GREATER LONDON AUTHORITY

MANAGING RISKS AND INCREASING RESILIENCE

THE MAYOR'S CLIMATE CHANGE ADAPTATION STRATEGY

CONSULTATION REPORT

OCTOBER 2011

Managing risks and increasing resilience: the Mayor's Climate Change Adaptation Strategy - Consultation Report

Contents

1. Introduction and background

This document summarises the main themes and issues raised by the public and organisations during the consultation process on the Mayor's Climate Change Adaptation Strategy ('CCAS'). It provides a response to these issues from the Greater London Authority (GLA) and describes any resulting changes to the CCAS. This is the first CCAS to be produced.

This section summarises the statutory framework for the Mayor's climate change adaptation powers and responsibilities, and the requirements for consultation associated with these. Section 2 provides details of the process undertaken by the GLA to ensure extensive and inclusive consultation during the strategy development process. Section 3 identifies the main findings from the various strands of consultation, and sets out how the GLA has responded to these, and whether any changes are proposed to the text of the final version of the CCAS submitted to the Mayor for his approval.

1.1 The Mayor's powers

The GLA Act was revised in 2007 to place a legal responsibility on the Mayor to prepare and keep up to date a Climate Change Adaptation Strategy for London (under section 361A of the GLA Act). The Mayor is under a duty to address climate change so far as relating to Greater London. This includes the duties:

- To take action with a view to the mitigation of, or adaptation to, climate change;
- In exercising any of his functions under the GLA Act or any other Act (whenever passed), to take into account any policies announced by Her Majesty's Government with respect to climate change or the consequences of climate change; and
- To have regard to any guidance, and comply with any directions, issued to the GLA by the Secretary of State with respect to the means by which, or manner in which, the Mayor is to perform the above duties.

The Act states that the adaptation to climate change strategy for London shall contain:

a. The Mayor's assessment of the consequences of climate change for Greater London;
b. The Mayor's proposals and policies for adaptation to climate change, so far as relating to Greater London Authority.

The Secretary of State may give to the Mayor guidance:

a. about the content of the strategy;
b. in relation to the preparation or revision of the strategy.

The guidance that may be given under subsection above includes:

a. Guidance as to the evidence of climate change or its consequences, or predictions of climate change or its consequences, to which the Mayor must have regard.

In the development of his strategies, the Mayor must also have regard[1] to the GLA's principal purposes of promoting economic development and wealth creation in Greater London; promoting social development in Greater London; and promoting the improvement of the environment in Greater London.

1.2 Consultation requirements

Under the GLA Act, in preparing or revising the CCAS, the Mayor must consult:

- the London Assembly and his four 'functional bodies'
- London boroughs and the City of London
- A number of organisations set out in the government's guidance on the strategy (see Appendix 1)
- any other body or person whom he considers it appropriate to consult, including the general public.

The Mayor is required to consult the London Assembly and the functional bodies first, before going on to consult the other bodies and groups mentioned.

Beyond these mandatory requirements the GLA is committed to producing strategies and policies that are informed by, and responsive to, the views and needs of Londoners. The Mayor welcomes the views of stakeholders to ensure that his policies are more effective and have a greater impact on those who live, work and visit London.

[1] Section 41(4)(a), GLA Act 1999

2. Consultation process

The strategy consultation process had two stages, the first being in August – November 2008, when the Mayor consulted with the London Assembly members and GLA 'functional bodies' (London Development Agency, Transport for London, London Fire and Emergency Planning Authority, Metropolitan Police Authority) on the first draft. Following this, on 09 February 2010, a revised draft was published for consultation with other organisations and the public. This concluded on 09 May 2010.

Consultation was also undertaken directly with a variety of organisations throughout the strategy development process. These included:

- Government departments
- Non-governmental organisations (NGOs)
- Charities
- Environment and Transport Organisations
- Business Groups
- Community organisations

Hard copies of the CCAS consultation documents were available at City Hall and upon request.

2.1 Consultation with the London Assembly and functional bodies

The first draft of the strategy was presented to the London Assembly and functional bodies for consultation in August 2008. The Environment Scrutiny Committee submitted comments on behalf of the Assembly. In his response to the Assembly's comments, the Mayor outlined how he intended amending the CCAS and where the Assembly's comments were not taken on board, reasons were provided. The Mayor published his formal response to the Assembly's comments in February 2010 alongside the revised draft of the CCAS published for the second stage of the consultation process.

2.2 Consultation with the public and other organisations

Between February and May 2010 the statutory consultation took place with the public and other stakeholders, with a deadline for written responses on 09 May 2010. The draft strategy publications and consultation activities were deliberately designed to be easily accessible to Londoners with little or no knowledge of climate change issues and to encourage as full and considered responses as possible. The public consultation on the CCAS was combined with the first (London Assembly) consultation on the Mayor's Climate

change Mitigation and Energy Strategy (CCMES) to enable stakeholders to understand how the Mayor is tackling both aspects of climate change simultaneously.

The following consultation exercises were undertaken:

- **CCAS consultation website:** A website was developed to inform, engage and enable Londoners to consider their role in adapting to climate change. Approximately 7,000 visited the site. A total of 150 ideas were posted and 351 comments posted (including comments on reducing CO_2 emissions).

- **A public exhibition at City Hall and London Zoo:** To raise awareness of the CCAS website and encourage posting of ideas on the site, a number of celebrity portraits along with their ideas were exhibited at City Hall and later moved to London Zoo. In excess of 19,000 people viewed the exhibition at London Zoo.

- **Meetings with stakeholders.** Targeted meetings with organisations to discuss actions and collaborative working around the Climate Change Adaptation strategy.

- **London Climate Change Partnership Forum:** Stakeholders were invited to attend a bespoke Forum meeting arranged by the London Climate Change Partnership to discuss various aspects of the strategy in detail. A total of 54 people from 42 organisations attended and contributed to the consultation event.

- **Engaging the hard-to-reach:** Supplementary activity was carried out to target groups who are traditionally hard to engage in government consultation.

- **Representative survey of Londoners:** A total of 1,000 Londoners' views on climate change were sought as part of a regular telephone poll.

- **Annual London Survey:** In the 2010 Annual London Survey (a representative survey of 1,490 Londoners), a number of questions were asked about people's perceptions of climate change and environmental priorities for London.

2.1.1 Consultation website

The consultation website offered Londoners several ways to have their say on the strategy. Londoners could respond by:

- Uploading their own idea for climate change adaptation
- Commenting on ideas uploaded by other Londoners
- Completing a more detailed online SNAP survey
- Writing a letter or email to the address provided
- Calling a member of the climate change team on the phone number provided.

A marketing and communications campaign was designed and delivered to promote the website. This included:

- Media and stakeholder launch
- Email campaign
- Social media activity

- Direct mails to libraries
- Engaging bloggers
- Private sector engagement

Overall, the consultation website attracted 7,000 visitors. A total of 150 ideas were posted and 351 comments posted (including comments on reducing CO_2 emissions). 7 completed online surveys and 19 more in-depth consultation responses were received. Comments and responses to these comments are listed in section 3. A full breakdown of engagement statistics can be provided upon request.

