

Brighton & Hove City Council

Transport & Sustainability Committee

Agenda Item 70

Subject: Climate Adaptation – managing city risk and vulnerability to climate change

Date of meeting: 6 February 2024

Report of: Executive Director, Economy, Environment and Culture

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Wards affected: All

For general release

1. Purpose of the report and policy context

1.0 Preparing and adapting the city to the impacts of climate change is a key priority in the council's 2030 Carbon Neutral Programme. This report updates on the work that has been progressing to date to help make the city, its residents, communities, infrastructure, and economy, more resilient to climate change and extreme weather events. This report also sets out proposed next steps (paragraphs 5.1 - 5.2) to take forward climate adaptation actions to reinforce the resilience of Brighton and Hove to the impacts of climate change.

2 Recommendations

That Committee:

- 2.1 Notes the climate adaptation work progressed to date as set out in paragraphs 3.0 to 3.8.
- 2.2 Notes the recommended actions detailed in the city's Climate Adaptation Action Plan report, as set out in Appendix 2.
- 2.3 Agrees the next step as set out in Table 7 of Appendix 2 to integrate actions into the work of the council.

3. Context and background information

3.0 In December 2018, Brighton & Hove City Council declared a climate and biodiversity emergency with cross-party commitment. In March 2021 Policy & Resources Committee approved the 2030 Carbon Neutral Programme to support progress in delivering on our dual emergency declarations.

- 3.1 The strategic aims of the 2030 Carbon Neutral Programme are to:
- Cut greenhouse gas emissions from across the city by 12.7% annually.
 - Enhance biodiversity.
 - Adapt to climate change.
- 3.2 To better inform the city's approach to climate adaptation, in March 2023 the city council commissioned a climate risk and vulnerability assessment (CRVA) – an important baseline study to better understand key areas of risk for the city. The consultancy ARUP was awarded the contract for this work in March 2023 and finalised the outputs in September 2023. The study also included two additional important elements:
- An action plan which consolidates already existing adaptation projects in the city and recommends further actions, based on the findings of the study, to help inform priority areas to progress.
 - An urban heat island map – a study to better understand heat variations across the city at a macro scale.

The Climate Risk and Vulnerability Assessment (CRVA)

- 3.3 The risks identified in the CRVA have been informed through Met Office climate data, historic local environmental events, topography, and land use. They are prioritised through assigning risk scores 1-5 to the likelihood (L) of the risk occurring, and the impact (I) if it should occur. The current risk score considers existing controls that are already embedded. Once the risk has been scored, in terms of likelihood and impact, it can be allocated priority for action to control/mitigate the risk. High risk ratings are those that score 15-25 on this scale and have a recommendation of immediate action required & need to escalate to the management level above. The CRVA identified the following as the largest risks to the city both currently and in the future as follows:

- High temperatures
- Water scarcity
- Aridity
- Increased seasonal soil water saturation
- Sea level rise
- Groundwater, coastal and surface water flooding
- Coastal erosion
- Slope and embankment failure
- Extreme weather events

The Climate Adaptation Action Plan

- 3.4 The Adaptation Action Plan is a report that summarises the council's latest work on climate adaptation and includes a literature review, displays the

latest observations and climate projections, and the policy and legislative framework. It then goes on to present the approach to and results of the CRVA. This is brought together to inform a list of recommended adaptation actions for BHCC to implement, known as the Adaptation Action Plan. Finally, next steps and recommendations are set out. These actions are suggestions that can be customised and used as guidance for future projects and have been informed by both internal and external stakeholders through a series of engagement sessions.

