

# City of London Corporation Committee Report

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| <b>Committee(s):</b><br>Health and Wellbeing Board   | <b>Dated:</b><br>11/07/2025   |
| <b>Subject:</b><br>Water stress and health – opportunities to collaborate between partners                       | <b>Public report:</b><br>For Decision   |
| <b>This proposal:</b> <ul style="list-style-type: none"> <li>Delivers Corporate Plan 2024-29 outcomes</li> </ul> | Leading Sustainable Environments<br>Providing Excellent Services<br>Diverse Engaged Communities   |
| <b>Does this proposal require extra revenue and/or capital spending?</b>   | N/A   |
| <b>If so, how much?</b>  | N/A   |
| <b>What is the source of Funding?</b>  | N/A   |
| <b>Has this Funding Source been agreed with the Chamberlain's Department?</b>                                    | N/A   |
| <b>Report of:</b>  | Dr Sandra Husbands<br>Director of Public Health<br><br>Katie Stewart<br>Executive Director Environment  |
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## **Summary**

Climate change has a significant impact on public health. The most vulnerable residents, such as those living in poverty, low-income workers and those with underlying health conditions, are disproportionately impacted by climate impacts.

Work to mitigate these risks forms an important part of a Just Transition. Continuing earlier Health and Wellbeing Board discussions on climate and overheating, this paper focuses on the implications of water stress on health, and the need for collaboration between partners to mitigate these risks.

Water stress occurs when the demand for water exceeds the available amount during a certain period, or when poor quality restricts its use. Water stress, and the associated risks of regional drought and localised disruption from burst watermain, is an increasing challenge for the City of London and the South-East of England. Current shortages will be exacerbated by climate change, population growth, and aging infrastructure. The associated impacts to health are expected to increase.

London's water supply system has developed over centuries and is part of a wider natural and manmade system. The high concentration of workers in the Square Mile for only part of the day, increases the complexity of water provision.

While responsibility for managing water supply sits outside the remit of the City of London Corporation, there are actions that the City Corporation and partners can take to mitigate the impacts to their organisation and communities.

This paper examines the health and wellbeing risks relating to water stress arising from climate-related impacts. Recommendations for potential actions have been aligned to the Health and Wellbeing Board partners' strategic priorities and existing programmes of work.

## **Recommendations**

Members are asked to:

- Note the report.
- Approve the continued collaboration between system partners on the issues outlined in the report.
- Approve that actions are taken forward through the City of London Climate Action Strategy and NHS Green Plans, and that progress is reported back to the Health and Wellbeing Board annually.

## **Main Report**

### **Background**

1. The impacts of climate change are wide ranging and adversely impact health outcomes – disproportionately impacting certain individuals, communities and groups. Action to mitigate and adapt to climate change present opportunities and risks to direct health outcomes and the social determinants of health.
2. Climate change and its impacts risk adverse outcomes against the three strategic priorities outlined in the Health and Wellbeing Strategy (financial resilience, social connection, and mental health).
3. Responding to the emerging threat of climate change, the Health and Wellbeing Board agreed in November 2023 to table a series of focus-topic agenda items on climate and health. The first focus topic covered overheating and health – it is

proposed to return to a later committee to update on actions arising from this previous item. This report is the second in the series focusing on the implications of water stress on health and considers the overlap between overheating and water stress.