2.1.2 Online survey questionnaires

An online questionnaire was available for the public to complete. However since only seven consultation questionnaires were returned, the results do not form part of the report.

Public views and opinions were gathered from a number of sources:

- A representative telephone survey of 1000 Londoners
- Questions included in the Annual London Survey, a face-to-face representative survey of 1400 Londoners
- 152 people contributed ideas for actions the public could take to adapt to climate change, and a further 351 people discussed those ideas on the Climate Change Adaptation website. The website itself attracted 8,540 visitors to view the debate and the draft strategy documents.

Public responses to the consultation are documented throughout this report by policy area. All survey toplines are available to view at: http://www.london.gov.uk/get-involved/consultations

2.1.3 A public exhibition at City Hall and London Zoo

To complement the website photographs of well known Londoners and their ideas for climate change actions was held in City Hall between 09 February and 27 March. The exhibition was then moved to London Zoo for the remaining consultation period.

The exhibition launch was attended by 70 key stakeholders and members of the press. It was moved to London Zoo to coincide with the Easter Weekend, one of the Zoo's busiest times of the year with approx 84,000 visitors across the weekend. An exhibition panel explaining the context of the consultation and leaflet were produced to support the exhibition.

2.1.4 Meetings and events

A number of meetings took place with stakeholders to discuss actions and issues featured in the Draft CCAS. These are listed below:

Date	**Event / Audience**	**Location**
9 Feb	CCAS Launch	City Hall
10 Feb	CCAP Steering Group	City Hall
17 Feb	Sustainable Homes Index for Tomorrow	City Hall
17 Feb	Royal Meteorological Society	Imp College
24 Feb	London School of Economics	LSE

1 Mar	London Waterways Commission	City Hall
2 Mar	Sustainable Development UK	RC Physicians
5 Mar	London Water Resources Group	City Hall
16 Mar	Association of London Borough Planning Officers	London Councils
16 Mar	Adaptation and Resilience to Climate Change Group	Cambridge
19 Mar	Cross Government Adaptation Briefing	Gov't Office for London
24 Mar	LB Southwark	LBS Tooley St
13 Apr	CCRA IHE	Nobel House
19 Apr	Retrofitting green infrastructure workshop – invited attendees only	City Hall
28 Apr	London Sustainable Development Commission	City Hall

2.1.5 Engaging the hard-to-reach

Supplementary activity was carried out to target the hard to reach groups included students and young people, BME communities and older people. Activity is summarised below.

- An article promoting the strategy placed in the March edition of Capital Child
- An email was sent to approx 300 student representatives from London Universities
- A leaflet was produced on the strategy and disseminated at a London Older Peoples Forum and Age Concern events
- An email promoting the consultation was sent to Young London Participation network.

2.1.6 London Climate Change Partnership Forum Meeting

The London Climate Change Partnership (LCCP) maintains a wider stakeholder network, called the LCCP Forum. Forum members were invited to attend a workshop specifically on the draft CCAS. Responses to specific areas are included in Section 3 of this report.

2.2 Integrated impact assessment

The GLA engaged independent consultants to undertake a sustainability appraisal of the policies and proposals contained in the public draft CCAS. These were assessed against a wide range of areas so as to meet the statutory requirement to assess their strategic impact on the environment. This included:

- the GLA's principal purposes of economic development and wealth creation, social development and environmental improvement
- the cross-cutting themes of health and health inequalities
- the Mayor's duties under legislation covering equalities, social inclusion, crime and disorder.

The CCAS and its sustainability appraisal were developed iteratively to ensure that the findings of the appraisal informed the development and content of the CCAS. There were two stages to the process; the "scoping stage" and the report stage. A scoping report was sent to stakeholders in 2007 and was published on the GLA website along with the London Assembly and Functional Bodies' consultation draft of the CCAS. The CCAS Sustainability

Appraisal Report, taking into account the matters identified for assessment in the Scoping Report, conforms with the requirements for an environmental report and consultation under the SEA Regulations. The CCAS SA Report, plus a non-technical summary was made available as part of the public and stakeholder consultation.

3. Findings from the consultation

3.1 Climate Change

According to our telephone poll, the overwhelming majority of Londoners believe that climate change is happening (97%), and three quarters of Londoners are to some extent concerned about it, compared to almost one in ten who are not concerned at all. This suggests that on the whole Londoners accept that climate change in one form or another is happening and that they are concerned about the consequences that might arise as a result. However, the fact that there are more people unconcerned about climate change than don't believe it is happening also suggests that some people do not understand the full implications of climate change and our need to adapt.

The main barrier people cite when adapting their home to manage the effects of climate change is cost, often a key consideration in people's decision making, with 84 per cent maintaining that this might stop them from adapting their homes to the impacts of flooding, heatwave or drought. Next on the list is a lack of information about what people can do, and time (with 52 per cent and 47 per cent respectively). A further 39 per cent were concerned with the impact adaptive measures might have on their lives, while just under a third (32 per cent) said that they don't consider themselves to be at risk.

Interestingly, while the Climate Change Adaptation website generated many ideas for how Londoners could adapt to climate change, a large number of comments were posted by people who were of the view that climate change does not exist, and that action is not necessary. User feedback indicates that people who engaged with the site tended to feel they were well informed about climate change already, and therefore were more likely to have strong opinions on this issue.
A number of ideas were submitted to the consultation that did not directly relate to climate change adaptation. Where possible these suggestions have been passed to other policy teams at the GLA as appropriate. A full report of responses to the Climate Change Adaptation website is available on request.

Consultation comment	GLA officer response	Change in final strategy
The strategy should comment on the potential impact of climate change food security	Food provision and diversity is discussed in Chapter 6, but food security is not mentioned *per se* as there is currently little agreement on how it may impact London. This will be kept under review for the next strategy	None
The strategy should comment on the potential impact of extreme weather outside the UK on the London (for example on migration).	The strategy comments on London's exposure to climate impacts elsewhere in the world, but there is currently little agreement on how climate change will	None

	affect migration to the UK. This will be kept under review for the revision of the strategy.	
The Mayor should consider developing either a centrally run communications campaign, or a clear set of objectives and tools to ensure a consistent communications message across boroughs.	The Mayor agrees that the GLA has role to playing in communicating measures to adapt to and mitigate further climate change, but believes that (following evidence from the government 'Act on CO2' campaign) that a public communications campaign is a costly approach with limited success. The Mayor will work with the LCCP and other partners outside of the strategy to consider communications options.	None
Some of the Actions are not 'SMART' (Specific, Measurable, Achievable , Realistic and Time-bound).	Care has gone into defining those Actions that can be SMART in the	Where possible, actions in 'The roadmap to resilience' have been SMARTened.
The strategy should promote the collation of better climate data, eg using local amateur weather enthusiasts.	This is part of the concept of the Londonwide weather station network (Action 5.2)	None
The strategy should consider a number of indicators as measures of our relative adaptation, for example: area of hard standing; number of green or cool roofs; energy used for cooling in London etc.	The GLA agrees that these are useful indicators, but many of them would rely on boroughs to collect and share the data, which is currently beyond the resources of most boroughs. This will be kept under review pending review of the strategy.	None
The extent and impact of subsidence and heave is underplayed in the strategy.	This is an area where there is little data and what does exist is of questionable consistent quality. This issue will be kept under review for the next version of the strategy.	None
The strategy should adopt an ecosystem services	The strategy is very vocal in its support for augmenting	None

