

Climate Risk in Haringey

June 2024

AGENDA

- The London Picture - GLA
- Surface Water Management - Haringey Council
- Haringey Heat Risk - Haringey Council
- Haringey Climate Risk - Bloomberg
- Islington Citizens Resilience Plan
- Ice Cream
- Table Discussion

The London Picture

PRESENTED BY DANIEL BICKNELL - GLA



Climate change and adapting London

Daniel Bicknell, Climate Adaptation Manager, Greater London Authority

June 2024

WHAT ARE LONDON'S MAIN CLIMATE RISKS?

London faces 3 main climate related risks from climate change:

- **Flooding:** flash flooding, tidal, river
- **Water scarcity during drought conditions**
- **Overheating and extreme heat**

Underpinning these risks are disproportionate impacts with the vulnerable and at risk groups feeling the greatest impacts

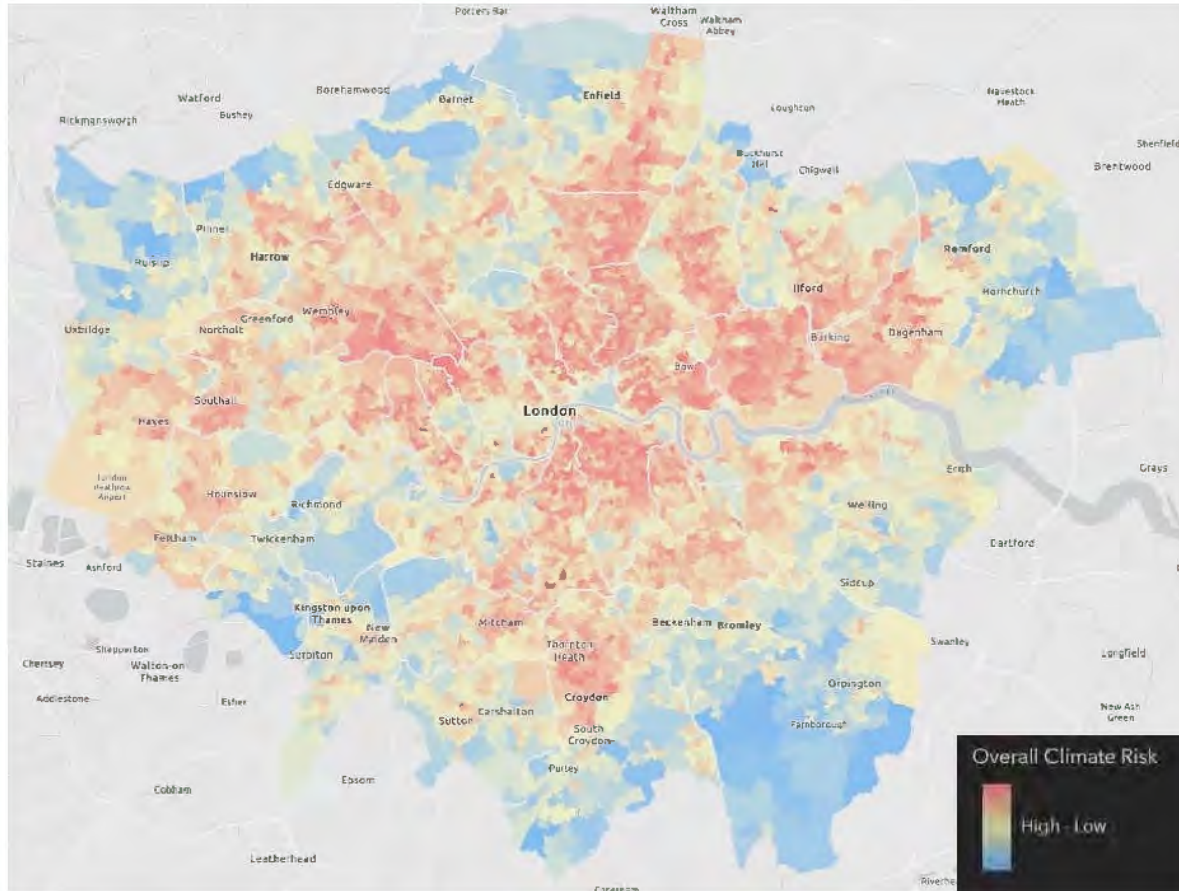


DEFINING CLIMATE ADAPTATION

- Adaptation is the process (or outcome of a process) that leads to a reduction in harm or risk of harm, or realisation of benefits associated with climate variability and climate change
- Resilience is the ability of a system to recover from the effect of an extreme load that may have caused harm.
- Adaptation policies can lead to greater resilience of communities and ecosystems to climate change.

London Environment Strategy 2018

CLIMATE VULNERABILITY & INEQUALITIES



Source: Climate Risk Map, GLA

- 'Climate vulnerability' relates to people's exposure to climate change impacts like flooding or heatwaves, but also to personal and social factors that affect their ability to cope with extreme events.
- Higher climate risk coincides with areas of income and health inequalities.
- The impacts of climate change are disproportionate.

Why adapt?



2000 – flooding

2001 – flooding

2003 – heatwave

2005 – flooding

2006 – drought

2006 – heatwave

2007 – flooding

2008 – flooding

2008 – snow and ice

2009 – snow and ice

2009 – flooding

2010 – flooding

2010 – snow and ice

2011 – warm spring

2011 – warm autumn

2012 – drought

2012 – wet summer

2013 – snow and ice

2013 – heatwave

2014 – flooding

2015 – flooding

2015 – heatwave

2016 – heatwave

2017 – heatwave

2018 – snow and ice

2018 – heatwave

2019 – record heat

2019 – drought

2020 – heatwave

2020 – flooding

2021 – flooding

2021 – heatwave

2022 – heatwave & record heat

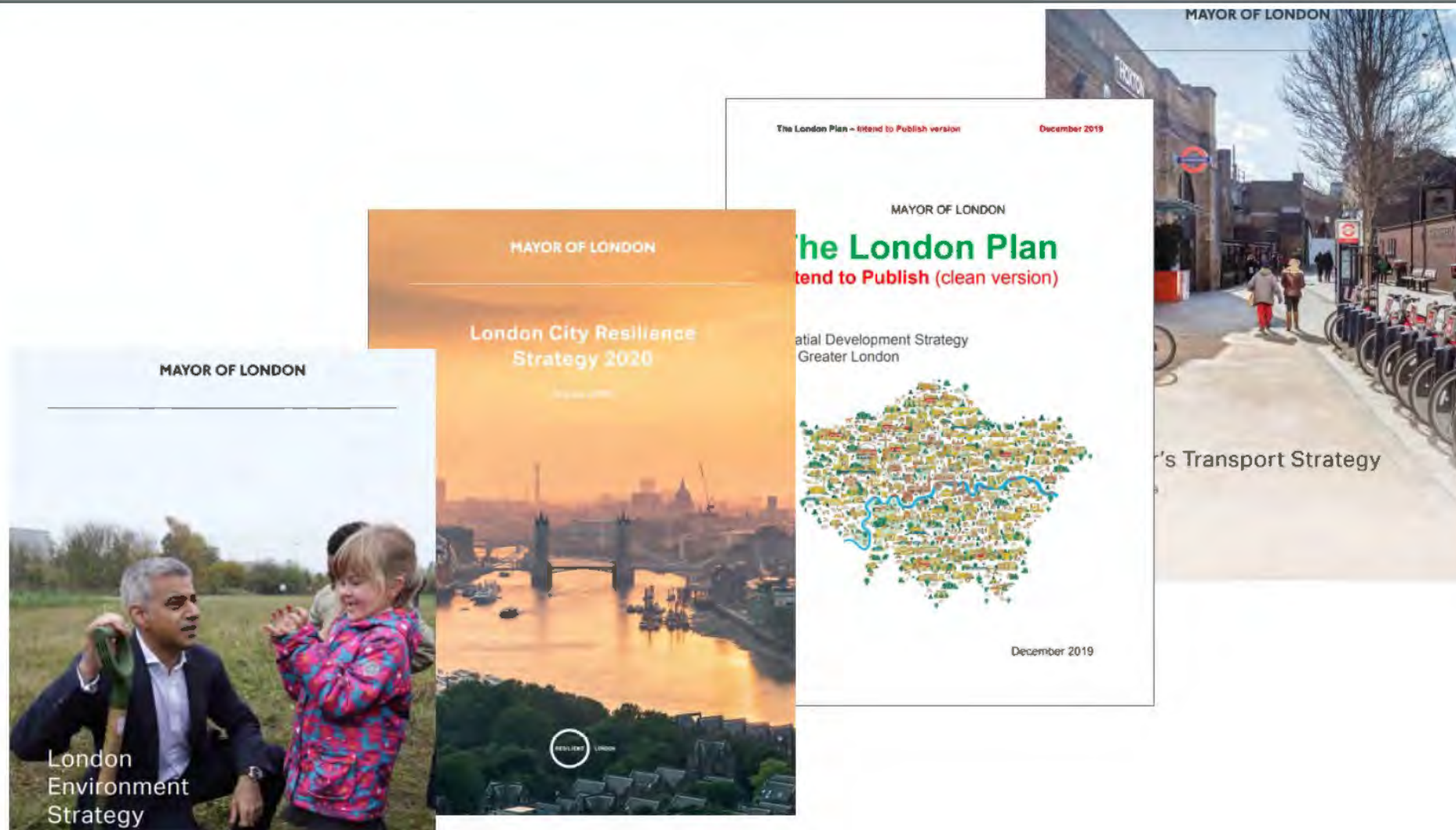
2022 – flooding

2022 – drought

2022 – Snow and ice

2023 – flooding

ADAPTATION POLICY IN LONDON



CITY HALL - CLIMATE ADAPTATION PROGRAMMES

- Convening and collaboration with London partners
 - London surface water strategy
 - Thames Estuary 2100
 - Resilient and Green climate programme
- Mayoral grant programmes & accelerators
- Policy, guidance and training
- Campaigns – e.g. flash flooding leaflet
- Data and evidence (e.g. flood action cost benefit, cool roof retrofit, properties vulnerable to overheating)

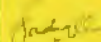


AWARENESS RAISING - BASEMENT FLOODING LEAFLET



This leaflet is designed to help you prepare for flash floods, which we expect to happen more frequently in our city. Be prepared – it could help to save lives.

Safety message from the Mayor of London:
"Serious flooding in London last year proved that the climate crisis was no longer a distant problem, but one increasingly on our doorsteps. We must all take action now to help build a greener city that is more resilient to the devastating impacts of climate change."

 **Sadiq Khan**
Mayor of London

Flash flooding happens when heavy rain falls on hard surfaces overwhelming drainage and sewers. Flash floods are difficult to predict and often happen quickly with fast flowing water. They are more likely to happen during intense summer storms. The likelihood of flooding remains low for most basements, but where it happens, damage and risk to life can be serious.

WHAT YOU NEED TO DO TODAY TO BE PREPARED:

- Sign up to weather warnings: [metoffice.gov.uk](https://www.metoffice.gov.uk)
- Put your valuables on a high shelf to protect them from water damage.
- Make sure you know how to turn off your water, gas and electricity supply.
- Check your household building or contents insurance covers flooding. If you don't have any, FloodRe may be able to help: [floodre.co.uk](https://www.floodre.co.uk)
- Save phone numbers e.g. your insurance company, landlord, housing association and local council in your phone.
- Check drains outside your home and on your street are clear. Report street drainage issues to your council by phone, their website or at fixmystreet.com or lovecleanstreets.info
- Prepare a flood kit.

Your flood kit should contain items you must have if you need to leave your home. Things like:



Medicine and prescriptions



Warm / Waterproof clothing



Phone charger



ID / Passport and insurance policies



Torch

BEFORE IT FLOODS, YOU SHOULD:

PREPARE:

Check Met Office warnings and listen to local news if storms are forecast. Make sure your flood kit is ready just in case.

IF IT FLOODS, YOU SHOULD:

ACT:

If water starts to enter your home, move yourself, your family and pets away from danger. Turn off electricity, gas and water if safe to do so. Avoid flood water if possible as it may contain chemicals and waste. Don't drive through flood waters, as it's dangerous.