4. The importance of water to our society is so fundamental that the risk posed by limited supplies has significant consequences, with implications for health and wellbeing.
5. Water stress happens when the demand for water is greater than the available supply over a prolonged period, or when poor water quality limits its use. The chances of serious drought and the frequency of burst water mains are increasing with climate change. This is partly due to subsidence, which is the sinking of the ground caused by over extraction of groundwater.
6. As climate change leads to more frequent and severe droughts, reliance on groundwater increases, causing the ground to sink and damaging water infrastructure.
7. Water stress often worsens during droughts and can impact public health in several ways:
  - Limited water affects hygiene, increasing the risk of infectious diseases like gastrointestinal illnesses.
  - People may use untreated alternative sources (e.g. rainwater), raising contamination risks.
  - Low water flow can reduce quality and dilution of pollutants.
  - Drought and reduced vegetation can worsen air quality, adding to respiratory issues and reducing overall wellbeing.
8. As with the other impacts of climate change, water shortages will affect some population groups more than others. These include:
  - those more susceptible to dehydration e.g., the elderly, pregnant and young;
  - individuals and settings that demand greater water usage for infection prevention control;
  - those with compromised immune systems; and
  - those whose employment is dependent on water-use.
9. London's water system is complex. The supply is mainly taken from two rivers (non-tidal Thames and Lea) with a proportion abstracted from the aquifer below the capital. During drought conditions London is reliant on the water stored in its reservoirs and in extreme cases can make use of a limited number of alternative sources (New River, Desalination Plant, etc).
10. Water stress is worsening in the South-East of England. This is being driven by:
  - Population growth as more people move into the area;
  - Aging and the deterioration of existing water infrastructure assets;
  - Changing rainfall patterns driven by climate change; and
  - Behaviour changes in the ways that people use water.

Stronger environmental protections also increase water stress by keeping more water in natural systems.

11. Historically the City Corporation has played a significant part in securing water for the Square Mile. Local water resources are now under the control of Thames Water Utility Ltd and managed regionally by Water Resources South-East.
12. By 2050, supporting population growth, the economy, food production, and the environment will require nearly 5 billion extra litres of water per day, beyond current usage.
13. In the immediate future, the initial focus for water companies, as per the expectation of regional water resource management plans (WRMPs) is to:
  - Save water (using water more efficiently and metering);
  - Reduce leakage; and
  - Explore new supply options such as reservoirs, desalination, water recycling and upgrades to water treatment works.
14. Several interventions outlined in the South-East WRMP can benefit London and the Square Mile. This includes a new reservoir in Oxfordshire and a proposed water recycling scheme in West London.
15. Whilst the responsibility for water management sits with others, the City Corporation, as a Local Authority, has a duty to protect and improve its residents' health and wellbeing, including responding to the emerging threats from climate change, and the cascading effects of water stress. Members of the Board can support and amplify these efforts through enhanced system partner collaboration and coordination.

## **Current Position**

16. The impacts of water stress and drought will affect all aspects of the City Corporation's and Health and Wellbeing Board partners' work. A severe drought is estimated to cost the London economy £500 million a day and water availability could in future become a constraint on development. Water demand places a strain on our natural systems, with drought conditions causing acute and long-term damage to the environment.
17. The City Corporation has been involved with two studies led by the GLA. The Sub-Regional Integrated Water Management Strategy for East London considered a few future growth scenarios and modelled the implications on future water resources. The Beckton Water Demand Study calculated the current and future water footprint of the Square Mile and considered a range of water-saving interventions. The studies are clear: while sustainable development plays a key role in managing water resources, additional action and long-term planning will still be required to meet future demand and ensure resilience. (See Key Data for more information.)
18. The City Corporation already undertakes several activities regarding water management; these are highlighted in Appendix 2.
19. A detailed review of water stress and its related impacts within the Board's scope of activity was carried out across key 'target areas':

- Healthcare settings and their surroundings, provision and services
- Education and libraries
- Housing
- Homelessness and rough sleeping
- Ports and markets

20. Proposed solutions have been aligned with the City of London's Climate Action Strategy, supporting both mitigation and adaptation efforts.

21. The exercise also evaluated the risk for unintended or negative impacts arising from the proposed recommendations. No such risks were identified.

### Options

22. Option 1: This option would maintain the current level of engagement between partners, collaborating on a case-by-case basis where shared climate-related interests align in specific projects **(not recommended)**.

23. Option 2: Health and Wellbeing Board as a collective body and within their organisations use its influence to strengthen local partnership to address the health impacts of climate change, as outlined in the Proposals section. **(recommended)**.

