
Adapting to Climate Change

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Executive Summary

With climate threats escalating, this policy briefing needs urgent attention from the Mayor's Office in Greater Manchester. Greater Manchester faces many climate change impacts, from extreme weather events to rising temperatures, the need for adaptation strategies has never been more critical. Mitigation is a crucial way to reduce climate change and therefore change the degree to which we need to adapt. This briefing offers a guide for the Mayor's Office to help protect the regions residents and infrastructure. If Greater Manchester aims to stick to its goals set out in Places for Everyone, integrating effective climate change mitigation and adaptation measures will not just be a necessity but an opportunity for a sustainable future.

Key Findings:

- It is of great importance that planning for climate change is not put on the backburner otherwise it becomes a bigger issue.
- Involvement of the community will empower local communities as well as giving policy makers more insightful knowledge of the area.
- Brownfields are where new houses should be built but in a green way.

Greater Manchester Context

Within greater Manchester, a pressing planning challenge is the adaptation to climate change. The region is facing ever increasing impacts of climate change, from rising temperatures to increased flood risks, this poses a great threat to both urban and rural areas of the county. This challenge is of great importance to the Greater Manchester city region as it directly affects the well-being of the population and the environmental sustainability as well as the decision of where new houses should be built. With increased temperatures Greater Manchester has seen increased incidence and intensity of heatwaves which increases regularity of wildfires, this effects our moorlands and endangers lives an example of this comes from 2022 where a fire swept across Saddleworth Moor (Badshah, 2022). Addressing climate change aligns with the goals outlined in Places for Everyone and is crucial for shaping a sustainable future. Recognising the urgent need for adaptive strategies, this briefing highlights why climate change adaptation is important to not only Greater Manchester's residents, but also the Mayor's Office.

Policy & Practice review

The specific policy this briefing will focus on is Policy JP-S 5 Flood Risk and the Water Environment. As Greater Manchester is having to handle an increasing number of floods and damage to the environment, this policy is a key part of safeguarding our local communities and ecosystems.

National policies such as the Flood and Water Management Act (2010) aims to increase the countries resilience to flooding and improve water management systems. This shows an approach to addressing the challenges of flooding and water management in the UK. The Government also has the National Planning Policy Framework (NPPF) (2023) within which the aim to safeguard the environment and protect green belt land is implemented to conserve green space in places such as Greater Manchester. The local policy JP-S 5 coincides with the national policies and provides an approach to addressing the challenges in Greater Manchester and shows the commitment to adaptive measures.

Manchester Climate Change Agency has a policy framework that aims to bring action on climate change, however as stated by O'Hare (2021) it has not had the right level of focus when compared to mitigation commitments, this should be a concern for the mayor as climate change is a challenge that faces everyone especially the poor and with flood risks increasing it is not something that can be left on the back burner.

A message from the mayor (G.M.C, 2018) stated how Greater Manchester has faced unprecedented impacts from flooding and thanks to the public the citizens were able to come together and move forward, however with proper policies, situations like these can be preventable and coming together with the community, policies can be put in place with help from local knowledge and decisions the community actually want. This is of utmost importance to Greater Manchester because as stated by the GMC it is often that those who contribute the least to climate change often face the greatest impact (2023) and with Greater Manchester being a diverse and complex city, some communities will be more equipped to respond to these risks than others.

With climate change comes wetter and warmer weather which means flood events are likely going to increase without proper planning policies being put into place. We need to make sure than when planning for buildings and parks/public areas we address their vulnerability to current and future impacts of climate change. With there being a 60% increase in heavy rain days since 1900 it has been said that the UK needs to act quickly to adapt to climate change because otherwise there are potentially catastrophic impacts that could be on our way (UK Climate Risk, 2020). When planning where to develop it is important to allocate areas away from areas that are susceptible to flooding using tools such as SFRA (Strategic Flood Risk Assessment) so therefore our newbuilds aren't placed in areas of flood risk to keep prices down, Figure 1 is an example of how this can be used:

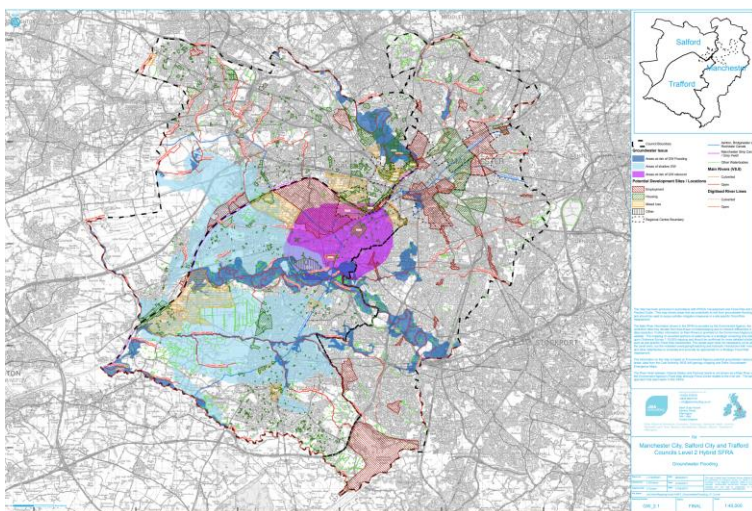


Figure 1

When planning for new builds I suggest the use of brownfield sites with “green” areas to promote environmental stability. The new Mayfield inner city development is a model for brownfield use because of its use of open green areas, leisure, retail, business and most importantly housing. The shortage of housing across the UK and Greater Manchester should not mean we lose green land to cope with this, as this has direct effect to our capabilities to cope with climate change in Manchester, therefore housing development should be at the heart of brownfield plans.