SURVIVE:

Call 999 if there is a threat to life. Emergency services can help if you need to evacuate your home.

LEND A HAND:

Check on vulnerable neighbours if you can.

WHO TO CALL DURING A FLOOD:

- For emergencies such as serious illness, injury and risk to life, call 999; fire, ambulance and police services
- If your toilet, sink or bath is flooding, call Thames Water: 0800 316 9800
- Inform your council of flooding coming from outside your property e.g. from the road or pavement – visit [gov.uk/find-local-council](https://www.gov.uk/find-local-council) to locate your council. Then, find contact information for the right team by searching for 'flood' or 'flooding' through the council website.

USEFUL CONTACTS

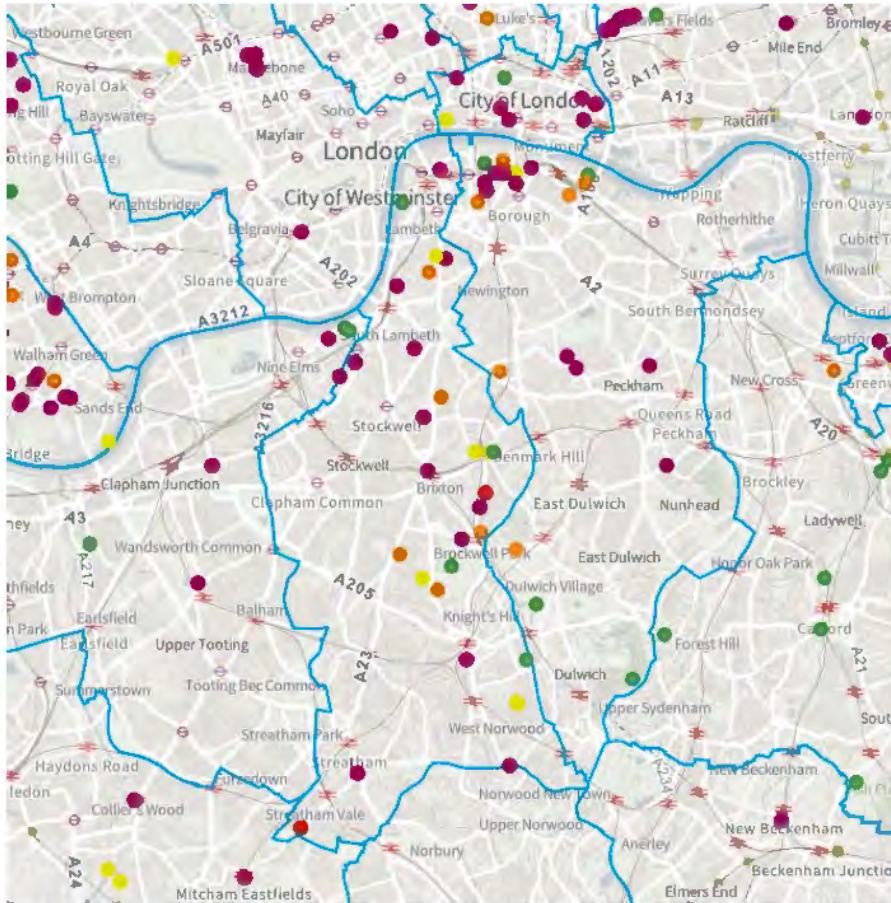
- For general advice, call the Environment Agency's 24 hour floodline: 0345 988 1188
- The National Flood Forum has a helpline that provides general support before, during and after a flood on issues including insurance, home re-instatement and home resilience. Contact the National Flood Forum charity: 01299 403 055 [nationalfloodforum.org.uk](https://www.nationalfloodforum.org.uk)
- To find an insurer, try FloodRe: [floodre.co.uk](https://www.floodre.co.uk)
- If you are a renter inform your landlord/housing association if your home has flooded and needs repairs.

For more advice, visit: [London.gov.uk/flash-flooding](https://www.london.gov.uk/flash-flooding)

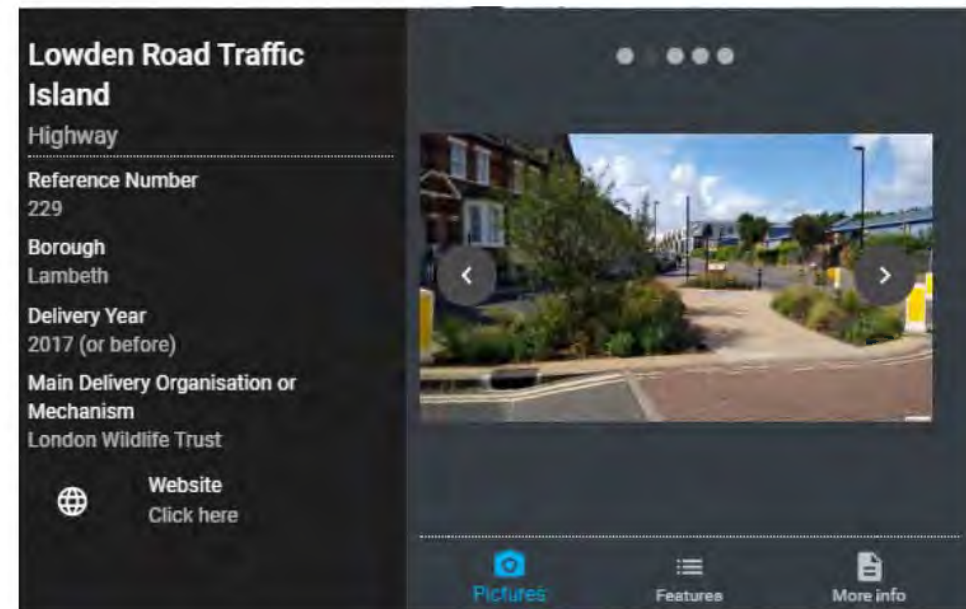


DELIVERY OF SUDS ACROSS LONDON - SUDS RETROFIT MAP

apps.london.gov.uk/suds



- View locations of retrofit SuDS around London
- Shows good work done throughout London on SuDS
- Highlighted by the CCC as a



SUDS PROJECTS ACROSS LONDON

PHOTOS CREDIT JAMES O JENKINS



The 2021 Grow Back Greener Fund, co-funded by the Mayor of London and Thames Water awarded £1.4m to 45 community projects



Agnes Riley Rain Garden. Partners: London Borough of Lambeth, working with Clapham Park Project and Friends of Agnes Riley Gardens, awarded £20,466 to address flooding at the park in Clapham Park. The project will create new wetlands, sustainably manage rainwater and improve the existing pond, boosting climate resilience.

CLIMATE RESILIENT SCHOOLS

95 schools



SuDS rain planters

72 schools with planters.

564 planters in total
storage 157m³ of water

That's 1962 bathtubs
First 3mm of a storm
which is significant



Smarter Business Visits

28 schools have had SBVs (32 had already been visited).

558,892 litres of water saved per day.

1 Olympic swimming pool saved over a week!



Education and Monitoring

24 schools with planter loggers and/or weather stations.

Education resources produced in partnership with school teachers.



Climate Adaptation Plans (CAPs)

60 schools with CAPs

Overheating an issue in 78% of schools

Overarching summary document produced



THE LONDON CLIMATE RESILIENCE REVIEW

Interim Report - January 2024
Full report – expected July 2024

SURFACE WATER MANAGEMENT

Climate Resilience Event



Pankit Shah
Flood & Water Management Lead

London Borough of Haringey is susceptible to 3 types of flooding:

1) River Flooding (Fluvial)

- Flood zone 1 affects all London.
- In Haringey, we have flood zones 2 and 3 in the vicinity of the River Lee affecting the low-lying areas in Tottenham.

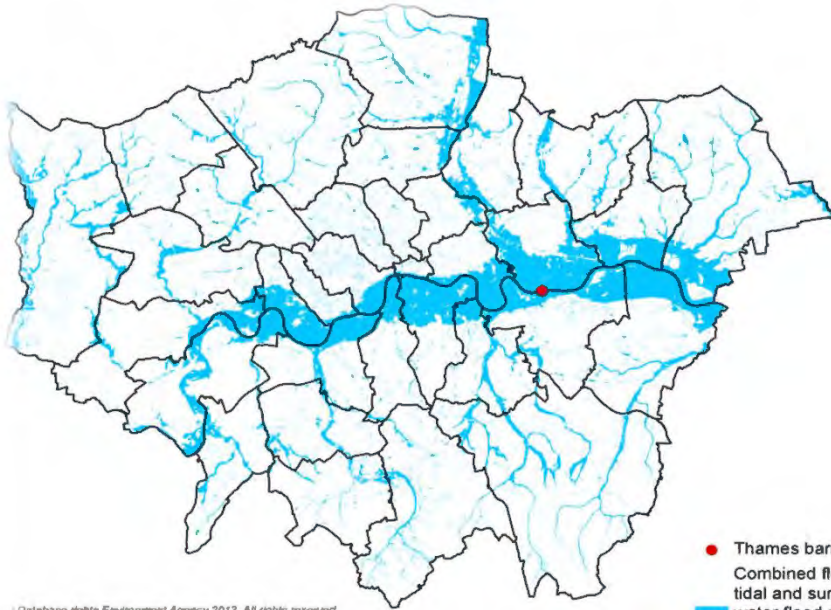
2) Groundwater Flooding

- Affects various locations throughout the borough,
- More notably in the West of the borough where permeable deposits sit on top of the London clay leading to perched water tables.

3) Surface Water Flooding (Pluvial)

- Events localised cause surface water flooding throughout the borough.
- Such as blocked gullies & sewers, surcharging of drainage features, Overwhelming of system due to short and intense rainfall.
- Natural topography of land falls from west to east

Surface Water Flooding Map



London Borough of Haringey



Other London Boroughs

Roles and Responsibility of the Organisations



- Haringey has responsibility for Coordinating all aspects of surface water Flooding and addressing flood risk;
- Approving or rejecting major planning applications relating to SW drainage aspects on new developments;
- Maintaining the asset register of different elements including rain gardens, ponds, swales and tanks etc.



- The Environment Agency has responsibility for Main rivers and major streams
- The role of enforcement authority in relation to reservoirs too.



- Thames Water has responsibility for the provision of new facilities and maintenance of existing foul and surface water sewers;
- Along with associated pumping stations and other structures.

Roles and Responsibility of the Organisations



- Transport for London has responsibility for Drainage systems associated with Principal / major roads.
- Including the improvement of rainwater throughout the London boroughs



- The Canal & River Trust is a charity entrusted with the care of 2000 miles of waterways in England and Wales.
- They have maps of what's going on in the area and the London Waterway Strategy



- If you own land or property next to a river, stream or ditch you are designated as a riparian owner and your responsibilities include:
 - Maintaining riverbeds and banks;
 - Allowing the flow of water to pass without obstruction.

- The council as the 'lead local flood authority' (LLFA) working in partnership with Environment Agency, Thames Water and other stakeholders, to manage the risk of flooding throughout the borough.
- It is not possible to completely stop flooding, but steps can be taken to reduce the effect through measures including of drainage resilience works, SuDS and Flood Alleviation schemes.
- Council's Local Flood Risk Management Strategy (LFRMS) and Flood Water Management Investment Plan (FWMIP) sets out the various investments and proposed schemes within the overall programme.
- These schemes are a 'living document' of proposals which are developed as we understands the various issues that have an impact on flooding across the Borough.

Surface Water Flooding in Haringey

West Green Road



Hornsey Park Road



Stanhope Road



Mayes Road

In response to the rainfall events in July 21 and August 22, the Council has:

- Updated its web page with useful advice.
- Review of its sandbag Policy and policy around other flood management features.
- Improved reporting where blocked gullies and highways flooding directed to Highways Team for action.
- The emergency Planning and Resilience Team have strengthened links with other key teams to build on situational awareness.
- The Multi Agency Flood Plan (MAFP) to be updated to allow responders to take action to events outside the Alerts and Warnings from Met Office
- Progress with the setting up of Leaf Angels for sweeping off leaves from gullies to prevent blockages when heavy rain is forecast.