approach to respond to climate change.	ecosystem services in the capital through the creation of new, and enhancement of existing green infrastructure.	
Concern that windstorms have been omitted from the strategy.	Windstorms are mentioned in Chapter 1, but given the uncertainty regarding their projected changes under climate change, the strategy commits to keeping this issue under review.	None
The GLA should produce an 'annual monitoring report' relating to climate change adaptation.	Whilst the GLA supports the concept of a regular report, the lack of agreed adaptation indicators the capacity of partners to report against them means that this will have to kept under review pending the government's National Climate Risk Assessment (expected early in 2012).	None

3.2 Flooding

Vision
London is resilient to all but the most extreme floods and has robust emergency plans to respond to, and recover from, flooding.

Policy 1 The Mayor will work with partners to reduce and manage current and future flood risk in London by:

- Improving the understanding of flood risk in London and how climate change will alter the risks, to improve our ability to manage flood risk.
- Supporting collaborative working to enable a cost-effective approach
- Reducing flood risk to the most critical assets and vulnerable communities, to target the greatest effort on London's most vulnerable assets.
- Raising public awareness of flooding and individual and community capacity to cope and recover from a flood, to improve London's resilience to flood events.

Consultation responses

87% of respondents to the telephone survey agreed it is important to manage flood risk in homes and communities and the same proportion support measures to identify critical assets and vulnerable communities at risk of flood.

Contributors to the website expressed concern over the problem of increasing flood risk in London, especially from the Thames. Of these, several suggested that the government should not build more housing on the flood plains and needs to concentrate on building more flood defence barriers: "We need flood defences along river banks we need protection for the flood plains at the estuary end of the Thames above all we need updated flood defence barriers across the Thames".

Ideas submitted to the CCAS website included the suggestions that those living or looking to live in flooded areas should have an insurance subsidy and that residents likely to be affected by flooding could check with the Environment Agency for flood warnings. In the telephone survey, only 6% of respondents said they currently use this service while 54% said they would do, suggesting that it would benefit from further marketing.

There was a discussion on the website about ecology and flood protection. In particular, one commentator felt that the River Roding should be dredged to prevent flooding, however another commentator expressed concern that dredging could destroy habitat.

Nine out of ten Londoners responding to the consultation on the subject of flood risk supported work to improve the drainage system in London, particularly in areas where there is high housing density. Other measures that received strong support were measures to 'green' London, such as extending parks, planting more trees and creating more green roofs.

Commentators suggested that planning controls could aid drainage by preventing paving over front gardens. The use of products such as 'grasscrete' were proposed as an alternative, as well as the use of the Sustainable Drainage Systems (SuDS) *"We need more SuDS put in now...they help capture rainwater instead of flooding the sewers".*

The response to the above comments is included in the response to organisational comments in the table below.

Consultation comment	**GLA officer response**	**Change in final strategy**
Call for improved flood defences, especially across the Thames	The tidal Thames has some of the highest standards of protection in the world, plus an ongoing strategy to maintain this inline with climate change (TE2100). The Environment Agency manages the system that determines where money is spent to manage flood risk, based upon a 'payment for outcomes' system.	None
Call for greater insurance subsidy for people living at higher flood risk	The UK insurance system already provides considerable cross subsidy for people living at risk.	None

	Housing Associations also offer a subsidised 'insurance with rent'. The key problem is the relatively low uptake of insurance, rather than the absolute cost.	
Call for government to stop development of housing on floodplains	The strategy already calls on boroughs to recognise the current and future impacts of flooding and to use the planning system as the first step to managing flood risk.	None
Call for tributaries to the Thames to be dredged to increase flood storage capacity	Some maintenance dredging does occur on the tributaries to the Thames, but this is limited to maintaining navigation, as more extensive dredging has negative impacts on biodiversity and releases buried pollutants.	None
Avoid an uniform approach to businesses as different sized businesses have different needs and capacities to respond	Businesses respond best to advice and support from other businesses. The GLA is therefore working through business-to-business groups and organisations.	A new action has been developed (Action 8.2) with the LCCP, committing the LCCP to work with businesses through the Business Improvement Districts to help support businesses in a business-friendly format.
Need to raise awareness of the importance of ICT failure to businesses	Action 3.8 and 9.2 already detail that the Mayor will work with London Resilience Partnership to identify and prioritise critical infrastructure at climate risk and understand the interdependencies between infrastructure systems.	None
There is a need for better sharing of information relating to flood risk and flood risk management	Actions 3.3 and 3.5 set out that the Mayor will work with partners through Drain London to facilitate greater information exchange.	None
Need for greater focus on the loss of permeability in gardens, particularly back gardens. Creation of a	This is a critical issue for London. The Mayor is working with partners to develop a project to trial	A new action (Action 3.7) has been developed to trial measures to restore permeability to urban areas.

scheme to 'reclaim' paved over areas	reinstating permeability into the urban realm.	
Greater detail needed on the impacts to and implications for people and business from flooding	The final strategy includes more text on the social impacts of flooding.	Additional text in Chapter 3 on social impacts of floods added.
Further detail on how the GLA will facilitate an integrated approach to surface water management	The Drain London Forum was created to enable a coherent approach to managing surface water flood risk.	Action 3.5 commits the Mayor to maintaining the Forum as a mechanism for support and integration.
Greater coherency with the Mayor's water strategy	There are a number of areas of where the CCAS and water strategy necessarily overlap.	Improve cross references between the CCAS and the Mayor's Water Strategy
The general assertion that wastewater networks are poorly maintained in overstated	Following a cross-check with Ofwat regarding Thames Water's levels of service, this statement has been amended to emphasise the need to maintain a high standard of performance to manage flood risk.	Text amended
Support for improved flood risk mapping and the collation and sharing of data.	The Drain London Forum was created by the Mayor to enable better information sharing and collaborative working.	No amendment required as covered by actions 3.1 – 3.6
The strategy should do more to raise awareness of flood risk locally.	Raising local awareness of flood risk is the responsibility of the Environment Agency and the boroughs. Under Action 3.10 the Mayor will work with the Environment Agency to increase the number of Londoners signing up to Floodline Warning Direct. but through the Drain London programme, the Mayor will support	None

3.3 Drought

Vision To achieve a sustainable balance of supply and demand for water in London by 2030 and make London more robust to drought.

Policy 2 the Mayor will work with partners to improve the sustainability of London's water supply and demand balance and make London more robust to drought by:

- promoting an integrated package of measures to enable and sustain a long-term improvement in water efficiency
- lobbying government to integrate water efficiency into housing retrofitting programmes
- promoting capturing and using rainwater for non-consumptive purposes
- improving our response to drought.

