

**Manchester City Council
Report for Information**

Report to: Environment and Climate Change Scrutiny Committee - 11
November 2021

Subject: Approach to Flood Prevention and Management

Report of: Strategic Director (Neighbourhoods)

Summary

This report provides the Committee with an overview of the approach to flood prevention and management including:

- How this is coordinated locally and how this is delivered with neighbouring authorities that impact on Manchester.
- Flood Risk Management and Resilience.
- Lessons learnt from previous recent events.
- Role of the Civil Contingencies Unit.
- Information on the strategies and planning in relation to local reservoirs.

Recommendations

Committee members are asked to note and provide comments on the report.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city

Flooding events are often a result of severe weather events caused by climate change. Measures to prevent and manage flooding, particularly green infrastructure projects and nature-based solutions can contribute to carbon reduction.
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Manchester Strategy outcomes	Summary of how this report aligns to the OMS
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	Measures to improve flood defences, contributes to job creation and to protecting infrastructure which has a positive impact on both residents and businesses
A highly skilled city: world class and home-grown talent sustaining the city's economic success	Measures to improve flood defences, contributes to job creation and to protecting infrastructure which has a positive impact on both residents and businesses

A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	The poorest people are often the most disadvantaged by the impacts of flooding. Measures to improve flood resilience and involving communities in doing this contributes to unlocking potential within communities.
A liveable and low carbon city: a destination of choice to live, visit, work	Flooding is often linked to the effects of climate change. Green infrastructure flood protection measures and nature-based solutions may also contribute to carbon reduction
A connected city: world class infrastructure and connectivity to drive growth	Flooding events can cause significant disruption to transport and other infrastructure. Improving responses to flooding and flood defences protects critical infrastructure which is important to driving growth

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

Report to Greater Manchester Combined Authority 10 September 2021: Response to Flood Risk Management Issues

Report to Greater Manchester Combined Authority 24 September 2021: GMCA, Environment Agency and United Utilities Memorandum of Understanding

1.0 Background

- 1.1 In recent years flooding incidents have become more prevalent across Greater Manchester. Fortunately, Manchester has not experienced the significant damage experienced by some neighbouring authorities during the Storm Eva Boxing Day floods of 2015 but the recent Storm Christoph in January this year threatened widespread flooding across Greater Manchester with the river Mersey reaching unprecedented levels and resulting in the evacuation of 3000 properties across Didsbury and Northenden.
- 1.2 Current estimates suggest that across Greater Manchester there are more than 48,000 properties at risk from river flooding. (Source: Environment Agency). When flooding occurs it can impact, not only those whose homes are flooded, but also essential transport services, energy and water infrastructure, schools and workplaces. Flooding remains one of the greatest risks identified on the Greater Manchester Community Risk Register. Through climate change this risk is increasing, resources are limited and further investment in flood defences is required.
- 1.3 Flood risk management includes actions to prepare, respond and recover from flood events. Engineering alone is not a solution, as climate change is increasing the intensity of rainfall and the cost to re-build the entire sewer network and increasing the height of existing defences would be prohibitive and disruptive. Hard defences also require long term maintenance and an upgrade once they no longer provide the necessary standard of protection. A mix of solutions is required for example, green infrastructure such as sustainable drainage systems (SuDs) and other nature-based solutions across catchments and within urban areas making space for water whilst slowing the flow. As explained below flood risk and water management issues are responsibilities that cut across many organisations, nationally, regionally and locally.
- 1.4 The legislation governing flood risk management is The Flood and Water Management Act 2010 which provides for better, more comprehensive management of flood risk for people, homes and businesses, helps safeguard community groups from unaffordable rises in surface water drainage charges, and protects water supplies to the consumer. This act also aims to reduce the flood risk associated with extreme weather.
- 1.5 There is no single body responsible for managing flood risk in the UK. Responsibility is shared across a number of bodies as set out below.
 - **DEFRA** has overall national responsibility for policy on flood and coastal erosion risk management and provides funding for flood risk management authorities through grants to the Environment Agency and local authorities.
 - **The Environment Agency** is responsible for taking a strategic overview of the management of all sources of flooding. The Agency also has operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea, as well as being a coastal erosion risk management authority.

- **Local Authorities** - Manchester City Council, along with the other 9 GM local authorities, is a **Lead Local Flood Authority** (LLFA) and is responsible for developing, maintaining and applying a strategy for local flood risk management in our area and for maintaining a register of flood risk assets. The council also has lead responsibility for managing the risk of flooding from surface water, groundwater and ordinary watercourses, which can include streams, drains and culverts.
- **Highway Authorities** are responsible for providing and managing highway drainage and roadside ditches and must ensure that road projects do not increase flood risk.
- **United Utilities** is responsible for managing the risks of flooding from water and foul or combined sewer systems providing drainage from buildings and yards.