- 3.5 The list of recommended actions can be found in table 7 of appendix 2. They range in their time scale for delivery from 1-2 years to 2-5 years and 5 years+. These recommended actions are largely consistent priority areas of work for the council. Some recommended actions reflect work that is already underway or have been recently completed such as the creation of a green infrastructure plan - an important baseline study that will help to feed into City Plan Part 1 review; and the development of a SuDS mapping study that will inform a strategic approach to how and where we deliver SuDS in the city.
- 3.6 Since the completion of the CRVA work to progress next steps have included a focus on building on stakeholder engagement and gathering more evidence from key sectors. This has included:
- A targeted survey to local businesses, facilitated by The Brighton Chamber and Brighton and Hove Economic Partnership to assess business impact from severe weather.
 - Engaging with key public transport and transport infrastructure organisations and engaging with Greater Brighton Infrastructure Panel to share learning and connect with relevant infrastructural organisations on this important work.
- 3.7 Furthermore, work is being done to reflect upon and use the findings and recommendations from the CRVA, Urban Heat Island Map and Adaptation Action Plan for building climate risk considerations into key planning policy work such as Livable City Centre, Green Infrastructure Plan and City Plan Part 1 review.

Urban Heat Island Map

- 3.8 Urban heat islands occur when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. This effect increases energy costs (e.g. for air conditioning), air pollution levels, and heat-related illness and mortality. The heat mapping element of this adaptation work shows visuals of these heat exposed areas of Brighton & Hove and can inform future tree planting strategies, city infrastructure planning, drinking fountain locations and other city projects.

4 Engagement and consultation

- 4.0 Consultation started in March 2023 with the creation of an internal adaptation oversight group that includes officers from emergency planning, planning, public health, education, property and design, sustainability, flooding, and parks. This meets monthly to discuss different adaptation

needs in the city. In recent months external stakeholders have joined this group including Sussex NHS Trust, emergency services, conservation groups, The Aquifer Partnership (TAP), Chamber of Commerce, Brighton Business Improvement District (BID) and museums. The group continues to meet regularly to discuss and plan the integration process for suggested actions that will feed into a wider plan.

- 4.1 Officers have also presented to the Greater Brighton Infrastructure Panel to engage with stakeholders with a broader geographical remit. And continue to actively meet with and engage with key city organisations and service providers such as Brighton & Hove Buses.
- 4.2 During the development period of the CRVA work, ARUP consulted the oversight group to help better inform the CRVA and Action Plan. Arup also hosted a larger meeting with external stakeholders in July 2023.
- 4.3 Following the recent Storm Ciarán in November 2023 officers surveyed local businesses to better understand how they are impacted by extreme weather events. The information creates a better understanding of how to support the local economy in mitigating against the impacts of extreme weather, better preparing for the future and becoming more economically resilient to extreme weather events as they increase in severity and frequency in the months and years to come. (See background documents 1 & 2.)
- 4.4 The council's website includes a comprehensive Climate Hub with pages on all aspects of council action, and regular news items. This is regularly updated.

5 Conclusion

- 5.0 The work detailed in this report provides a progress update on climate adaptation work for Brighton and Hove which is a critical element of the wider Carbon Neutral programme. It demonstrates Brighton & Hove City Council's continuing commitment to adaptation to climate change, biodiversity conservation and climate action. This work is the foundation of building resilience and reducing vulnerability across all key sectors of the city as climate change continues to increase the severity and frequency of extreme weather events. It will help to engage the public, organisations, and press & media in supporting and raising awareness of important actions all stakeholders need to be taking. It will raise the profile of the city council's climate action work with other local authorities, NGOs, regional and national government and provide evidence when seeking funding for additional climate projects.
- 5.1 The suggested actions in Table 7 of Appendix 2 range in their time scale for delivery from 1-2 years to 2-5 years and 5 years+. These are largely consistent with on-going priority areas of work for the council. Some recommended actions reflect work that is already underway or have been recently completed such as the creation of a green infrastructure plan - an important baseline study that will help to feed into City Plan Part 1 review; and

the development of a SuDS mapping study that will inform a strategic approach to how and where we deliver SuDS in the city.

- 5.2 Furthermore, work is being done to reflect upon and use the findings and recommendations from the CRVA, Urban Heat Island Map and Adaptation Action Plan for building climate risk considerations into key planning policy work such as Livable City Centre, Green Infrastructure Plan and City Plan Part 1 review. The next step is to adapt and integrate appropriate actions systematically within the work of the council.