Consultation responses

Overall seven in ten people see drought as an issue of concern both generally and for London specifically. The key themes emerging from the public for coping with drought include better harnessing of, and management and storage of water; reuse of water and raising awareness of climate change adaptation through education.

Water efficiency is already important to Londoners - nine out of ten Londoners say they are already conscious of the need to use water efficiently, and the same proportion already have, or would install water saving appliances such as water efficient dishwashers and dual flush loos. Three quarters would be interested in utilising an information service that will help them save water.

90% of those surveyed in our poll think drought risk could be managed by making homes and communities more water efficient. A number of ideas were submitted to the Climate Change website to that effect. These included installing a water meter, which would save money as well as reduce carbon emissions, and installing a cistern to "catch runoff rainwater for later use". Others suggested that individuals could take small actions to save water such as turning off water when brushing teeth, washing up in a bowl and avoiding over-watering the garden.

Waterwise indicated that there should be "tight mandatory standards" set for public sector procurement for items such as taps, toilets, showers, urinals, dishwashers and washing machines. The London Sustainability Exchange would like "the strategy to push harder on water efficiency measures, as there are dual benefits for mitigation and adaptation" and more importantly an encouragement for Londoners to change behaviour in terms of water efficiency as well as working with utility companies to support Londoners' actions. A contributor to the website felt there needed to be more campaigns throughout the year to raise awareness of drought, and change behaviour of the public to use less water in general.

Two ideas were received suggesting we build deeper reservoirs to store water for times of drought, and seek to make more use of seawater. Those who commented on it mostly agreed with the concept of desalination but pointed out that it is a fairly difficult and expensive process to do on a large scale and recommended instead that the focus remains on capturing fresh rain water where possible. Our research shows that individual water capture is popular - 79% already have or would invest in a water butt to capture rainwater for outdoor use. One person on the website stated they are "going to start harvesting rain

water so that I and those around me who are more vulnerable have access to a clean water source when drought strikes".

Consultation comment	GLA officer response	Change in final strategy
Need to build deeper and more reservoirs	This proposal was checked with Thames Water who felt that it would compromise our current water security as the reservoir would have to be drained and refilled, reducing the availability of water during the works period. For this reason this activity is not included in Thames Water's Water Resource Management Plan.	None
Need for more desalination	Desalination is a costly, energy-intensive approach to balancing supply and demand. Its use should be limited to boosting supplies during severe droughts rather than regular source of water.	None
Need for more flood storage – especially under roads.	Flood storage is a significant option for managing flood risk and is discussed and promoted in the strategy.	A new action (Action 3.7) has been developed to trial measures to restore permeability and flood storage to urban areas
Call for greater support for and promotion of rainwater collection and use	Rainwater 'harvesting' could help reduce the use of treated mains water for water uses that do not require highly treated mains water (eg flushing toilets) and may have a small contribution to managing flood risk.	New Action (Action 4.3) to support and promote rainwater harvesting in schools
Support for reducing leakage and increasing metering with caution to review impact on vulnerable customers	The 'six point plan' in Action 4.1 promotes balancing supply and demand through improving water efficiency, including increasing metering and reducing leakage, whilst protecting vulnerable households from water affordability issues.	Revised Action (4.1) These issues are examined in further detail in the Mayor's Water Strategy.
Recommendation that the	Through Actions 4.1 and 4.2	None

strategy should set out a timetable for reducing water consumption.	the Mayor has set out his position on this issue and will use the CCAS and the Water Strategy to lobby government and water companies.	
Comment that the statement regarding the amount of water withdrawn from the environment is unsustainable is incorrect	The statement has been maintained pending the outcome of the Environment Agency's review on sustainable abstraction.	None
Request for further detail on how water companies should define, achieve and maintain water neutrality	The strategy promotes balancing supply and demand through a 'six point plan' (Action 4.1) which includes improving the water efficiency of existing development to provide the water for new, super-water efficient development to enable a growth in population without a growth in supply.	None
Greater education about drought management (more water efficiency campaigns throughout the year)	Action 4.1 encourages Londoners to consider water efficiency as a year-round issue, rather than solely as a drought management measure.	None
A more proactive role is needed to improve water efficiency and infrastructural renewal in London	Action 4.1 sets out how the Mayor will work with water companies and lobby government to drive improved water efficiency.	None
Need to ensure that a 'London-specific drought plan' aligns with existing drought plans.	Agreed. This would be the point of the London specific plan – to ensure coherency between water company drought plans and highlight the role of non-water company stakeholders in facilitating the communication and implementation of drought management measures.	None
Creation of mandatory water efficiency standards in public buildings through	These are already set out in the Mayor's Green Procurement Code. The	None

procurement processes	Mayor is unable to enforce the Code beyond the four functional bodies. The RE:FIT project also looks for opportunities to improve hot water efficiency in the retrofitting of public buildings.	
There are a number of historic water fountains in London that are no longer used and in danger of being lost. The GLA should develop a London-wide programme to bring them back into use.	Water fountains are covered in the Mayor's Water Strategy	None
The strategy should promote a change in the way water companies can charge for water and how consumers pay for water.	Action 4.1 sets out that the way consumers pay for water needs to change to reward water efficiency but protect vulnerable users.	None

3.4 Heat-waves

Vision To make London a more comfortable and healthy city to live, work and play in, and to ensure that a robust emergency plan exists for heat waves.

Policy 3 The Mayor will seek to reduce and mange the impact of hot weather on Londoners by working with partners to:

- mapping overheating risk to prioritise actions to target the worst affect areas and most vulnerable people
- managing rising temperatures by increasing the amount of green space and vegetation in the city
- reducing the risk of overheating and the need for mechanical cooling in new and existing development and infrastructure
- ensuring London has a robust heat wave plan.

Consultation responses

68% of Londoners are concerned about the threat of heat-waves to themselves and 72% consider them a concern for London as a whole.

One person posted an idea that people should make more use of the Meteorological Office's website to keep an eye out for severe weather warnings to help plan their day

better in times of heat-waves. Information from scientists and environmental groups are seen as most trusted sources of information.

Several ideas were generated on greening the city to allow people to cope better with heat-waves. One such idea was to undertake a critical study to identify which London streets are dispensable as traffic thoroughfares. Those identified could be grassed over or planted with trees and shrubs. Access to emergency services and other vehicles could be maintained using green friendly "mesh" paving which allows grass to grow through it. There is strong public support for schemes which increase the greenness of London: 88% want to see more street trees planted, 82% more green roofs and 94% support extending and improving parks. A 'mini wood' or reserve in the city to supply oxygen, as found in cities like in Kuala Lumpur, was also suggested. However, responses suggested more street trees should be planted instead as we already have green spaces such as Royal Parks. A suggestion to plant trees along London Bridge was met with a response that the roots would weaken the structure of the bridge making the idea unsuitable for implementation.