### Proposals

24. The Board is asked to approve enhanced collaboration to continue to explore and take forward shared actions to prevent and reduce the harms of the cascading effects of climate, including water stress.

25. Members are asked to consider and advise on the following potential climate-health actions:

- Review of Drought Preparedness:** Collaboratively review the existence and effectiveness of local drought plans, ensuring they accurately reflect the risk of water stress and are up to date with current climate projections and local vulnerabilities.
- Priority Services User Lists:** Work together to promote awareness and uptake of utility company priority services registers, encouraging registration among vulnerable residents and their carers to improve support during service disruptions.
- Drought Emergency Exercise:** Conduct a joint emergency exercise (in collaboration with the City of London's Emergency Planning team) to test and evaluate organisational drought response plans, identifying gaps and opportunities for improved coordination and resilience.
- Water Efficiency Best Practice:** Bring together asset and facilities managers to exchange knowledge and share best practices on water efficiency and management strategies across sites and services.
- Shared Drought Messaging:** Develop collaborative public campaigns to raise awareness of water use and conservation, aligning messaging across partners to maximise reach and impact.

26. It is recommended that these actions are taken forward through the City CAS and NHS Green Plans, and that progress is reported back to the Health and Wellbeing Board annually.

## Key Data

27. In 2024 the water demand in London was 2104 ML/d [million litres per day], with a deficit of 143 ML/d. By 2024 demand is expected to have increased by 104 to 2246 ML/d. The deficit is expected to increase to 362 ML/d which is 16% of total anticipated demand.
28. The Square Mile currently uses 9.42 ML/d of which 8.17 ML/d is supplied to commercial premises with the rest used in residential. Without any action this modelled to increase by 14% by 2050. However with high ambition water saving interventions including retrofit and new building development, this could be reduced to 9.12 ML/d whilst accommodating anticipated growth.
29. East London currently experiences 88 days of water stress per year (days in which more water is used than enters the system). Under a high population growth and high investment scenario, water stress is expected to increase to 234 days per year. Under a lower population growth (and therefore limited investment) scenario, water stress is expected to increase to 363 days, practically every day.
30. For the high growth scenario, various interventions have been modelled to reduce the days of water stress - including a water re-use scheme at Deephams Waste Water Treatment scheme (by 100 days), proposed London Wide Water Resources such as new reservoirs (by 97 days), widespread leakage reduction works (by 87 days) and rolling out water metering (by 84 days).
31. There is limited direct evidence that drought and water stress alone lead to increased mortality in England. However, drought conditions can exacerbate heatwaves, which are strongly associated with higher mortality rates, particularly among older adults.
32. The summer of 2022 was notable for England's highest recorded temperature of 40.3°C, prompting the first-ever Level 4 Heat-Health Alert (HHA). During five heat episodes, an estimated 2,985 excess all-cause deaths occurred, with significant mortality concentrated in people aged 65 and above.
33. Ahead of the heatwave that year, water stress was presenting as a challenge with significantly reduced rainfall, below-normal groundwater and river flows. By late August, 17 of 18 water companies had activated drought plans, with five introducing temporary use bans affecting 19 million people. Fortunately, public water supply impacts were relatively short-lived.
34. Implications for health and wellbeing:
- **Disproportionate impacts on vulnerable groups:** Older adults, young children, people with chronic health conditions, those with disabilities, and people experiencing homelessness or living in poor quality housing are at higher risk from heat and drought related stressors.

- **Increased health and care demands:** Rising temperatures and reduced water availability may lead to increased demand on health and social care services during peak summer / warmer months, affecting service delivery and resilience.
- **Compounding social vulnerabilities:** Low-income households may struggle to afford or implement adaptive measures (e.g., fans or efficient appliances), increasing their exposure to both heat and water insecurity.
- **Mental health pressures:** Chronic environmental stress from water scarcity and extreme heat may heighten anxiety and distress, particularly for isolated or marginalised residents.
- **Importance of integrated planning:** Coordinated water resource management and climate-related health resilience planning is needed to ensure that vulnerable populations are protected, and essential services remain efficient in the face of climate pressures.