Haringey has a READI approach for Flood & Water Management:

- **R**esponse through Emergency Planning to flooding events. Our highways contractors can attend reported flooding events with their gully sucker and implement any necessary Traffic Management.
- **E**ducation through the co-design, co-production and information boards at the newly installed SuDS schemes.
- **A**sset Register, improvements and expansion of our drainage features.
- **D**efence of our borough from flooding through cyclical gully cleansing and new drainage features to mitigate the likelihood of flooding.
- **I**ntervention into the Flood & Water Management.

- **From April 2022**, our Highways team have issued around 20,000 reactive maintenance jobs to our term contractor that include 4,195 pothole repairs in the carriageway along 14,500 footway repairs.
- In addition to these works, there has been 144 roads resurfaced, 56 major footway replacement schemes, 3 major repair projects to highways bridges, 1 retaining wall strengthening, 1 historic cemetery wall repaired/strengthening.
- Around 15,800 gullies are cleaned on an annual cyclical programme. During last 2 years, 175 major repairs to gullies have been undertaken and 18 new gullies installed.
- In this period, the team has also installed 26 SuDS features throughout the borough in form of permeable paving, rain gardens, swales and basins.
- All these measures help to mitigate the potential of flooding.

Some Example of Recently Installed SuDS

Crescent Garden SuDS Project



Muswell Hill SuDS Project



Victoria Crescent SuDS Project



Rectory Gardens SuDS Project



Boyton Road SuDS Project



White Hart Lane SuDS Project



Many other SuDS Project within Borough

Haringey
LONDON



Future Projects also includes:

- 1) Borough wide Strategic SuDS pilot Scheme
- 2) Larkspur Close Flood Alleviation Scheme
- 3) Turnpike Lane Flood Alleviation Scheme
- 4) Broad Lane / Spondon Road
- 5) Green Lanes SuDS Scheme
- 6) Priory Park Flood Alleviation Scheme
- 7) Gully Cleansing Programme
- 8) Gullies Civil Works (Repairs)

Thank you...

HARINGEY HEAT RISK

PRESENTED BY ANGHARAD SHAMBLER (HARINGEY COUNCIL)

IMPACTS OF HEAT



IMPACTS OF HEAT

- **Older aged:** especially 75+ years, or those living on their own or in a care home
 - **Chronic and severe illness:** including heart, respiratory and renal conditions, Parkinson's diseases or severe mental illness. Having these underlying conditions and medications to treat these conditions increase the risk of negative health impact during heatwaves.
 - **Pregnant Women & Children:** immature thermoregulation, small body, high dependency level increase the risk to heat stress.
 - **People experiencing Homelessness:** in addition to environmental factors such as exposure to urban heat island, higher rates of underlying risk factors (chronic conditions, mental illness, alcohol and/or substance dependency) increase the risk in this population group.
 - **Alcohol and drug dependence:** often have poorer overall health and increased social isolation, which can increase their risk of heat stress.
 - **Inability to adopt behaviours:** including people with Alzheimer's disease, disability, being bed-bound.
 - **Environmental factors and overexposure:** living urban areas with south-facing top-floor flats, high-intensity activities or physical jobs outside/in hot places.
 - **Employment Type:** outdoor and manual workers, athletes
-

IMPACTS OF HEAT

In a moderate heatwave, it is mainly high-risk groups who are at risk of health impact.

During an extreme heatwave, fit and healthy people can also be negatively affected.

Multiple vulnerabilities increase the risk of health impacts:



The less able, pregnant, or
already infirm



The poor, displaced, and
homeless



Children & the elderly



Athletes

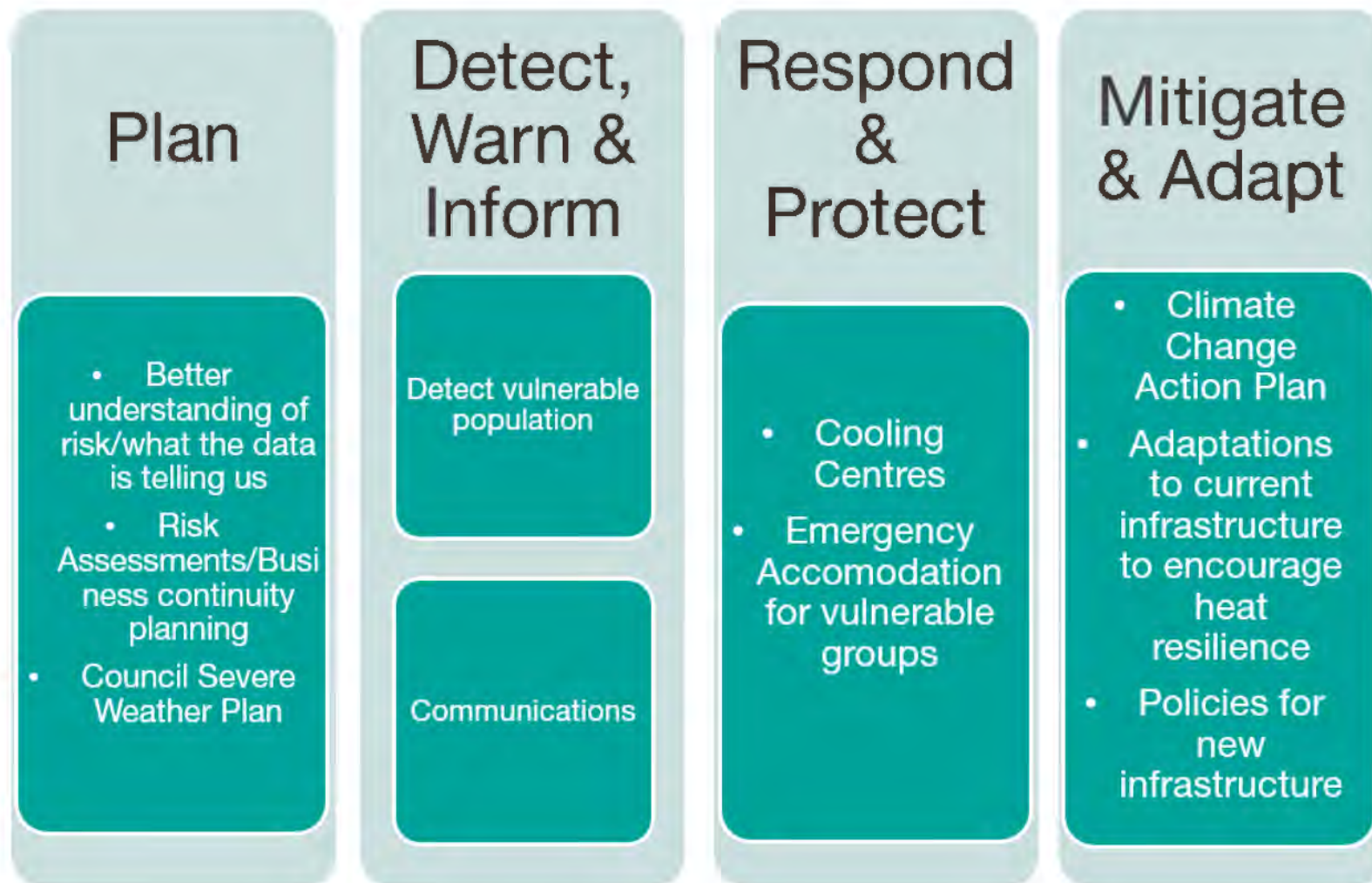


Outdoor & manual
workers

WHY IS THIS IMPORTANT?

- Climate Change and global warming pose **significant threats to public health**.
- Local councils play a pivotal role in making sure the UK is **prepared for impacts of climate change at a local level**.
- Growing evidence demonstrates that **rising temperatures cause increased and prolonged heatwave events**, which have substantial and largely negative effects on health.
- Since the 1980s, there has been **a 6-fold increase in heatwaves worldwide** and average global temperatures are expected to rise by 4 degrees Celsius by 2065 (using a high emission scenario).

WHAT CAN WE DO?



HARINGEY CLIMATE RISK

PRESENTED BY BLOOMBERG ASSOCIATES

LONDON CLIMATE RISK MAPS

- Bloomberg Associates (BA) is the philanthropic consulting arm of **Bloomberg Philanthropies**.
- We work side by side with client cities to improve the **quality of life** for residents.
- We typically work alongside our client cities for 2-4 years, taking a **strategic, collaborative, and results-oriented** approach to make cities strong, safer, more equitable and efficient.

LONDON CLIMATE RISK MAPS

To help the London target its resources to communities with the highest climate risks, Bloomberg Associates produced a series of citywide maps that layer key datasets to identify areas within London that are most **exposed** to climate impacts with high concentrations of **vulnerable** populations.

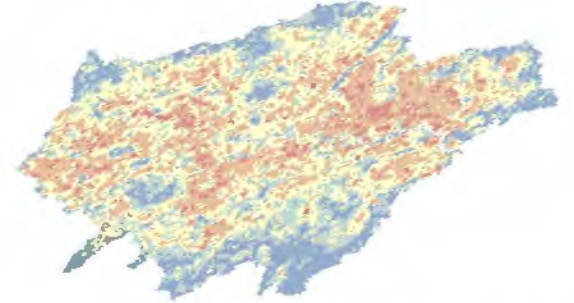
LONDON CLIMATE RISK MAPS: METHODOLOGY

Our strategy for assessing climate risk involved creating maps from multiple datasets, including **heat data, flood data, and demographic data**.

We used mapping technology to add datasets together to identify hotspots of climate risk across London.

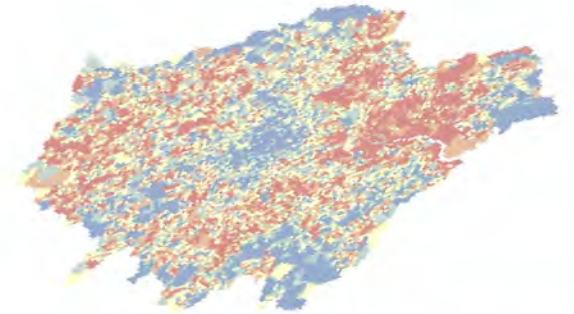
Three maps were created using different combinations of datasets: **Overall Climate Risk, Heat Risk, and Flood Risk**.

Heat, Flood, and Environment Data



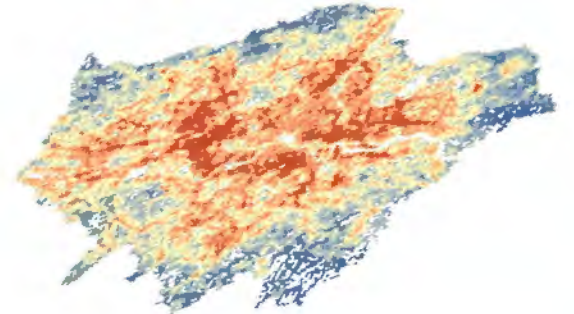
+

Demographic Data



=

Climate Risk Maps



LONDON CLIMATE RISK: READING THE MAPS

The London Climate Risk Maps Tool on the GLA website allow users to interact with Climate Risk data. The tool has a slider in the middle - on the left side of the slider, you can view the Climate Risk Maps, and on the right side, you can toggle on and off individual datasets that went into the Climate Risk Maps.