1.6 Under the Flood and Water Management Act 2010 all risk management authorities mentioned above have a duty to co-operate with each other and to share data. The Pitt Review, published in 2008 following widespread flooding that took place in England in June and July 2007, recommended the need for flood risk management authorities to improve partnership delivery of flood risk management for the benefit of their communities.

2.0 Flood risk management across Greater Manchester

2.1 The Regional Flood and Coastal Committee (RFCC) is a statutory committee as defined by the Flood and Water Management Act (2010). It has 3 main purposes:

- Ensuring coherent plans are in place for identifying, communicating and managing flood risks across catchments,
- Promoting efficient, targeted investment in flood risk management,
- Providing a link between flood risk management authorities and other relevant bodies to develop mutual understanding of flood risks in their areas.

2.2 To facilitate joined up conversations with infrastructure providers and to overcome barriers to integrated planning and delivery, GMCA established the Strategic Infrastructure Board (SIB). The SIB also provides engagement with the key infrastructure providers such as Electricity Northwest, Cadent, the Environment Agency and United Utilities and has been key to creating the collaborative approach to infrastructure delivery across Greater Manchester.

2.3 The Greater Manchester relationship with EA and UU was further strengthened in September 2021 through agreement to enter into a Memorandum of Understanding with the EA & UU, this aims to achieve a reduction in flood risk, improvements in water quality and efficiency, more resilient and liveable places and developments, enhancement to natural capital, reduction in carbon emissions and an increase in investment into Greater Manchester.

- 2.4 As Lead Local Flood Authority, Manchester City Council has 2 Flood Risk Officers based in the Highways service who are responsible for water management aspects of development control/planning applications and advise on sustainable drainage features. In addition to this, the planning and cyclic maintenance undertaken by the Highways service provides flood prevention in respect of surface water mitigations.
- 2.5 The Civil Contingencies Act 2004 is one of the most relevant pieces of legislation that provides emergency planning for flooding. The Act provides a framework for responders to support the planning for and response to civil emergencies, including flooding incidents. Under The Act, responders are responsible for warning and informing residents, before during and after incidents. For flooding the Environment Agency would be the lead agency and will provide this information through flood alerts and warnings. During a flooding incident the Fire Service is responsible for any water rescues and the local Authority is responsible for supporting displaced people and providing Humanitarian Assistance. The Greater Manchester Resilience Forum (GMRF) is the statutory partnership with overall responsibility for coordinating activity under this legislation. A full list of GMRF partners is included in Appendix 1.

3.0 Initiatives to Tackle Flood Risk within Manchester

- 3.1 Rivers and other watercourses flow through many different local authority areas both within and beyond GM therefore investment in flood risk management projects is at a regional rather than very local area. Some of these are delivered by Local authorities and some by the Environment Agency.
- 3.2 The pipeline of flood risk projects identified in the current Greater Manchester 6yr Flood and Coastal Erosion Risk Management programme 2021 – 2027, will reduce the risk from flooding to approx 20% of properties in Greater Manchester. A list of the current proposals is set out in Appendices B and C and those being delivered within Manchester are described in more detail below -
- 3.3 Restoration of Ordinary Watercourses These works seek to restore and repair open and culverted (buried) watercourses to reduce the flood risk posed to specific areas. The project will also look to identify any potential areas where flood alleviation works can be implemented to protect as many houses as possible from potential and future flood events. Work will be starting imminently to carry out surveys and investigations.
- 3.4 Phase 2 Trash Screens -This project will focus on improving trash screens along several watercourses which have been identified as either posing a high flood risk to the local area or where repairs are required. A trash screen is a structure which prevents debris entering a culvert and reduces the risk of blockage. This project is in the preliminary stages with a business case currently being written for potential funding in the next financial year.

3.5 Further Survey of MCC Culvert Network-This project will focus on carrying out various surveys on the existing culverted ordinary watercourse network across MCC to identify the size and design of the asset and what the current condition is. This will help to identify culverts where repairs are required to prevent a flood risk incident. The second part of this project will be to carry out the necessary repair works of the culverted network

4.0 Environment Agency Initiatives to Tackle Flood Risk within Manchester:

4.1 River Mersey Strategy (South Manchester Catchments) - This two-year study will look to establish an approved strategy for the whole- life sustainable management of EA maintained flood defence assets. A programme of interventions along with the funding mechanisms will be identified and established. Projects developed from this study will look to incorporate key partner and/or local stakeholder opportunities, (flood risk reduction or environmental enhancement related).