When considering efforts to reduce the risk of overheating and the need for mechanical cooling in new and existing development and infrastructure, our telephone survey found that around 8 in ten people support publishing design guidance for developers. Londoners are either already, or are keen to take practical measures to protect their homes from overheating. 89% would close their curtains or blinds on sunny days when out of the house to keep the rooms cool, and 96% would open windows on hot days on both sides of the home to get air flowing through for cooling.

One idea posted on the website suggested that we could help to cool the surrounding environment by utilising the power of the sun, "if most roofs had solar panels then not only could London generate a lot of its own electricity and sell back to national grid on particularly sunny days, but soaking up the sun's rays would decrease the urban warming effect…we need to start thinking more creatively".

Consultation comment	**GLA officer response**	**Change in final strategy**
Make more use of the Met Office's website to provide advance warning of hot weather	The Met Office and the Health Protection Agency already collaborate to provide a summertime 'heat health-watch warning system' combined with awareness raising (set out in the Heatwave Plan).	None
Increase green cover in the city to reduce the urban heat island effect.	The strategy strongly promotes urban greening as an approach to managing overheating and flood risk, particularly in the Central Activity Zone.	None
Repave streets not used as transport thoroughfares with grass and vegetation	Whilst is may not be possible to entirely remove traffic from streets, the opportunity	None

	to re-green streets exists and will be trialled through Action 3.7.	
Increase the number of trees (particularly street trees) to provide shading and cooling	The strategy sets a target for increasing tree cover by 5 per cent by 2025 (effectively 2 million more trees).	None
Concern that urban greening measures may be inappropriate to the prevailing character of some conservation areas	Accepted, but urban greening measures are likely to more sensitive to historical character than other forms of cooling, eg. air conditioning units.	None
Strategy needs to recommend air-conditioning on public transport	Air conditioning is increasing across most public transport modes as the fleet is renewed and budget is available (mainline rail, buses and sub-surface Underground trains). On deep-level Underground trains this remains a challenge. TfL have a dedicated team looking at this issue.	None
All new public buildings should be required to have a green roof	London Plan policy 5.9 states that all new major development should have a green roof. This is highlighted in the strategy.	None
Further guidance on retrofitting buildings to manage overheating is required	The strategy provides a link to the CREW project which has developed a toolkit to assess the cost-benefits of overheating management measures.	Reference to CREW overheating toolkit provided.
Recommendation that the London Heat Map should promote opportunities for district cooling	Decentralised energy generation provides an opportunity for 'combined cooling heat and power'. This is promoted in the strategy in Action 5.9	Action on decentralised cooling opportunities (Action 5.9) moved to overheating chapter.
Strategy does not quantify the impact of urban greening	New modelling projections from the LUCID project have been included highlighting that widespread urban greening will only slightly reduce citywide	New information provided

	temperatures, but have a significant impact on local temperatures	
The strategy should set out what temperatures should be expected on public transport in the future.	It is impossible to project what internal temperatures will be experienced on different transport modes in the future. The strategy sets out what external temperatures are likely to be experienced in the future and how passengers experience currently overheating on existing transport modes	None
The strategy should comment on the need to change travel plans in the future to encourage people to travel during cooler times of the day, or reducing peoples' need to travel	It is anticipated that Londoners will culturally adapt to warmer weather and that people's travel plans will naturally change in response to hot weather periods.	None
Strategy should contain detailed plans about what steps TfL are taking to manage overheating on public transport in the short, medium and long-term	The strategy sets out the actions TfL is undertaking on its modes, but accepts that these are limited by budget and where TfL does not have direct control (eg franchises).	None
Concern flagged regarding the need to water new streets trees and their potential to damage buried infrastructure	The issue of the location of street trees, the species planted and how they are planted are covered in the 'Right place, right tree' guidance referenced in the strategy.	None
Support for a London-wide network of weather stations as the station at Heathrow cannot represent inner London.	The strategy promotes the need for a London-wide network of weather stations to understand how temperatures change across London and to monitor the impact of the urban greening interventions.	None
Action 5.6 (100,000m^2 of new green roofs installed by 2011-12) is not bold enough	This was felt to still be a challenging target given the downturn in the economy and resulting impact on	None

	'added benefits' such as green roofs.	
Recommendation that a more specific definition of green space 'enhancement' is used to ensure adaptation benefits	This is a useful comment but as the adaptation benefits are location specific, it was felt that providing a detailed definition was less helpful than working with the All London Green Grid design champions and borough teams to identify adaptation opportunities	None
Strategy should give more guidance on drought resilient planting	The strategy references the 'Right Trees for London's Changing Climate database' which provides such information	None

3.5 Health

As health is a cross-cutting issue, actions in chapters 3-5 of the CCAS generally apply to this chapter, but there are three specific actions:

Action 6.1. The Mayor will work with the London Climate Change Partnership, General Practitioners and other commissioners, London boroughs, London Councils and Public Health England to ensure that climate risks are addressed in the commissioning and provision of health and social care services; and the refurbishment programmes of health and social care estates.

Action 6.2. The Mayor will work with the shadow Health Improvement Board to facilitate the provision of climate risk information to borough Health and Well Being Boards.

Action 6.3 The London Climate Change Partnership will work with local healthcare providers and communities to provide scalable examples of practical adaptation measures. This will include supporting a bid to the Technology Strategy Board for funding to retrofit a health building to improve its resilience to the impacts of extreme weather and climate change.

Consultation responses

Consultation comment	GLA officer response	Change in final strategy
The strategy should in particular address the issues of health inequalities and specifically address those that are most at risk of being disproportionately affected by climate change.	The strategy highlights that climate change is likely to disproportionately affect those already experiencing financial, environmental and social inequalities. Actions 3.8, 4.1, 5.1 and 6.1 include elements to identify and assist the most vulnerable communities and individuals in London.	None
The strategy should comment on the likely increase in pests putting increasing pressure on the health service	The strategy comments that adequate health surveillance needs to be maintained in order to detect the introduction of new diseases and pests.	None

3.6 London's Environment

As this is a cross- cutting issue, actions proposed in Chapters 3-5 of the CCAS apply to this chapter, particularly Actions 5.3 to 5.6 and the following action.

Action 30: The Mayor will work with the Environment Agency and other partners to restore 15kms of London's rivers by 2015 through the London Rivers Action Plan.

Consultation responses

Consultation comment	GLA officer response	Change in final strategy
The importance of the 1400 non-statutory wildlife sites needs to be recognised.	The strategy recognises the importance of the non-statutory sites and highlights the need for connectivity between sites to improve links for people and wildlife, citing the All London Green Grid as the most appropriate mechanism to deliver this at the strategic scale.	None
The strategy should support the work of the London Invasive Species Initiative.	The Mayor will refer this to the GLA biodiversity team for consideration outside of the strategy.	None
The cost, benefit and risk of opening up some of London's 'lost rivers' should be investigated.	The Mayor will work with the Thames Water to review this issue, though too little is currently known to purposefully raise in this version of the strategy.	None
The strategy does not spatially represent the locations across London which would be suitable for enhancing green spaces for adaptation benefits.	Figure 7.1 overlays the urban heat island 'map' over the surface water flood risk 'map' to highlight opportunities where urban greening measures could be used to retain and absorb floodwater or to cool the city.	New figure provided.

