



LONDON
climate change
PARTNERSHIP



Observing London: Weather data needed for London to thrive

Executive Summary

July 2013

About this document

This report was written by:

Professor CSB Grimmond
King's College London, The Strand
London WC2R 2LS, United Kingdom
Department of Meteorology, University of Reading
Reading RG6 6BB, United Kingdom
c.s.grimmond@reading.ac.uk

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www.climatelondon.org/

enquiries 020 7983 4100

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Foreword



London aims to lead the world in climate resilience. To do so requires access to basic information about the characteristics of its weather and how they are changing. Although there are currently around 260 weather stations in the capital, they are operated by a range of organisations and volunteers, and the data are not coordinated or centrally accessible. This report makes the case that we could and should harness this wealth of information – most notably through the creation of a focused weather portal for London. Improving the quality and access to weather data helps us to better understand and adapt to current and future conditions, ensuring London is a resilient and thriving city.

Improvements to weather data will have significant economic benefits by enabling better operations within sectors such as flood management, transport, insurance, emergency response services, energy use management and building design.

Excitingly, we also expect that a single weather portal would provide a catalyst for new uses and growth due to entrepreneurship, technology and citizen wide initiatives such as the development of mobile applications.

I hope you find this report informative and valuable, but more importantly, that you will work with us to turn the recommendations into reality.

A handwritten signature in black ink, reading "Chris Rapley".

Professor Chris Rapley CBE
Chair, London Climate Change Partnership

Executive summary

Weather observations are among the most important data required to enable London and cities around the world to function. They have an enormous range of uses. Some users are in public institutions charged with protecting life and property, for example from storms or flooding. Many others are in businesses that use atmospheric information to enhance their operations, whether in energy trading, architectural design, the management of buildings or transport.

By their sheer numbers, the greatest users of weather and air quality data are the members of the general public who use this information to make a range of everyday decisions – such as when to take an umbrella, what transport to use or how to avoid a polluted route to work.

In order to understand the current use and collection of weather data in London, and both the unmet needs of users and the potential benefits that could come from better data availability, a survey was distributed to a wide range of public, private, governmental and commercial stakeholders.

London has a surprising amount of weather data – about 260 stations that measure some aspect of London's atmosphere, including rainfall, temperature and air quality. These are operated by a wide range of organisations and individual volunteers. However, there is a general consensus that: (1) the data are not available at a high enough density across the city and (2) many users cannot take full advantage of the data collected because they are not discoverable nor available in quality controlled, easily accessible formats online.

The key recommendations of this study, with their related benefits, are:

- 1. Creation of a single accessible source for weather data – a London Climate Data Portal (LCDP):** This will enable exploitation and innovation in the uses of weather data. The reported benefits of greater data availability include better flood management, enhanced weather forecasting capability, enhanced transport management, air quality services, ecosystem services, emergency response services, energy use management and building design. It is expected that new uses and growth will appear beyond the current needs due to increased technology, entrepreneurship and citizen-led initiatives eg through smart phones.
- 2. Improve the quality and usability of the data collected:** Procedures to quality control data that are currently available will enhance their usability and improve the integrity of decisions made using weather data in a wide range of applications.
- 3. Evaluate data gaps:** A London Climate Data Portal would enable data-gaps to be understood. A follow-on business case for future investment will enable volunteers and funders alike to evaluate what data London most needs and where for future resilience and economic growth.

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4. **New observations:** where the user need is balanced by the investment, new observations will enable further benefits to be realised in the innovative use of weather and climate data. Technological innovation including wireless sensors, vehicle mounted sensors or mobile sources will likely prove especially attractive. New technologies and opportunities should be actively monitored to ensure ongoing improvements to the spatial and temporal data provided on the London Climate Data Portal.
5. **Ensure continuity of stations to facilitate the study of extremes and London's longer-term climate.** This will enable understanding of the impacts and frequency of severe storms, heat waves and floods over long periods for climate and weather risk management. This will benefit risk management, energy trading and detection of climate variability and change, all enhancing London's resilience.

A focused portal for weather data in London would lead to new applications yielding economic benefits. This has been the experience of other cities both in the UK and internationally, such as Shanghai, Helsinki and Birmingham. London has the opportunity to learn from these cities and develop leadership in this area internationally.

By their nature, applications of weather data help users to adapt to current and future conditions. Thus London will become more resilient and more attractive for its increased capacity to adapt, respond and thrive.