4.2 Cringle Brook - This project will appraise whether further interventions to flood risk In Withington, Fallowfield and Burnage (from Cringle Brook) are viable. This project is currently at Strategic Outline Case, with the next step being to develop an Outline Business Case (preferred option) over the next 2 years. Construction start date likely to be around 2025 if a scheme/s are viable.

4.3 Sinderland Brook Strategy – Timperley and Brooklands- This project is predominantly in Trafford but does cross into Manchester in the Baguley/Wythenshawe area and seeks to take a strategic approach to understanding flood risk along Sinderland/Baguley and Timperley Brooks. It will identify whether projects to reduce flood risk are required and where those interventions are necessary.

5.0 The Role of AGMA Civil Contingencies and Resilience Unit

5.1 AGMA CCRU was established in 2011 to lead on the delivery of civil contingency services for the 10 Greater Manchester local authorities to ensure that there is a consistent and appropriate level of preparedness to enable an effective multi agency response to emergency incidents which may have a significant impact on our communities. Providing this service across the 10 GM authorities, enables expertise from a number of subject matter experts and Emergency Planners to be shared across Greater Manchester. Manchester City Council is the host authority for the unit. The role includes;

- Emergency preparedness, planning and support for the 10 GM local authorities.
- Provision of local authority input into GM resilience structures and processes.
- Shaping resilience and driving forward the work of the Greater Manchester Resilience Forum.
- Providing functional expertise and best practice.
- Developing and maintaining emergency plans (GM and local).

- Providing 24/7 emergency response structures with expertise and support for incidents and pre-planned events.
 - Training, exercising the plans and incorporating lesson learned.
- 5.2 Manchester City Council has a dedicated Business Partner to ensure that emergency planning arrangements are in place within the council including embedding GM plans, delivering effective training, exercising of plans, and providing specialist knowledge and support during the response to incidents.
- 5.3 Manchester's Business Partner supports the Council Resilience Forum, which meets on a quarterly basis, to provide leadership in maintaining and enhancing the Council's preparedness to respond to civil emergencies and national priorities, through the development and maintenance of resilience work programmes, owned within Council services and within key partner organisations.
- 5.4 Over the last 12 months, our business partner has developed a Multi-agency Flood Plan, specific to Manchester, led 2 multi agency training sessions for responder staff and developed and delivered an exercise (Exercise Freyr) to test the plan.
- 5.5 AGMA CCRU also co-ordinated a GM debrief into Storm Christoph to ensure that the lessons are learned and embedded within the plans and procedures across responding agencies as well as supporting MCC to carry out an internal debrief into the incident.

6.0 Debrief from Storm Christoph

- 6.1 On Sunday 17th January 2021 an Amber Flood Risk warning was issued for the whole of Greater Manchester with particular concern raised regarding the expected flooding around Didsbury, as a result of predicted, unprecedented, levels the River Mersey was expected to reach.
- 6.2 The Environment Agency called a Flood Advisory Service Teleconference for 3pm on Sunday 17 January to provide Local Authorities with as much information as possible in a timely manner.
- 6.3 Tactical coordination group (TCG) and Strategic coordination group (SCG) meetings were established starting on Monday 18th January and these continued at regular intervals throughout the incident. A Major Incident was declared on Tuesday 19th January.
- 6.4 The predicted levels and peak times varied slightly over the duration of the incident; however, it became clear on the afternoon of 20th January that a significant risk of flooding remained for the Didsbury and Northenden Areas. A Severe Flood Warning was issued, and an evacuation took place prioritising clinically extremely vulnerable, covid positive, self-isolating and those people who were vulnerable and required assistance to evacuate. In addition to residential properties and businesses, three settings housing vulnerable

residents were also evacuated. A Reception Centre was opened at Wythenshawe Forum and was attended by over 80 citizens.