3.7 London's Economy

The actions identified in this strategy will help to improve the resilience of London's economy to climate change and highlight business opportunities.

Action 8.1. The Mayor will work with the insurance sector in calling for the government to amend building regulations to require buildings being rebuilt or renovated to be climate resilient.

Action 8.2. The LCCP will work with London's business improvement districts (BIDs) to identify climate risks to the districts and develop appropriate communication and risk

management measures.

Consultation responses

Consultation comment	GLA officer response	Change in final strategy
Concern that the costs to businesses of adaptation actions have not been considered.	The purpose of working with the BIDs is to identify the costs to business of practical adaptation actions and to determine how they could be funded, either by the businesses themselves or through external funding	None

3.8 Infrastructure

The actions identified in this strategy will help to improve the resilience of London's infrastructure to climate change.

Action 9.1: TfL should regularly review and revise the risk assessments of their assets, operations and develop prioritised action plans for key climate risks.

Action 9.2. The Mayor will work with the London Resilience Partnership to assess the resilience of London's critical infrastructure to climate risks, including interdependencies between infrastructure.

Consultation responses

Consultation comment	GLA officer response	Change in final strategy
There is no mention of the water and sewerage infrastructure in this section	This is covered in Chapter 3 and cross referenced in Chapter 9.	None
It is essential that green roofs should not impose an undue stress on water supply.	A properly installed green roof should not need watering, even during a drought.	None
The strategy should be clear that there is a cost to climate change adaptation [measures] and that securing funding for new initiatives in the current economic climate will be challenging.	The strategy recognises this and by presenting the need for climate risks to be considered in investment decisions, hopes to avoid mal-adaptation and costly retrofits.	None
The strategy should refer to	The strategy highlights the	None

the need to integrate and systematise adaptation measures so that adaptation of one system or location is not detrimental to an adjacent or linked system.	need for interdependencies to be identified. The Drain London project provides an example where system managers are brought together to understand interoperability issues and seek coherent solutions	

Appendix 1: Statutory Consultees

The London Assembly
Functional Bodies
Each London Borough
Common Council (Corporation of London)
East of England Development Agency
English Heritage
Environment Agency Thames Region
London First
London Resilience
Natural England
NHS London
South East England Development Agency
Gas and Electricity Markets Authority (Ofgem)
UK Climate Impacts Programme
Essex & Suffolk Water Company
Sutton & East Surrey Water Company
Thames Water
Veolia Three Valleys (formerly Three Valleys Water)

Appendix 2: Consultation Questions

The adaptation to climate change consultation website posed four sets of questions:

1. Have we correctly identified the climate risks to London?

2. Do you agree that the proposed actions are the right ones? What alternatives and additions do you suggest and how can you or your organisation help implement them?

3. Does the draft strategy provide a framework for identifying an prioritising key climate risks to London and prioritising the key actions? If not, how can it be improved?

4. How can we measure how well London is adapting to climate change? What do you think are the key indicators and who should measure them?

Appendix 3: GLA Climate Change Telephone Survey 2010

Contents

A. Headlines

Men, youngest and oldest groups, lower social classes and those living in council accommodation are the least concerned about climate change.

- 60% of those aged 18-24 are concerned about climate change, 62% of those aged over 65 say the same, whilst 81% of those aged 25-64 say the same
- 71% of men say they are concerned about climate change, compared with 79% of women
- 71% of DE groups say they are concerned compared with 79% of AB groups
- 68% of council renters say they are concerned, compared with 78% of those people who own their home with a mortgage.

Despite 'climategate' people remain concerned about climate change:

- 54% are as concerned as a year ago
- 36% are more concerned
- 9% are less concerned

An overwhelming number of Londoners believe that climate change is happening

- 97% of Londoners believe that climate change is happening

- 13% think that it's happening only as a result of natural occurrences, 3% don't think it's happening at all.

Corresponding to levels of concern about climate change, those from the lower social classes and living in council rented accommodation are most likely to believe climate change is not happening.

- 5% of C2DE groups say this, 1% of ABC1
- 6% of council renters believe this, 1% of those who own their home with a mortgage.

The majority of those people thinking that climate change is happening think we should be mitigating, adapting or both.

- 42% think we should adapt and mitigate
- 37% think we should just mitigate
- 15% think we should just adapt
- Only 3% think we don't need to do anything.

Issues that are likely to be related to climate change, but with a tangible cost to people are more likely to be a concern to Londoners.

- Around 6 in 10 people consider a rise in energy and water bills to be a great concern (64% and 56% respectively)
- Around a quarter of people consider flooding, drought and heat-wave to be a great concern (24%, 28% and 23% respectively.

Council renters consistently show differences to their counterparts – some seemingly contradictory.

- 68% of council renters say they are concerned about climate change compared with 76% of other tenures
- An average of 38% of council renters are very concerned about flooding, drought and heat-wave, the figure is 22% for other tenures.
- An average of 73% of council renters are very concerned about rising energy and water bills, the figure is 58% for other tenures
- An average of 61% of council renters consider managing flood, drought and heat-wave risk as very important to adapting to climate change, an average of 42% of other tenures think the same
- Council renters are less likely than other tenures to have undertaken measures such as installing water saving devices or water butts than other tenures.

Flooding is the primary climate change impact concern for London

- 38% of Londoners consider flooding a great concern, compared to 26% who consider drought and heat-wave as a great concern.

Cost is the major factor affecting whether people take measures to adapt their home to the impacts of climate change, however there are a significant number that do not consider there to be a need to adapt:

- 84% said this might stop them from adapting their homes, 52% mentioned lack of information about what they can do, 47% mentioned time and 39% mentioned impact on lifestyle.
- 32% said that they didn't consider themselves to be at risk, 9% said that they don't believe in climate change.

Older people are more likely to not take action because they don't think that they are at risk and less likely to believe climate change is happening:

- 16% of those aged 65+ say that they don't take action because they don't believe in climate change, compared with 7% of those aged 25 to 54
- 43% of those aged 65+ don't take action because they don't consider themselves at risk to the impacts of climate change, compared with 31% of other ages.

Those from the lower social classes are more likely to see action as a potential threat to their quality of life:

- 47% of DE groups cited this, whereas 36% of ABC1s said the same.

People are already taking basic steps to protect against the effects of a changing climate, but not the more difficult steps that also have a cost attached:

- 90% say that they are already conscious of their water use and 86% say that they already open windows on both sides of their homes to cool it with cross ventilation.
- A small % have installed water saving appliances (44%) or have a water butt or permeable patio or parking areas (29%)
- Only 6% have signed up to the Environment Agency's Free Floodline Warning Direct service.