## **Corporate & Strategic Implications**

**Strategic implications** – Progressing work outlined within this paper will contribute towards Corporate Plan aims of Leading Sustainable Environment, Diverse Engaged Communities, and Providing Excellent Services through creating the conditions for places, people and processes to be more resilient to overheating. The work actively fulfils objectives within the Climate Action Strategy and Health and Wellbeing Strategy.

**Financial implications** – There are no new financial implications arising from the proposal within the paper at this stage.

**Resource implications** – There are no new resource implications arising from the proposal within the paper at this stage.

**Legal implications** – None.

**Risk implications** – The proposals in this paper seek to actively address and mitigate risks arising from climate change and water stress.

**Equalities implications** – If unmitigated the impacts from overheating will have a disproportionate impact on some groups of people associated with protected characteristics. The Just Transition approach proposed within this paper actively prioritises reducing the impacts on those most vulnerable and worst affected. Subsequent works outlined should it be taken forward may require a full Equality Impact Assessment.

**Climate implications** – The primary aim of this paper is to further mitigate and adapt to the impacts of climate change, using opportunities to specifically address health related impacts. The proposals outlined would increase climate resilience of the most vulnerable and seek to ensure that climate action minimises potential unintended health disbenefits.

**Security implications** – None.

## **Conclusion**

35. Water stress is one of the main risks to public health from climate change. Without action, it will have a disproportionate impact on already vulnerable groups. The City of

London has specific challenges due to highly localised demand arising from its concentration of population.

36. This paper seeks to gain high level support from the Health and Wellbeing Board to continue to progress a range of collaborations which would manage the risks from water stress to health.

## **Appendices**

- Appendix 1 (below) – List of existing City Corporation activities relevant to Water Stress

## **Background Papers**

[Climate & Health – Opportunities for Collaboration](#) [HWB 24/11/2023]

[Overheating and Health – Opportunities to collaborate between](#) partners [HWB 15/11/2024]

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## **Appendix 1**

## **List of existing City Corporation activities relevant to Water Stress**

### **City Surveyors**

#### Facilities Management

- Maintenance of sites water using assets and remedial works.

#### Energy and Sustainability

- Water-use contract management.
- Review of continuous flow alarms with contract.

#### Health and Safety (Property)

- Management of legionnaires monitoring in water supplies (with facilities management team)

#### Property Projects Group

- Specification of new property water-using assets.

### **Community and Children's Services Department**

#### People

- Severe Weather Emergency Plans in the Homelessness and Rough Sleeping team including for hot weather conditions.

#### Commissioning and Partnerships

- Departmental risk control and resilience and emergency planning (including in relation to water shortage).

#### Education and skills

- Water-use in the family of schools.
- Green skills promotion covering water related careers.

#### Public Health

- Public Health advice including to Business and through community champions programme

#### Housing and Barbican

- Divisional risk control and resilience and emergency planning (including in relation to water shortage).
- Water use on the Barbican and Social Housing Estates.
- New affordable housing meeting water efficiency requirements.

#### Barbican and Community Libraries

- Providing GLA registered Cool Spaces in libraries with access to water.

### **Environment Department**

#### Planning and Development

- Planning policy requirements to meet 110 litres per day per person (in residential)
- Planning for Sustainability SPD guidance on water-use in commercial developments
- District Surveyors enforcing Building Regulation G2

#### City Operations

- Water fountain programme and Refill scheme
- Climate resilient planting in City Gardens
- Enabling works within the highway
- Emergency response

#### Port Health and Public Protection

- Environmental Health water quality and legionnaire monitoring

#### Natural Environment

- Natural Environments Resilience Strategy and natural flood management projects