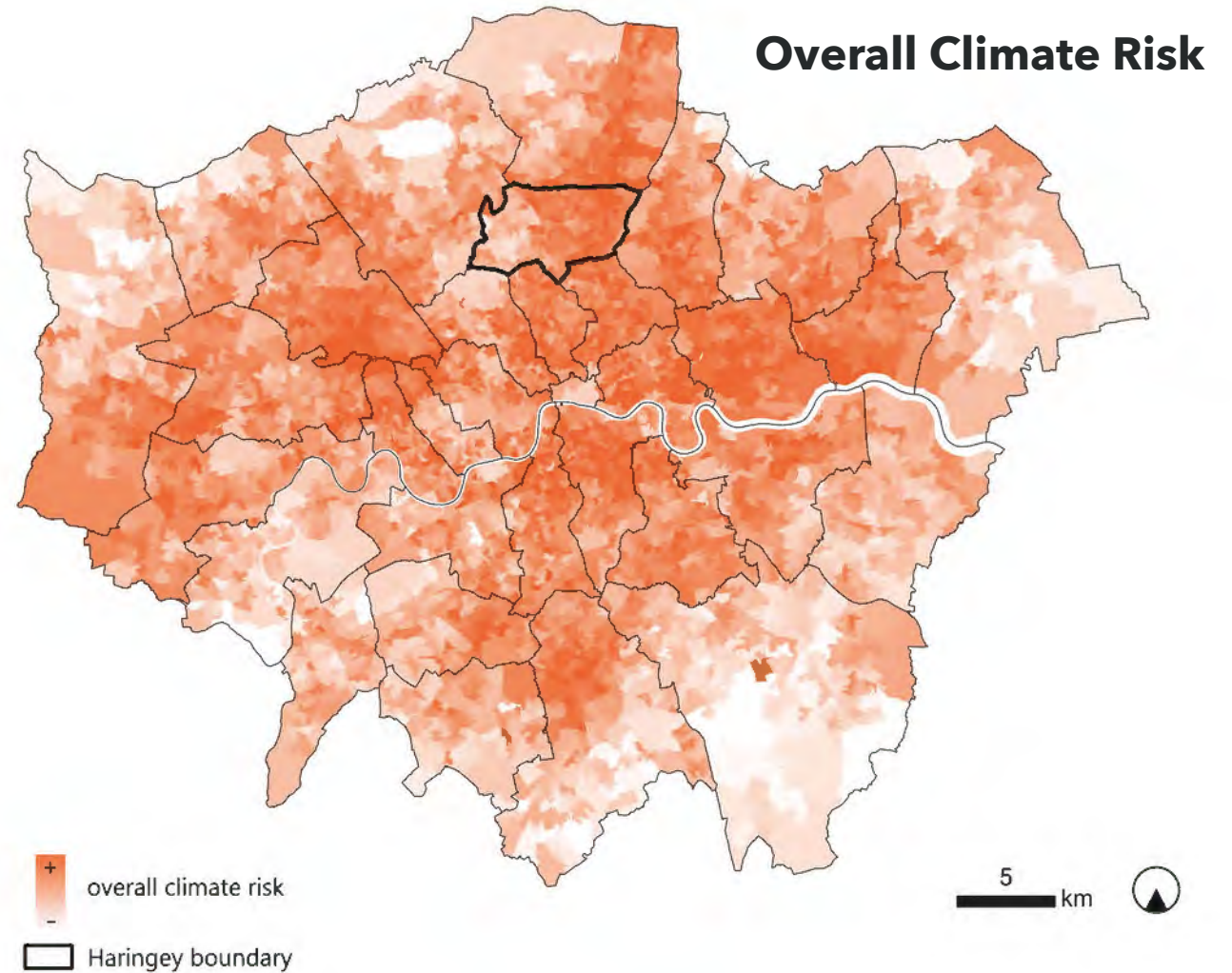
For the Climate Risk Maps online, risk is shown as a color gradient from red to blue. **High risk** areas are those in red, and **low risk** areas are those in blue. For the borough maps in this presentation, darker colors indicate a **higher** concentration of the data in question, and lighter colors indicate a **lower** concentration.



HARINGEY CLIMATE RISK MAPS

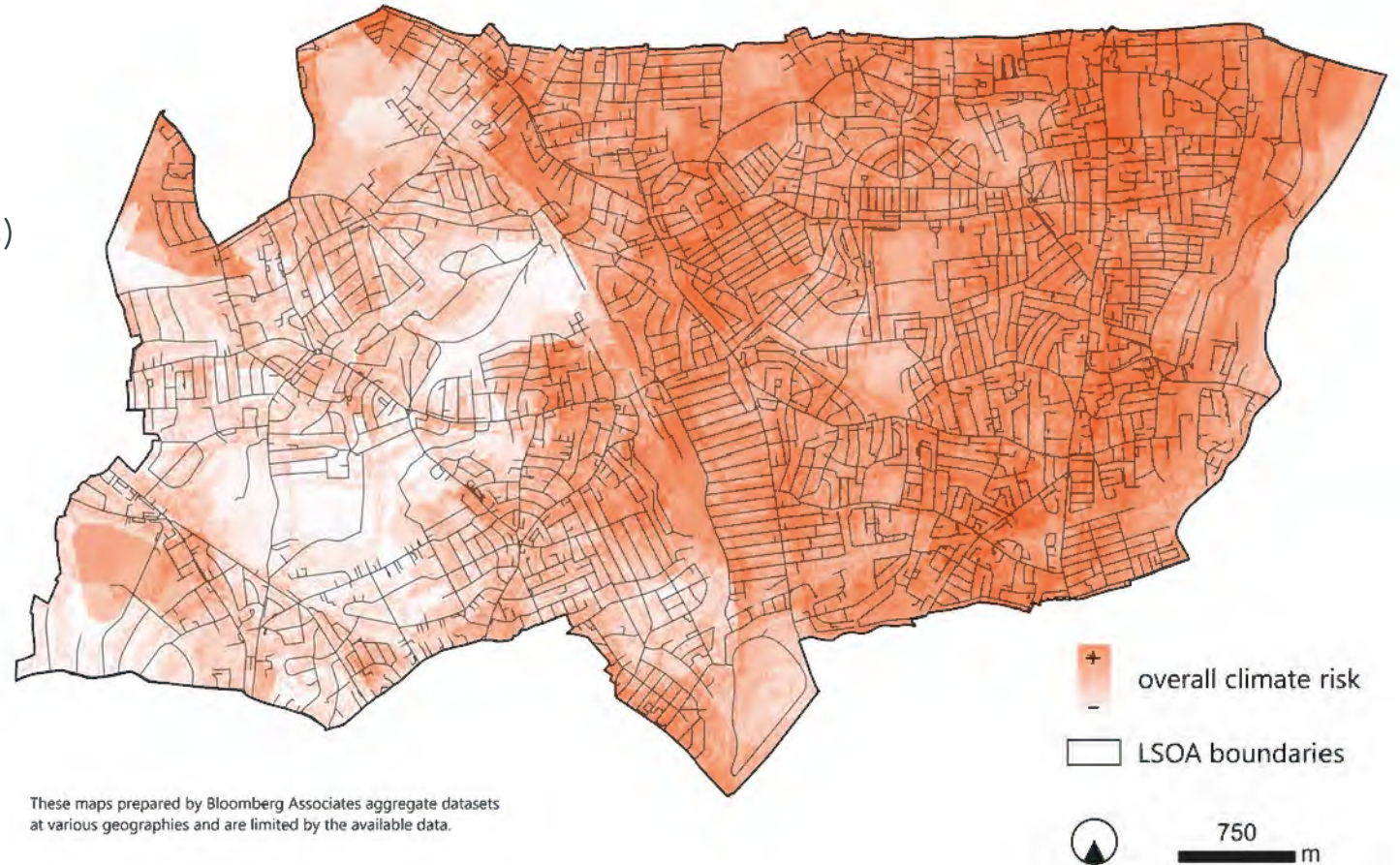
Our **Climate Risk Maps** assess climate risk by combining 13 metrics, which include:

- % of people under age 5
- % of people over age 75
- % of people not proficient in English
- % of people considered income deprived
- % of people in social housing
- % of people identifying as BAME
- Average land surface temperature (Celsius)
- Concentration of NO2 (air pollutant)
- Concentration of PM2.5 (air pollutant)
- % area with tree canopy cover
- % of area with surface water flood risk
- % of area with blue/green land cover
- % of area with a lack of access to public open space