Academic Insights

Academic insights into climate change especially for Greater Manchester show how there is careful consideration needed, although there is limited literature on the region, insights from broader studies contribute valuable perspectives.

Vulnerability within communities is a key part of the discussion within academia. Research done by scholars shows the inequalities and disproportionate impacts on marginalised communities and the importance of integrating the local knowledge to adaptation (Adger et al., 2008), this shows the need for proper policies that address social inequalities and environmental concerns. This is especially true for Greater Manchester, where certain areas face higher risks from climate change due to socio-economic factors.

The economics of climate change are critical to policy development, for example, floods bring a high economic cost to people's homes and businesses but also people's livelihoods. Therefore, as previously stated, community engagement in climate adaptation is very important, a study by Arnstein (1969) introduced the "ladder of citizen participation" which emphasizes the need for meaningful engagement with communities in decision-making processes and that not actually directly working with the participants is just tokenism. This shows us that effective adaptation strategies work better when they incorporate the local knowledge as this helps empower communities and therefore helps local planners and authorities get the right information and the support from the community to help adapt in a way that works for them and the population. Manchester is known for its sense of community and working together, hence the worker bee, therefore I believe it is important to emphasize the need for a participatory approach that involves the residents of Greater Manchester within decision-making processes.

Part of working with the community to adapt to climate change involves trust, as the Mayor I am sure you are aware that peoples trust in politicians and policy makers has decreased. Therefore, my suggestion of working together with the community would bring successful adaptation initiatives, research into Chile studied the public perception to understand the drivers and barriers to adaptation to climate change which helped inform adaptation-related policies (Aldunce et al., 2017). Therefore, I believe using a strategy like this would be a good idea for Greater Manchester.

Academic literature suggests the utilisation of brownfield sites for a sustainable approach to urban development. By using brownfield sites, we can repurpose previously developed land and reduce the pressure on our green spaces, therefore reducing the impact of urban sprawl. We can also incorporate green spaces into brownfield sites, this is advocated by Benedict and McMahon (2002) who emphasize the natural elements into urban planning. Adding greenspaces to our urban spaces brings more benefits than just aesthetics, they help to the ecosystem such as floodwater absorption as well as regulate the temperature. Alternatively, rewilding brownfield sites would be an opportunity to produce biodiversity banks, this is where mitigation and adaptation somewhat blur together, as it would help mitigate against extremes of climate change by helping reach the zero emissions target, but also allowing adaptation to increased extremes of rainfall by increasing interception and infiltration and regulating the discharge of urban rivers. Brownfields can be cost-effective alternatives for housing and development, this would simultaneously address housing shortages without compromising green spaces which are vital for adapting to climate change.

Extreme weather events can be caused by many factors, such as Urban Heat Islands (UHIs). UHIs are localised urban areas that experience higher temperatures compared to the local rural areas due to human activities such as modification to the grounds make heat get absorbed a lot easier and therefore trapped, which increases the heat within cities such as Manchester as well as our towns within Greater Manchester. Studies such as Harian et al. (2015) show that UHI have negative impacts on the population such as heat-related illnesses, this has larger impacts on the elderly and low-income communities. UHIs also have negative impacts on the environment such as changing the local climate conditions which then has knock-on effects on ecosystems and water resources, therefore mitigation is needed. A mitigation strategy is the incorporation of green infrastructure such as increasing vegetation and permeable surfaces to increase cooling (Santamouris, 2015). This along with the use of green infrastructure within brownfield sites would make Greater Manchester much more adapted to climate change.

Policy and Practice Development – Next Steps

It is important that the Mayor's Office take onboard the insights from academic literature and practices in policy and practice. Prioritising community engagement in policy development will insure the inclusion of local knowledge and needs, this will therefore enhance the acceptance of adaptive measures as well as make those measures be the best for the area, this has been highlighted by academic research that emphasizes the importance of community engagement.

Brownfield development is a strategic way for making urban planning sustainable. Examples like the Mayfield inner city development is an example as to how this has worked and would work elsewhere, blending housing with green spaces can bring food rates down. The Mayor's Office should consider incentivising brownfield projects and promoting similar models across the region, this would address housing shortages whilst tackling climate change.

To enhance policies, more research needs to be done in assessing the specific vulnerabilities of our communities and understanding their needs, a blanket approach for the whole of Greater Manchester would ignore the most vulnerable within our communities and they are the ones who suffer the most. Therefore, the Mayor's Office should invest in data collection initiatives and research institutions to create evidence based local decision making that can use our money for plans that will actually tackle current and upcoming environmental issues.

To conclude, the Mayor's Office can lead Greater Manchester towards a resilient future by embracing the community and working on sustainable brownfield development plans. By integrating these considerations into policy development, Greater Manchester can lead the way in effective climate adaptation and ensure the health of its community along the way.

Sincerely,

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