundwater flood risk.

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Policy Context

1. The proposals support the pledges within Making Gateshead a Place Where Everyone Thrives.

Background

2. Appendix 2 contains the DEFRA guidance for the FCRIP bid and award. Appendix 3 contains the assurance of funding letter from DEFRA.

3. The project will examine groundwater flood risks associated with:
   - high intensity and/or long duration rainfall resulting in extremely high groundwater levels in an aquifer and groundwater emergence;
   - the cessation of groundwater abstraction for water supply or mine water control (dewatering) purposes and consequent groundwater rebound;
   - use the latest monitoring technology in partnership with Newcastle University to accurately monitor groundwater levels;
   - use the detailed groundwater monitoring to develop live mapping and monitoring of groundwater to understand real time local risk;
   - mapping and monitoring of groundwater, will enable flood risk maps to be produced, giving an evidence-based approach to groundwater risk management;
   - understand how industrial heritage, historic groundwater management and urbanisation has changed the behaviour of groundwater in the Northumbria region;
   - develop a better understanding of the integrated risks groundwater and other sources of flooding pose to flood risk infrastructure;
   - develop a community engagement approach to give a better understanding of groundwater and how to manage it;
   - investigate engineered solutions and predictive technology to improve resilience to groundwater flooding;
   - develop a groundwater management system based and evidence for it to be adopted and applied nationally.

4. The project will produce a network of groundwater and minewater monitoring stations (boreholes with monitors) recording water levels in real time for long term, short term and resilience flood risk planning covering the area of the former Northumberland and Durham coalfields. It will provide verified evidence for local planning authority, sewerage undertaker and lead local flood authority strategic flood risk planning policies.

5. Measured and predicted rising groundwater levels will inform local authority local plans for development land allocation and will include climate change mitigation for development whole life. Long term planning for groundwater infiltration into the public sewerage system will also be possible.

Consultation

6. The Cabinet Member for Environment & Transport has been consulted and supports the proposals.

Alternative Options

7. There are no alternative options.

Implications of Recommended Option

8. **Resources:**

   a) **Financial Implications** – the Strategic Director, Resources & Digital confirms that there are no financial implications arising directly from this report. Appendix 3 contains the assurance of funding letter from DEFRA.

   b) **Human Resources Implications** – there are no human resources implications.

   c) **Property Implications** – no property implications have been identified.

9. **Risk Management Implication** – there are no risk management implications.

10. **Equality and Diversity Implications** – there are no equality and diversity implications.

11. **Crime and Disorder Implications** – not applicable.

12. **Health Implications** – reducing flood risk has been shown to improve mental health, supporting the Active & Healthy Gateshead agenda.

13. **Climate Emergency and Sustainability Implications** – the project outputs will help to mitigate rising (and falling) groundwater levels likely with climate change predictions for the change in rain patterns and possible change in mine water pumping regimes.

14. **Human Rights Implications** – there are no human rights implications.

15. **Ward Implications** – the project has the potential to affect all wards.

16. **Background Information** – none.