Those from higher social classes are more likely to be proactive in adapting their homes to climate change effects:

- 99% of ABC1C2s say that they are already water conscious, compared with 93% of DE groups
- 45% of ABC1C2s say that they would be prepared to install water saving devices in their homes compared with 34% of DE groups
- 56% of ABC1 say they would be prepared to use a water butt or permeable drive materials compared with 40% of DEs.

Home ownership plays a strong role in people's likelihood to take action - those living in rented accommodation are less likely to have undertaken measures to adapt to climate change than those who own their homes.

- 92% of homeowners are water conscious, 86% of renters are
- 52% of homeowners have installed water saving appliances, 32% of renters have
- 39% of homeowners have water butts or permeable materials for their drive, 16% of renters have

Strongest public support is for measures to deal with climate change that have other, more tangible benefits for people such as creating a greener London:

- 77% strongly support extending and improving parks, 70% strongly support planting more trees and 58% strongly support creating more green roofs

- 66% strongly support improving water infrastructure
- 51% strongly support identifying critical assets and retrofitting homes, 52% strongly support publishing design guidance for developers

Local councils are seen as the most important players in preparing London for increased risk of flood, drought and heat-wave, but individuals and central government are seen as important too:

- 66% said local councils were very important, 58% said individuals, 57% said central government.
- 39% said community and voluntary sector groups**,** 46% environment groups and 47% private sector business.

People prefer to get their information on climate change from online sources, but other, more traditional sources such as direct contact with local councils still have an important role to play for the older generations:

- 46% of those aged 18-64 mentioned internet sources, 14% of those aged over 65 said the same
- 26% of those aged 18-64 said blogs or social networking sites, 7% of those aged over 65 said the same
- 24% of those aged over 55 said direct contact with the council, 8% of those aged 54 and under said the same

Despite the negative impact 'climategate' was thought to have had independent scientists and academic institutions remain the most trusted source of climate change information:

- 58% of people said they most trust independent scientists and academic institutions, 46% said environmental groups and 37% said central government
- Only 14% said the Mayor and GLA, while 22% said national media.

B. Methodology

This is a summary of the results from a telephone survey, with fieldwork undertaken in May 2010. The survey work was carried out by ICM research on behalf of the Greater London Authority. Final results are based on 1000 interviews conducted over the telephone with a sample of residents in the Greater London area. Results are weighted by gender, age, tenure, working status and area of London lived in to ensure data is representative. All demographic differences referred to are statistically significant at a 95% confidence level.

C. Results briefing

C.1 How concerned are Londoners about climate change?

Three quarters (75%) of Londoners say they are, to some extent, concerned about climate change. About a third (32%) say they are very concerned, whilst almost one in ten say that they are not concerned at all (8%). This suggests that on the whole Londoners accept that climate change in one guise or another is happening and that they are concerned about the consequences that might arise as a result.

Q2 To what extent, if at all, are you concerned about climate change? Would you say you are…?

	%
Very concerned	32
Quite concerned	43
Neither concerned nor unconcerned	6
Not very concerned	11
Not concerned at all	8
Don't know	1

Women are more concerned about climate change (79%) than their male counterparts (71%).

Age seems to have an interesting relationship with concern about climate change, with those aged between 18 and 24 and those aged over 65 significantly less likely to be concerned about climate change than all other age groups, around 6 in 10 compared with about 8 in 10 for the rest, and correspondingly significantly more likely to be not concerned.

Social class shows a weak relationship, with those from AB groups more concerned than those from DE groups (around 8 in 10 compared with 7 in 10), and vice versa, those from DE groups more likely not to be concerned that AB groups (26% compared with 14%).

People living in different tenures also show differences in concern about climate change, with those living in Council rented accommodation least likely to be concerned (but still a high 68% concerned), and although this is likely to be more a result of social class factors it does suggest that any measures aimed at council housed people will need to be more aggressively marketed than other measures.

C.2 Is climate change a changing concern?

The majority of Londoners say that their concern regarding climate change hasn't really changed over the past year (54%), however a significant number say that they are more concerned, (36%) whilst only 9% consider themselves less concerned. This is an interesting finding given the 'Climate-gate' scandal and the effect you might have expected that to have on public acceptance of climate change being real.

Q3 Would you say that you are more, less, or as concerned about the threat of climate change and global warming compared to a year ago? Would you say you are…?

	%
Significantly more concerned	13
Slightly more concerned	23
About the same as a year ago	54
Slightly less concerned	6
Significantly less concerned	3
Don't know	1

Those aged over 65 are significantly more likely than other age groups to have become less concerned about climate change over the past 12 months, but this is predominantly 'slightly less concerned' – 12% compared with 5% for the rest of the population. This may be a result of people feeling climate change is more a future issue than being right here, right now thus more likely to affect young people.

Despite being the people living in the tenure type least concerned about climate change those living in council rented accommodation are most likely to have become more concerned about climate change over the past year, and significantly more likely than all other tenure types to have become significantly more concerned (23% compared with 12% for the rest of their counterparts).

Ethnicity shows some strong differences here too, with Black and Asian groups significantly more likely to have become significantly more concerned and net concerned (significantly more plus slightly more concerned) than White groups (49 and 59% compared with 31%).

C.3 Do Londoners believe in climate change, and do they think it's man-made?

As questions 2 & 3 suggest an overwhelming number of Londoners believe that climate change is happening – only 3% don't believe it is happening. The majority of those that believe climate change is happening consider it to be both as a result of natural and man-made causes (two thirds said this – 67%). 13% consider it to be happening only because of natural situations, not a consequence of mans actions, and 17% consider it to be only as a direct result of man-made causes.

This suggests that 97% of the population should consider adaptation to climate change important (as that many think climate change is happening), and 84% should consider mitigation important (as that many think man is having an impact on the climate).

However, the fact that there are more people not concerned at all about climate change than don't believe it is happening also suggests that some people are perhaps not getting the message about the implications climate change will/is having.

Of those that don't think climate change is happening (only 3% of the whole sample), when answering Q2, 18% of that group still say they are concerned about climate change, which suggests a level of confusion amongst some of the public. 4 in 10 of those that think it is happening naturally are concerned about it, whereas more than 8 in 10 of those that think either climate change is wholly man-made or at least partially man-made are concerned about its impact.

Q4 I would like to read out a number of statements about climate change. Can you tell me which one best describes how you feel about it? READ OUT.

	%
I don't believe climate change is happening	3
I believe that climate change is happening, but naturally; not as a consequence of man's actions	13

I believe that climate change is happening both as a result of natural and man-made causes	67
I believe that climate change is happening only as a result of man-made causes	17

Age

Those aged 18-24, over 65, and 55-64 are more likely to believe that climate change is happening naturally; not as a consequence of man's actions than other groups 17, 26 and 18% compared with 8% for the remaining age groups. This seems to align, to some extent with the higher levels of concern about climate change we saw earlier in younger and older groups' answers to Q2 and suggests that people are more likely to associate negative implications with man-made climate change than when it is believed to be a natural occurrence.

The middle age groups are more likely to believe climate change is happening as a result of natural and man-made causes.