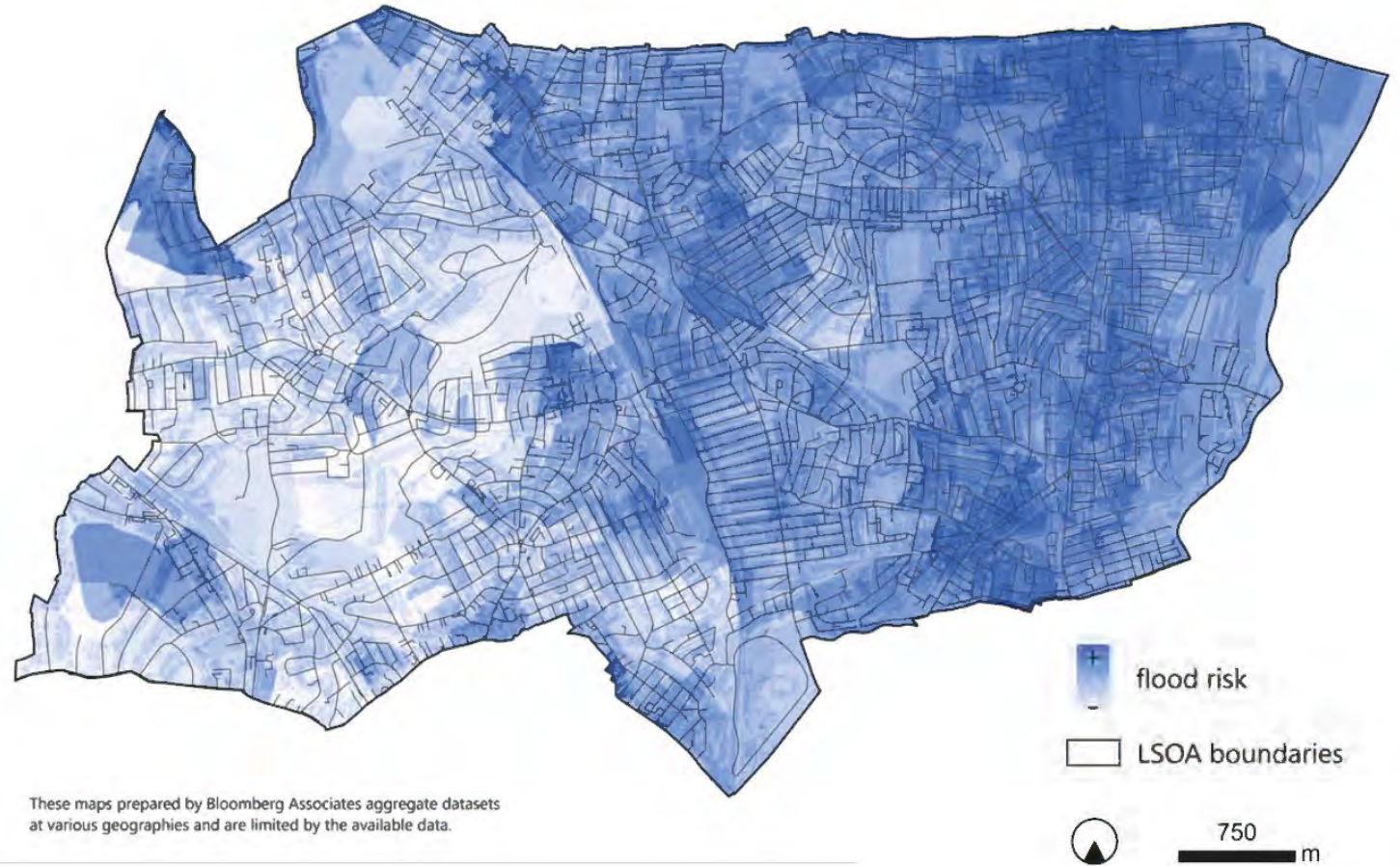
HARINGEY OVERALL CLIMATE RISK

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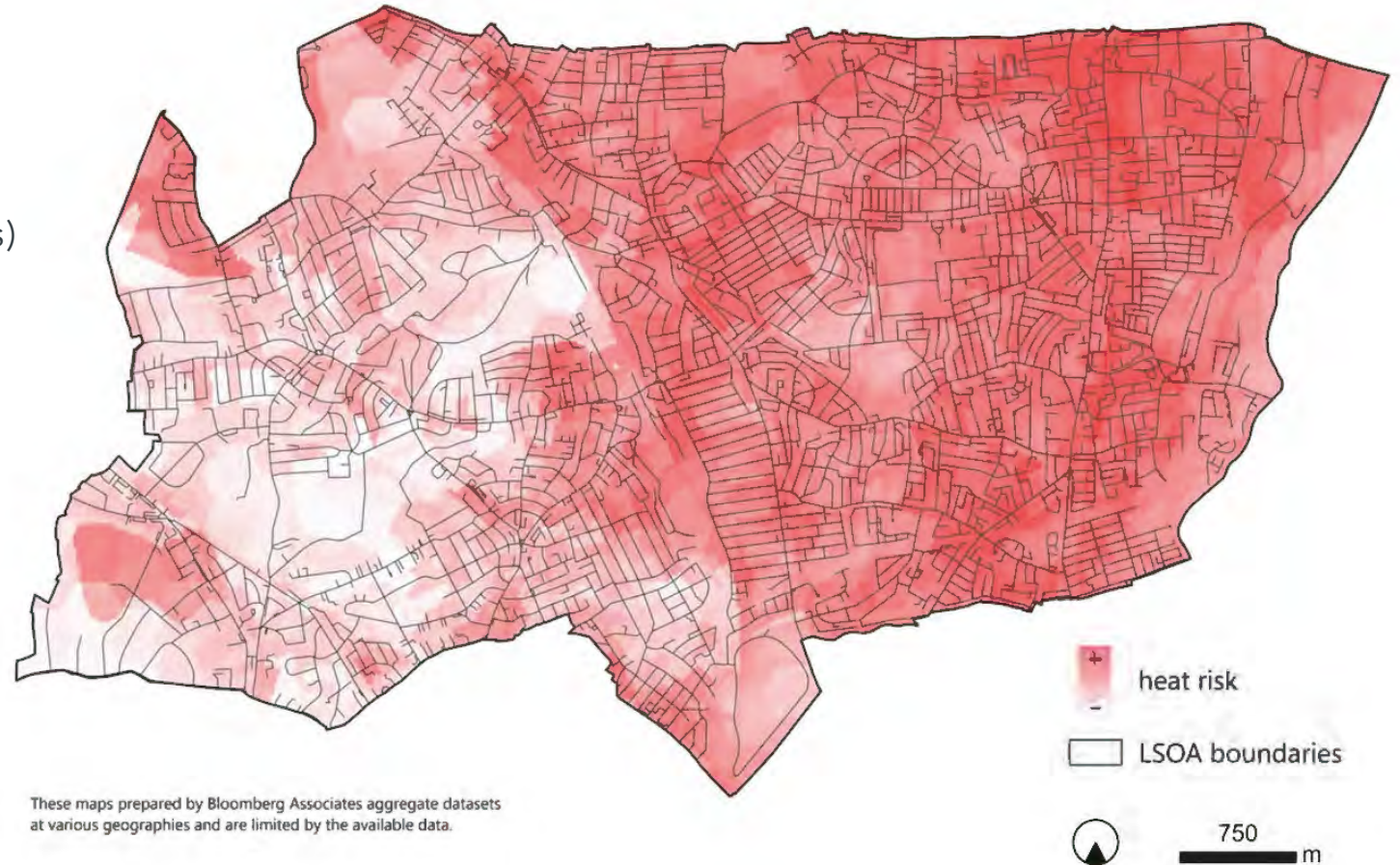
HARINGEY OVERALL FLOOD RISK

- % of people under age 5
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HARINGEY OVERALL HEAT RISK

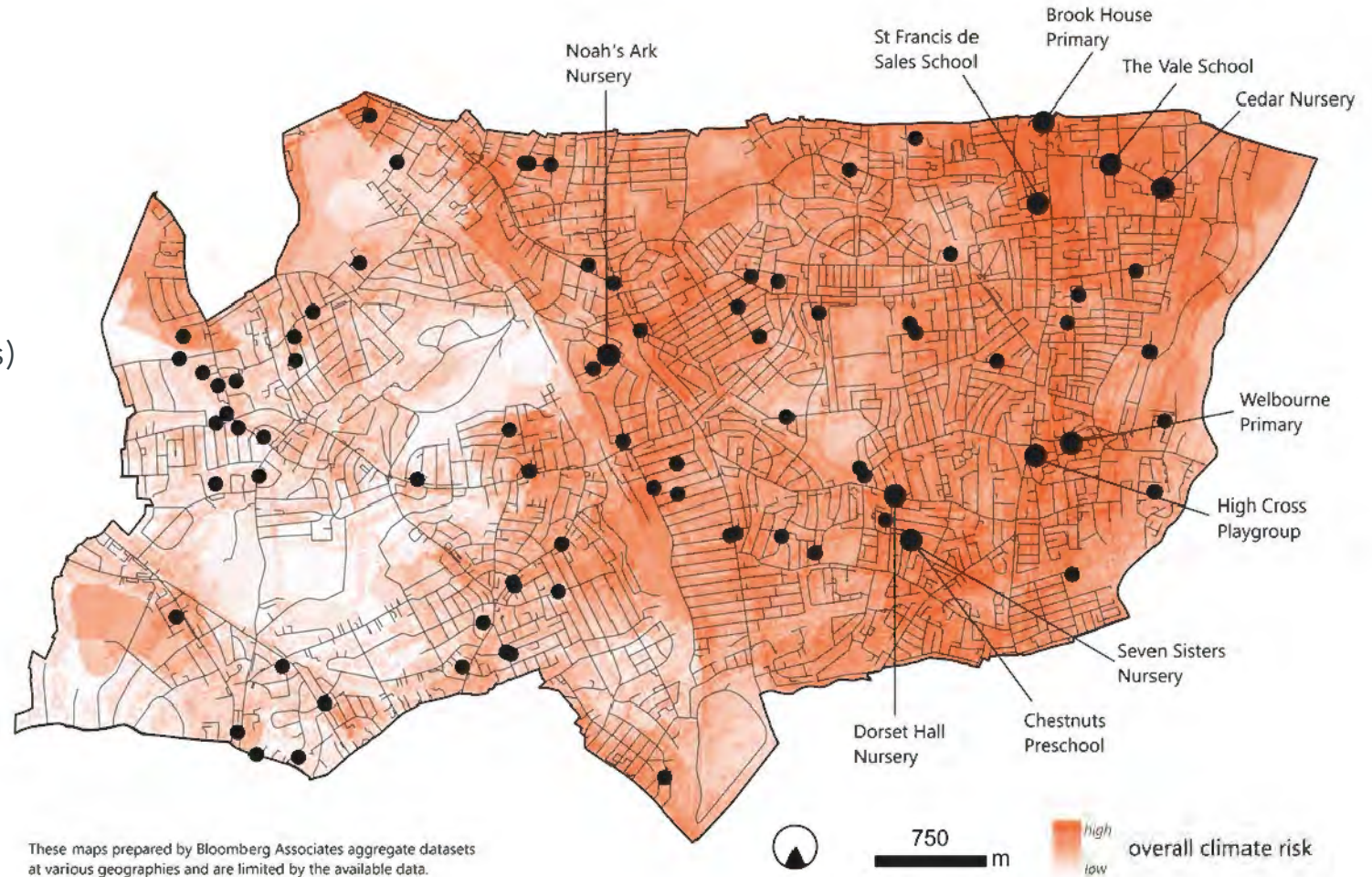
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HARINGEY SCHOOL FACILITIES IN HIGH-RISK AREAS

Overall Climate Risk:

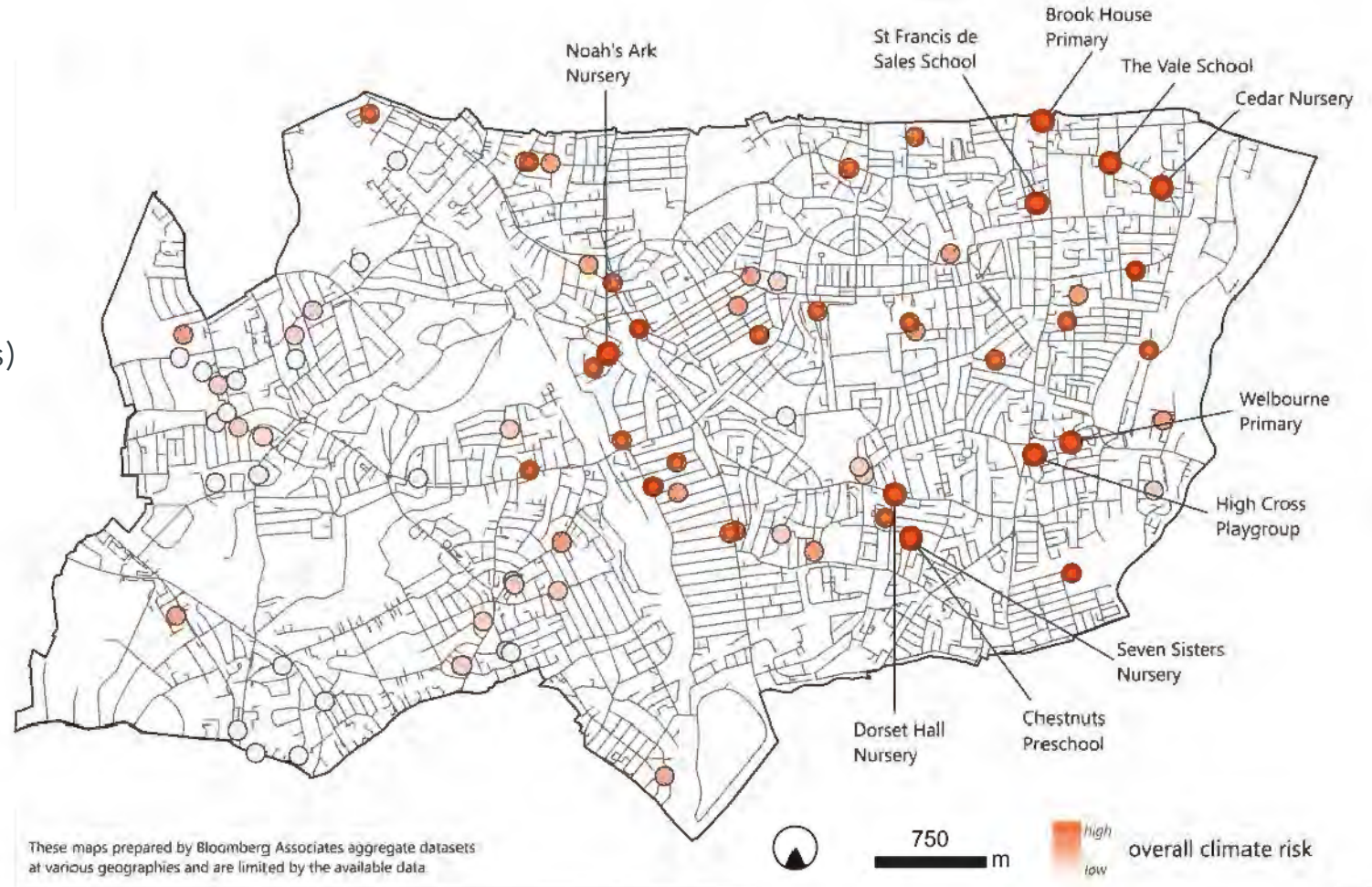
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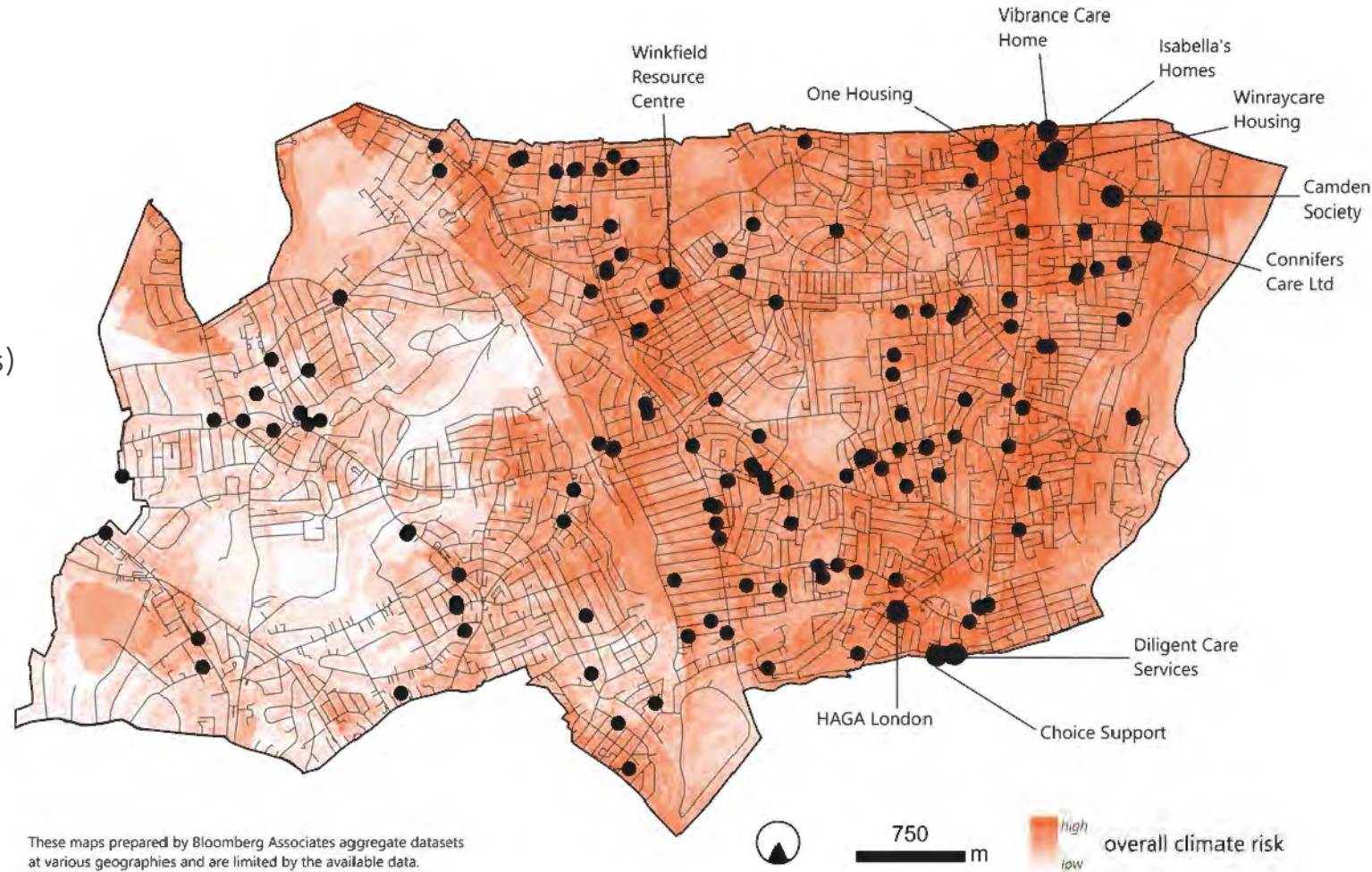
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HARINGEY HEALTH FACILITIES IN HIGH-RISK AREAS