6 Financial implications

- 6.0 A funding plan is being developed to ensure that all actions and work streams in the climate adaptation programme and action plan are properly costed and budgets identified to support their delivery. Where appropriate current budgets will be covering the costs.
- 6.1 There are no direct financial implications arising from the recommendations of this report. The cost of officer time and document production associated with the recommendation in this report are contained within existing service budgets. Any significant variations to budget will be reported as part of the council's monthly budget monitoring process.

Name of finance officer consulted: John Lack Date 08/01/2024

7 Legal implications

- 7.0 The proposed actions set out in the adaptation plan will contribute to ensuring the Council is meeting its statutory requirements and is better prepared to manage any current or future responsibilities, governance or legislation relating to climate risk required of local authorities.

Name of lawyer consulted: Elizabeth Culbert Date Consulted: 02/01/24

8 Equalities implications

- 8.0 The CRVA has helped to identify which parts of the city are most vulnerable and at risk of extreme weather events. Working with partners and sector experts where necessary, this information will help to direct more detailed assessments for better understanding the nature and extent of risk upon certain individuals and parts of the community. ARUP carried out an equalities impact assessment during their contract to assess equalities implications.
- 8.1 Examples of how adaptation projects may contribute to tackling equalities issues would be identifying heat exposed areas where homes and streets could be improved to protect vulnerable people from hotter temperatures, improving flood mitigation infrastructure to protect homes in flood prone areas, improving the resilience of public transport systems during times of extreme weather, improving public health through co benefits.

- 8.2 The adaptation programme will allow us to engage with partners from across the city to collaborate with experts, organisations and projects who will be best placed to support and advise on these issues.

9 Sustainability implications

- 9.0 The CRVA, Action Plan and UHI mapping highlights the most vulnerable areas of the city to extreme weather and will help ensure the cities systems are better prepared to withstand and endure these events long term. This work prioritises biodiversity conservation and enhancement as a method for increasing the resilience of the city and many of the suggested projects have co-benefits such as enhanced improved air quality and improved public health.

- 9.1 Sustainability requirements set out as part of the procurement process were adhered to by ARUP throughout working on the CRVA.

10 Other Implications

Social Value and procurement implications

- 10.0 ARUP committed to and delivered four social value projects:
- 10.1 Commitment 1: Minimising our carbon footprint and air quality impacts during delivery. We will minimise our carbon emissions during delivery of this project by using active and/or sustainable travel options for all project-related journeys.
- 10.2 Commitment 2: Briefing session to Council members and senior officers from Ben Smith, Arup Director; we will support the Council with an in-person advisory session in Brighton. The agenda will be co-created by Arup and BHCC, capitalising on existing Council meeting schedules.
- 10.3 Commitment 3: Providing 6 thesis questions for local university students to explore adaptation further academically in Brighton & Hove.
- 10.4 Commitment 4: Summary PowerPoint deck setting out key climate change risks and adaptation measures for the local area for use in schools.

Public health implications:

- 10.5 The co-benefits of adaptation work relating to public health include, reducing heat exposure, flood damages, slope collapse, soil degradation, tree planting and enhancing green spaces in the city. This directly improve health and has a beneficial impact on mental, physical health and wellbeing.
- 10.6 Extreme weather events resulting from climate change including extremes of heat and cold and poor air quality particularly affect the very young, the old and those who are more vulnerable because of pre- existing health conditions. Adapting the city to extreme heating and cooling will reduce this impact.

- 10.7 Co-benefits that result from personal behavior change towards adapting to climate change include travelling actively which benefits physical and mental health, air quality. Moving to a more plant-based diet being very good for reducing the risk of diet related diseases.

11 Supporting Documentation

1. Appendices

1. The Climate Risk and Vulnerability Assessment
2. The Climate Adaptation Action Plan
3. The Urban Heat Island Mapping

2. Background documents

1. <https://www.metoffice.gov.uk/weather/climate/climate-and-extreme-weather>
2. <https://climate.nasa.gov/extreme-weather/>
3. <https://www.arup.com/>