- 6.5 The Flood waters peaked at approximately 5am on Thursday 21st January. They did not breach the flood basin, however, they did come within millimetres of doing so.
- 6.6 Over 240 city council staff along with partners and volunteers were involved in the response over the 4 days.
- 6.7 Following the response to storm Christoph two debriefs took place. A multi-agency debrief at a GM level and a Manchester City Council debrief to review the Council's internal response to the incident.
- 6.8 Both debriefs took place to identify good practice and areas of response that could be improved for any future flooding response.
- 6.9 From the MCC internal debrief the following themes were deemed to have worked well:
 - Overall response and evacuation were a success and had shown 'our Manchester' values in action.
 - Co-location at both GMP HQ and Didsbury police station allowed for sharing of information, excellent teamwork and effective problem solving.
 - Regular MCC response meetings.
 - Neighbourhood Team staff with local knowledge available to support the on the ground response in Didsbury.
 - Input of Population & Public Health Team and PHE making available data sets and skill of the analyst was crucial in making the evacuation possible in a covid secure way.
 - Communication overall worked well with leaflets, social media updates and media briefings keeping key parties updated.
 - Feedback from residents was overwhelmingly positive about the response from council staff and emergency teams.
 - Contact made with all who needed it and plans in place & executed for all who wanted to evacuate.
- 6.10 Although the response to the incident was very effective, as with any incident, there is usually lessons that can be learned and improvements that can be made. The following recommendations were made in respect of the GM response.
 - Improvements to the modelling and mapping data and improved access to the data and mapping information.
 - Improved liaison with neighbouring non-GM authorities and a better understanding of cross border implications of response.
 - More regular training and exercising.
 - Improvements to the identification of and plans for support to vulnerable residents.
 - Improved administrative support to be provided to incident responders.

- Property level flood protection - there was an inconsistent approach to the provision of sandbags and a review of policies across GM is being undertaken.
- Strategic and local flood plans – as usual after flooding events, to ensure all learning from the response of Storm Christoph and other smaller flooding events is put into practice, a review is being undertaken of the GM strategic multi-agency flood plan and the multi-agency Local Authority level flood plans.

6.11 The following recommendations were made following the MCC internal debrief

- Recommendation 1 - Ensure lessons learnt are embedded in the following Plans and Guidance:
 - Manchester's Emergency Response Plan
 - Multi Agency Flood Plan
 - Evacuation Guidance
- Recommendation 2 - Review the command and control arrangements to ensure there is adequate resource available to deal with incidents that continue over a number of days
- Recommendation 3 – Review communications to maximise community preparedness and how communications are carried out during an incident
- Recommendation 4 - Review the training and exercising plan to ensure that all parties who may be involved in the response receive the required training
- Recommendation 5 - Review the Humanitarian assistance procedures and processes to ensure an effective response during incidents of this scale.
- Recommendation 6 – Improve community resilience.

6.12 An action plan to address the lessons learned has been developed and is being implemented under the governance of the Council Resilience Forum. This includes Community Flood Plans which are being developed for the affected flood areas in Neighbourhoods. These plans will involve the community, primarily focusing on improving communication between the Council and residents before, during and after flooding to complement the robust plans Manchester already has in place to protect and care for residents in the event of flooding. These plans will be available on the council's website.

7.0 Reservoir Management

7.1 Reservoirs that are capable of holding 25,000m³ or more of water are regulated under the Reservoirs Act 1975. The owners of these reservoirs are required to register the relevant reservoir with the Environment Agency and produce on-site flood plans. These plans outline what areas could flood and the actions needed to prevent, control and mitigate an uncontrolled release of water.

7.2 There are 4 reservoirs in Manchester, Heaton Park Boating Lake which is owned by Manchester City Council and 3 other reservoirs owned by United Utilities, Gorton Lower, Gorton Upper and Heaton Park Open.

- 7.3 In addition to the on-site flood plans, there is a Greater Manchester Generic Reservoir Off-site plan and the most high-risk reservoirs in Greater Manchester have individual off-site reservoir plans including Gorton Upper and Heaton Park Open. These plans provide a framework of procedures to facilitate a co-ordinated multi-agency response to the off-site consequences of a potential or actual dam breach at a reservoir which could impact Greater Manchester.
- 7.4 In recent years reservoir plans have been tested through both exercises and the incident at Toddbrook Reservoir in 2019 where several concrete panels collapsed. Although this reservoir is outside of Greater Manchester had it breached it would have impacted areas of Greater Manchester. CCRU and emergency responders from GM were involved in the response. As with all exercises and incidents, the plans have been reviewed to incorporate any lessons identified. The response to this incident demonstrated the level of preparedness and ability to respond to such situations.

8.0 Conclusion

- 8.1 Flood risk management is multi-faceted and requires a multi-agency response. It spans across duties, responsibilities, and agencies. It involves planning, preparation, engagement, investment, partnerships, responding to events and helping with recovery. Manchester City Council is committed to continue to play our part in this process and to raise awareness of flood risk amongst our communities.
- 8.2 Overall, MCC's response to flooding and other emergency incidents is well developed as evidenced in the response to Storm Christoph which worked well and demonstrated the strength of the partnerships developed across the city and Greater Manchester. Preparedness was good and the Greater Manchester Plans and Guidance which had recently been exercised, put us in good stead for responding to the incident.
- 8.3 As is always the case there is learning that can be taken from each incident and MCC's Council Resilience Forum will continue to monitor overall progress against the recommendations.