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- % of people under age 5
- % of people over age 75
- % of people not proficient in English
- % of people considered income deprived
- % of people in social housing
- % of people identifying as BAME
- Average land surface temperature (Celsius)
- Concentration of NO₂ (air pollutant)
- Concentration of PM_{2.5} (air pollutant)
- % area with tree canopy cover
- % of area with surface water flood risk
- % of area with blue/green land cover
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HARINGEY HEALTH FACILITIES IN HIGH-RISK AREAS

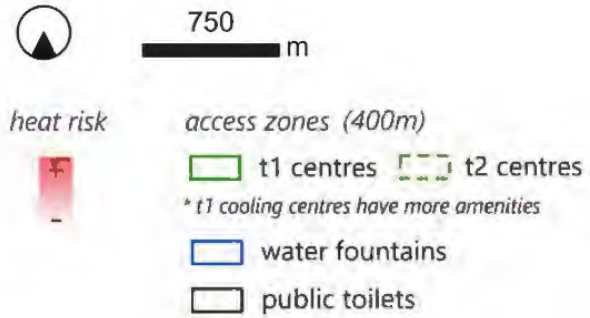
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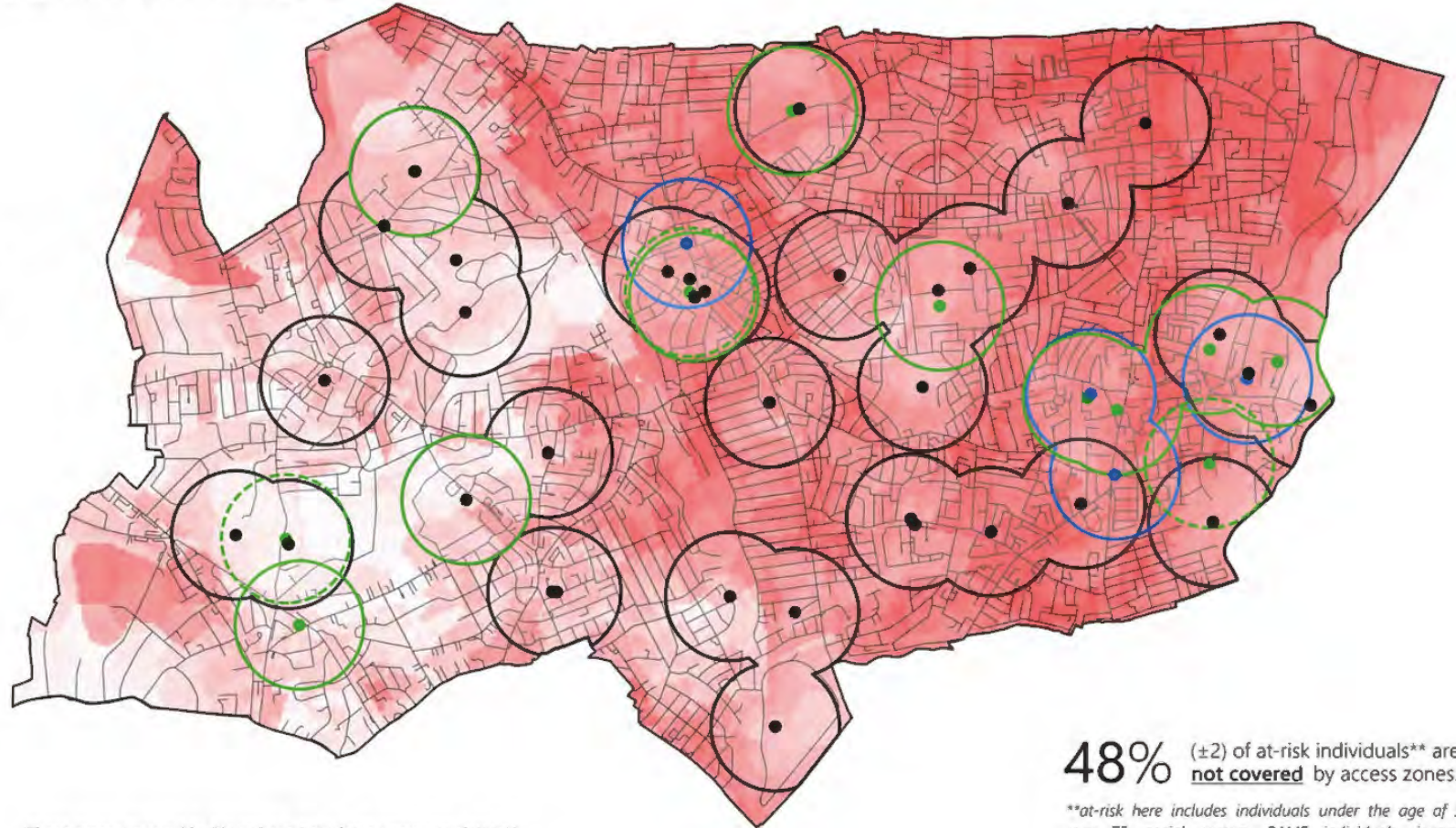
HARINGEY OVERALL HEAT RISK

with cooling centres, water fountains, and public toilets



*Cooling centers generally have toilets and running water, and that public toilets generally have running water.

*Cooling centers shown are those designated as of June 2023. The map may not fully encompass the most current locations of centers.



These maps prepared by Bloomberg Associates aggregate datasets at various geographies and are limited by the available data.

48% (± 2) of at-risk individuals** are **not covered** by access zones.

**at-risk here includes individuals under the age of 5, over 75, social renters, BAME individuals, income deprived populations, or those not fluent in English.

HARINGEY OVERALL HEAT RISK

with cooling centres, water fountains, and public toilets



750
m

heat risk



access zones (400m)



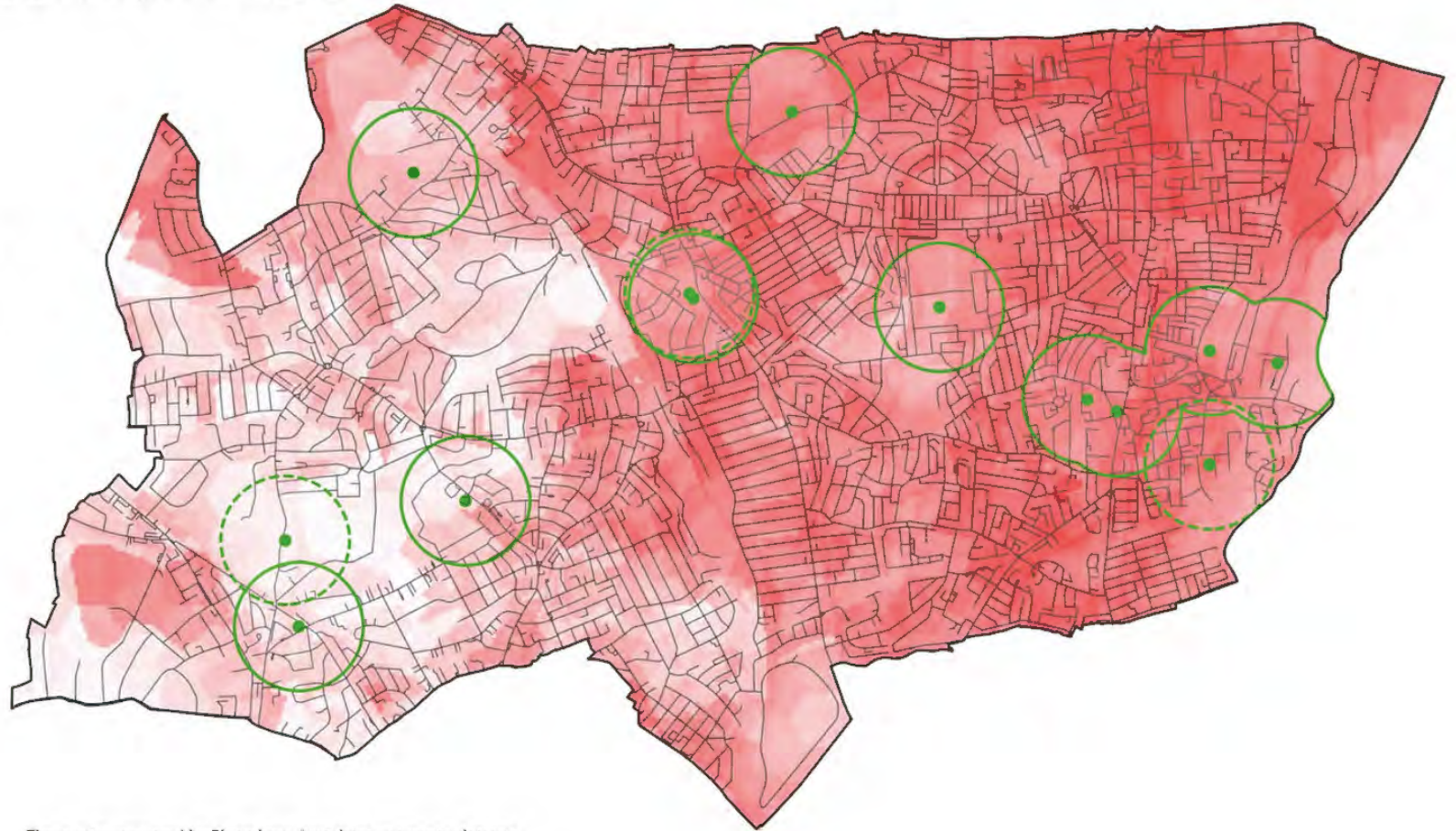
t1 centres

t2 centres

** t1 cooling centres have more amenities*

*Cooling centers generally have toilets and running water, and that public toilets generally have running water.

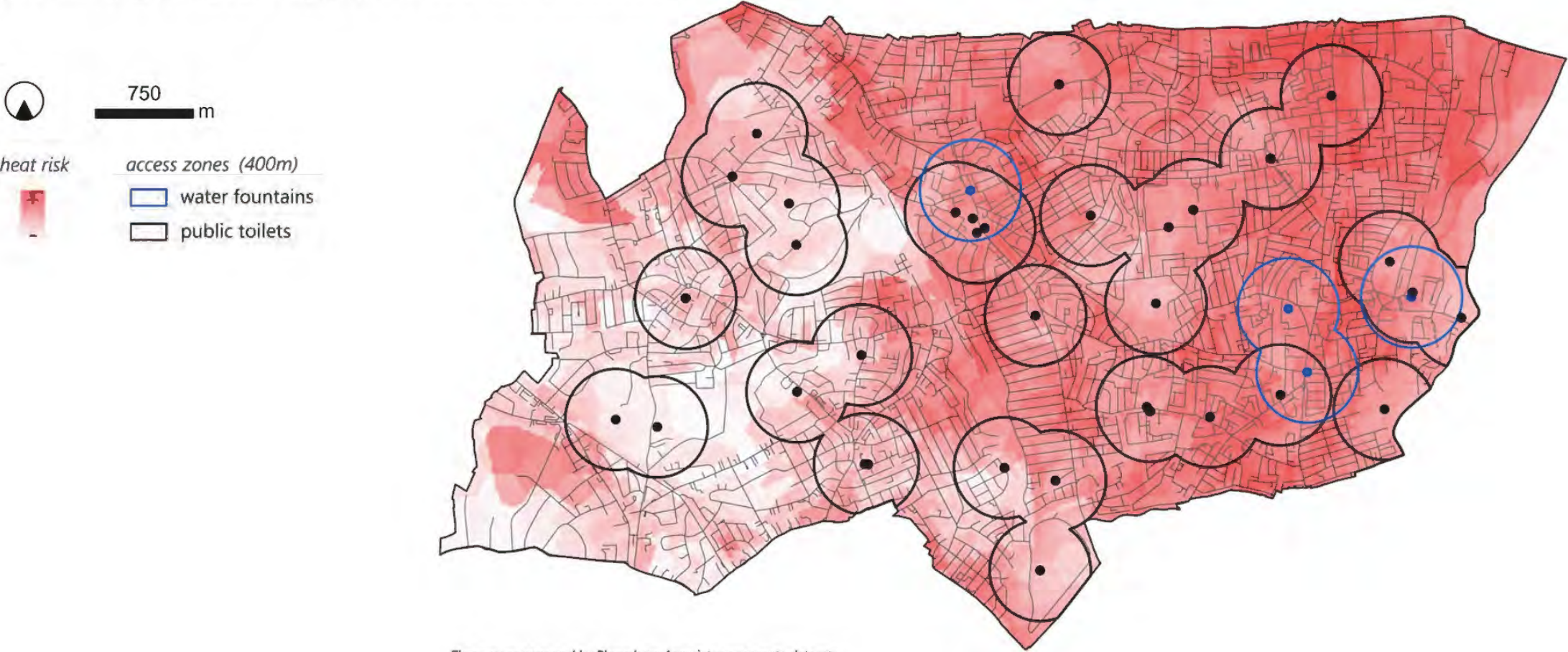
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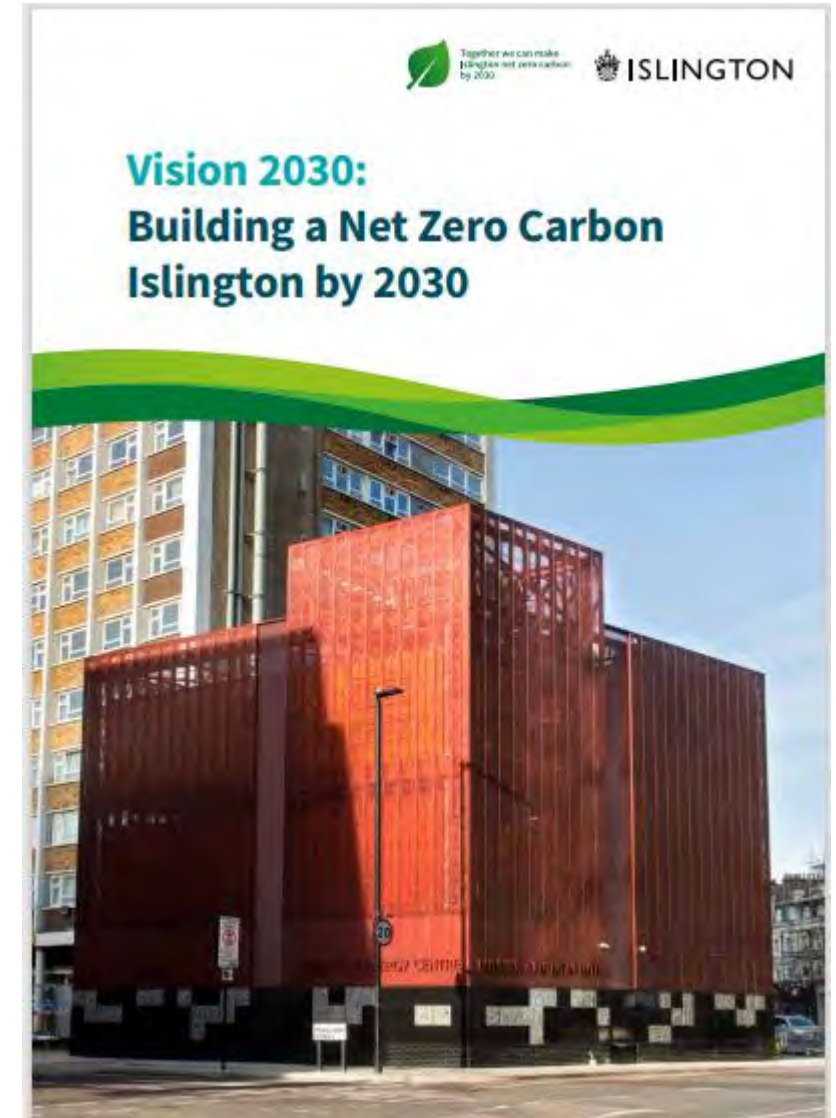
ISLINGTON CITIZENS' RESILIENCE PLAN

Islington Climate Panel

Sarah Hitchcock, Head of Climate Action

Climate Change in Islington

- Declared a climate emergency in 2019
- Published a net zero carbon strategy in 2020
- Committed to engage our residents, businesses and partners on reducing emissions
- But...
- Climate change is already here and our communities are being impacted
- Reducing carbon emissions isn't enough
- Need to address climate adaptation and resilience



Islington Climate Panel – key principles

1. **In person engagement:** 4 x Saturdays and 4 x Tuesday evening sessions from April to July with follow up sessions planned; supported by online access to Let's Talk Islington.
2. **Representative:** to ensure effective democratic participation we recruited a demographically representative pool of residents and with a spread of views and knowledge of climate issues.
3. **Manageable size:** 30-40 people to ensure meaningful dialogue and high-quality discussion.
4. **Externally facilitated:** to ensure the panel maintains impartiality/transparency, with council staff gaining skills.
5. **Inclusive:** incorporated climate awareness training to enable people to participate effectively, sessions are accessible in location, time and style

Key dates (abbreviated)



What does a climate-resilient Islington look like and how do we get there?

External experts from UCL, Shade the UK, Centre for Alternative Technology, ThreePointFive, GenEarth, GLA

Internal experts from Public Health and Emergency Planning plus colleagues from across the council

Panel Process

1. Providing context / learning from Panel members

- Introduce climate science and predicted national/local impacts, including public health.
- Share what Islington Council and other stakeholders in the borough are currently doing.

2. Visioning “What does a climate resilient Islington look like, and how do we get there?”

- Consider opportunities and challenges to creating a more equal and resilient Islington.
- Craft guiding principles to underpin conversations, options, and recommendations.

3. Emergency Planning for extreme weather

- Feedback on existing approach to managing extreme weather events.
- Consider how to increase community resilience in extreme weather.

4. Greening the Borough (Green Infrastructure Strategy)

- Collaborate with Greenspace to agree vision, and consider opportunities and challenges.

5. Dialogue feedback loop with Councillors and Officers

- Together refine ideas and proposals.

Sylvie said

- I'm very concerned about climate change - not just for my own life but for the kids. You see what the future holds, and how slow politics is
- if there is the opportunity to give feedback, and to have an input, then yeah, here I am!
- it would be nice if there was a network of support for each other

Joe said

"I had a letter through the door, and I felt inspired to participate because I love the borough, I fell in love with it instantly, and I think **there is such a nice atmosphere here and community and I would like to be part of that.**"

'The **residents are what makes Islington Islington**, it's the people who live there, and **the council has a unique position to connect people** in ways that it's very hard to do on your own. [...] the council are in a very unique position where they can facilitate conversations, and **by connecting people, they can make a real positive difference and see a flourishing and resilient Islington.**'

TABLE DISCUSSION

TERMINOLOGY

- **Climate Mitigation** - Reducing the gases that create climate change. (i.e Carbon Dioxide)
- **Climate Adaption** - a wide range of measures to reduce vulnerability to climate change impacts, (i.e. planting crop varieties that are more resistant to drought, or stronger defences against floods). 
- **Climate Resilience** - The ability to prepare for, recover from, and adapt to a changing climate. The formal definition of the term is the "capacity of social, economic and ecosystems to cope with a hazardous event or trend or disturbance". 

DISCUSSION QUESTIONS

- What are the key Climate Risks that you think we should focus on and why?
- How should the borough increase its resilience to a changing climate?
- How should we communicate Climate Change Adaption and Resilience to the Community?

Appendix

CLIMATE RISK METRICS

We reviewed several risk indices and evaluated more than 30 metrics to understand the factors that are driving Londoners' **exposure** and **vulnerability** to climate risks and developed a set of 13 prioritized metrics for initial analyses.

EXPOSURE METRICS*

- Heat Risk Index (Land Surface Temperature)
- Surface Water Flood Risk
- Air Pollution (PM2.5 Concentration and NO2 Concentration)
- Green/Blue Land Cover (%)
- Tree Canopy Cover (%)
- Areas of Deficiency in Access to Public Open Space

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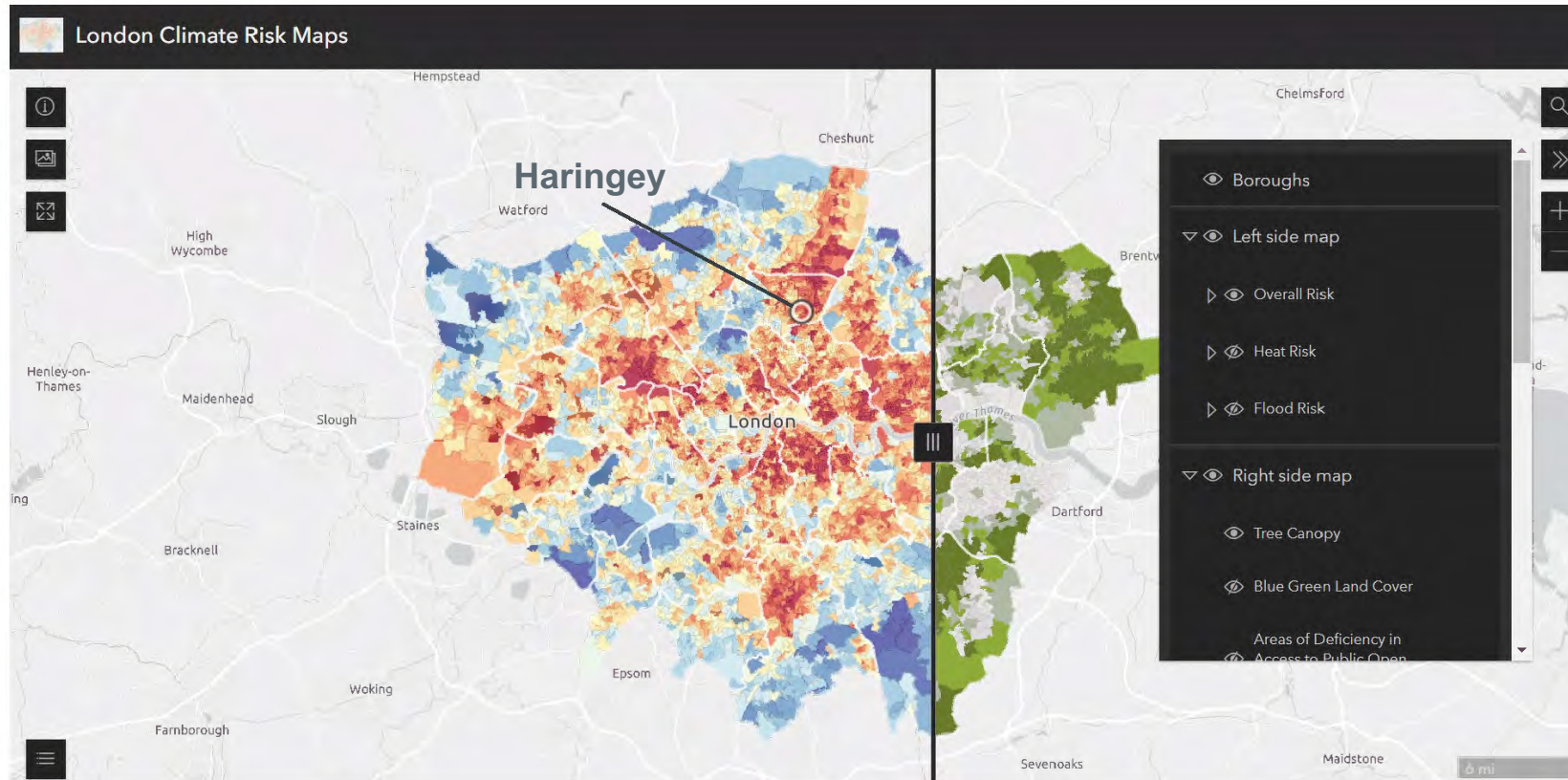
VULNERABILITY METRICS*

- Black, Asian, and Minority Ethnic Populations (%)
- Vulnerable Age Groups (% population <5 and >75)
- Not English Proficient (%)
- Income Deprivation (%)
- Social Renters (%)

LONDON CLIMATE RISK MAPPING TOOL

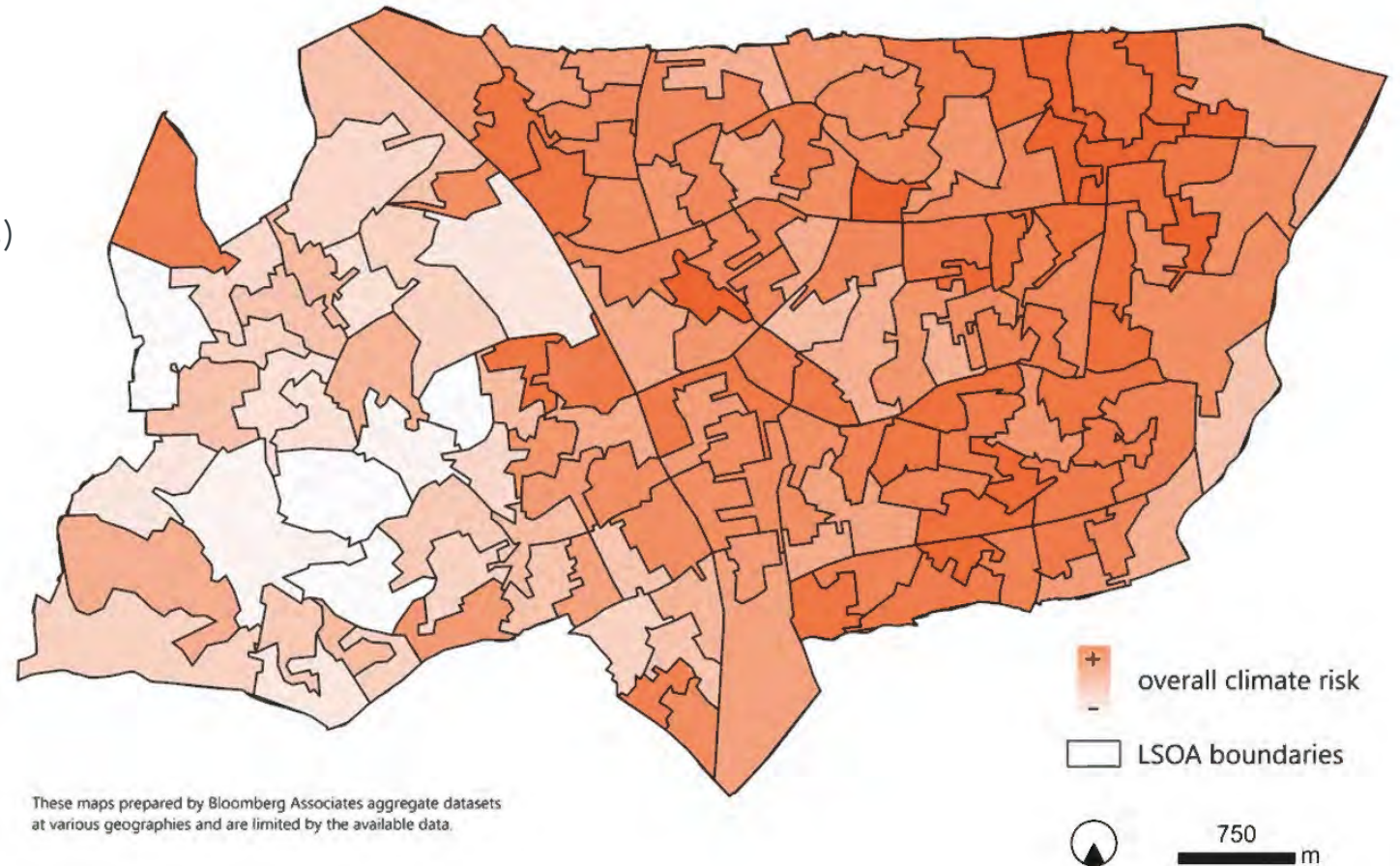
Bloomberg Associates to present the mapping tool via the GLA weblink:

[London Climate Risk Interactive Map](#)



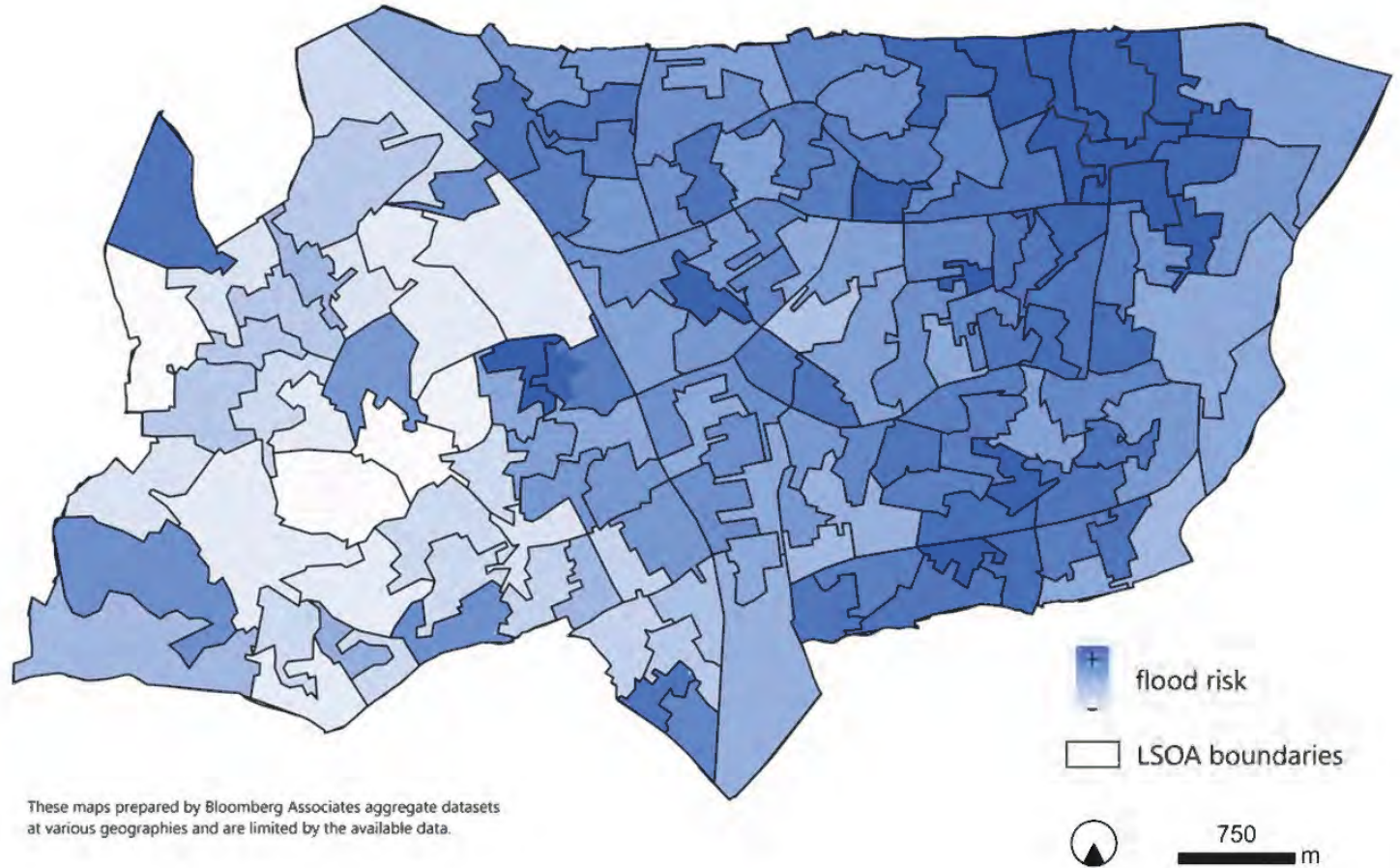
HARINGEY OVERALL CLIMATE RISK

- % of people under age 5
- % of people over age 75
- % of people not proficient in English
- % of people considered income deprived
- % of people in social housing
- % of people identifying as BAME
- Average land surface temperature (Celsius)
- Concentration of NO2 (air pollutant)
- Concentration of PM2.5 (air pollutant)
- % area with tree canopy cover
- % of area with surface water flood risk
- % of area with blue/green land cover
- % of area with a lack of access to public open space



HARINGEY OVERALL FLOOD RISK

- % of people under age 5
- % of people over age 75
- % of people not proficient in English
- % of people considered income deprived
- % of people in social housing
- % of people identifying as BAME
- % area with tree canopy cover
- % of area with surface water floor risk
- % of area with blue/green land cover
- % of area with a lack of access to public open space



HARINGEY OVERALL HEAT RISK

- % of people under age 5
- % of people over age 75
- % of people not proficient in English
- % of people considered income deprived
- % of people in social housing
- % of people identifying as BAME
- Average land surface temperature (Celsius)
- Concentration of NO2 (air pollutant)
- Concentration of PM2.5 (air pollutant)
- % area with tree canopy cover
- % of area with a lack of access to public open