Social class

DE groups are significantly more likely to believe that climate change is not happening than both AB and C1 groups (5% compared with 1% respectively). C2 and DE groups are also at least twice as likely to think that climate change is happening but only as a result of natural circumstances (with no human contribution) than AB and C1 groups (20% each compared with 10 and 9%). AB and C1 groups are both more likely to believe that climate change is more a result of both natural and man-made causes than C2 and DE groups (73 and 71% compared with 64 and 55%), but no more likely to agree that it is just happening as a result of man's actions.

Ethnicity

The only difference of any interest here is that Black Londoners are more likely to believe that climate change is not happening than White groups; 7% compared with 2% said this.

C.4 What type of action do Londoners think we should be taking?

Of those that believe climate change is happening, in general they think that some form of action should be taken, only 3% think that no action should be taken. Most people think that we should try to both adapt to changes and work to prevent further change (42%), 37% think that we should only work to prevent climate change in the future, which suggests that some level of campaigning is needed in order to get their buy-in to measures to adapt to climate change, and a further 15% think that we should just accept that climate change is happening and adapt to the threats (these are likely to be the people who consider climate change a purely natural occurrence).

Q5 You said you believe that [answer Q3], can you tell us what action best describes how you think we should tackle this? Do you think we should…READ OUT., CODE ONE

	%
Take no action	3

Act to do all we can to prevent climate change by saving energy and reducing greenhouse gas emissions	37
Accept the change and adapt to it by conserving water and making London safer from the threat of flood	15
Both adapt to expected changes and work to prevent climate change in the future	42

Again there are some interesting differences across the age groups with those aged 18-54 more likely to favour both adaptation and mitigation than those aged over 55 (47% compared with 28%), whereas those aged over 55 are more likely to favour a purely adaptive approach, this is likely to be because of their greater likelihood to believe climate change is occurring as a purely natural phenomena with no human input, therefore we can't actually mitigate against it.

ABC1 groups are also more likely than C2DE groups to think that we should both adapt and mitigate.

As you would expect when crossing this question with the question about people's beliefs about the causes of climate change (Q4) you see a strong correlation. – Those who believe climate change to be purely or partially man-made are more likely to favour mitigation and adaptation than those who think climate change is only a result of natural causes. Those who think climate change is only natural are more likely to favour only adaptation than those who believe man has an impact on the climate.

C.5 What do people consider the climate change risks to themselves?

Issues that affect people on a tangible, every-day and monetary level are seen to be of greater concern than the effects of climate change that might seem like a less direct and immediate issue.

More than 90% of Londoners say that rising energy and water bills are a concern to them; 64% say that rising energy bills are a great concern to them and 56% say the same of rising water bills. Less than 10% think that they are no concern at all. To put this in context around 70% of Londoners think that flooding, drought, and heat-wave are a concern; a quarter say that they are a great concern to them, whilst a quarter or more think that they are no concern. This suggests that if people are to see the risk of these last three issues they need to be tied to costs so that people can understand the impact they might actually have asides from the more physical problems.

Q6 How much of a concern to you are each of the following…

% / Issue	A great concern	A slight concern	No concern at all	Don't know
Flooding	24	47	28	*
Drought	28	46	25	1
Heat-wave	23	45	32	*
Rising energy bills	64	30	6	*

Rising water bills	56	35	9	*

The table below shows where significant differences exist in the numbers of people saying they are concerned about each issue listed. Those figures highlighted in red are significantly different from those in blue, showing that those living in council accommodation are consistently more likely to cite the issues as a 'great concern' than people living in all other tenure types. This is reflected to some extent by social class differences, but not for flooding and drought, and though it is beyond the scope of this work to understand why, it does suggest that there is a driver related to tenure driving up concern.

	Tenure				Social Class			
% Issue	Council	Own	Mort-gage	Private	DE	AB	C1	C2
Flooding	37	19	23	21	30	19	25	26
Drought	41	25	25	25	32	25	28	29
Heat-wave	35	20	18	25	34	18	20	23
Energy bills	75	60	62	64	73	59	55	81
Water bills	70	51	53	54	64	49	49	73

Those from Asian and Black groups are also consistently significantly more likely than White Londoners to be concerned about the issues listed.

C.6 What do people consider the climate change risks for the whole of London?

In terms of risk to London the only significant change from perceived individual risk is flooding, which makes sense as it would be geographically constrained and so less likely to be perceived as an individual concern, the level of those considering flooding a great concern now rises to almost 4 in 10 (38%), up from just under a quarter (24%), with 85% now citing it as either a great or slight concern, and only 14% saying it is no concern (half as many as before).

Drought and heat-wave remain a concern for about 7 in 10 Londoners at this level.

Q7 …and how about as a concern for London?

% Issue	A great concern	A slight concern	No concern at all	Don't know
Flooding	38	47	14	1
Drought	26	48	25	1
Heat-wave	26	46	28	1

Although not apparent at an individual level, at a London level there are consistent differences across age groups with the younger groups, particularly those aged 18-24 less likely to consider any of the issues listed as a concern than those aged over 35 for flooding and drought (although not heat-wave). Similarly the younger group is more likely to consider both flooding and drought as no concern at all.

Tenure again plays a role with those living in council accommodation more likely to consider the issues a concern than all other tenure types, social class reflects this difference, with DE groups more concerned than ABC1 groups for both drought and heat-wave, but not for flooding.

The higher level of concern shown at an individual level by Black and Asian Londoners compared to White groups is again apparent at the London level.

C.7 What climate change related services do people want?

The favoured services people say that they would be interested in are both those that could help save people money on utility bills (74% interested) and could help you save water (76%) interested. Again we see individual's interest is greater where they can see direct monetary gains (or at least lower costs to themselves). Services that might actually be more important but that seem less tangible Londoners are less interested in – 51% interested in a service that helps manage neighbourhood flood risk, and 52% interested in a service that helps keep you cool in the summer.

Q8 How interested would you be in a service that does the following?

	Very interested	Somewhat interested	Not very interested	Not interested at all	Don't know
Helps you save money on your utility bills	37	37	12	14	1
Manages flood risk in your neighbourhood	22	29	24	25	1
Helps you keep your property cool in summer	22	30	20	27	*
Helps you save water	39	37	10	14	*

In terms of the measures that might seem as though they directly help you save money (saving money of your utility bills and saving water) the 25-34 year old group is particularly interested.

Council renters are more interested across the range of services suggested than all other tenure types, which mirrors the higher level of concern by this group across the range of issues in Q7. The next question that needs to be asked is why this is; unfortunately, the answer to this question is beyond the scope of this survey.

C.8 What do Londoners see as the most important things to do in order to adapt to climate change?

Despite only around half of Londoners being interested in services that can help manage flood risk or keep you cool in summer, 87% of Londoners think that managing flood risk is important, and 82% think reducing heat-wave risk is important. This suggests that there might be a mismatch between people's expectations of what is needed and their willingness to pay for it or their perception that climate change is an immediate concern.

Three quarters of Londoners were interested in a service that could help them save water, and this is reflected in the responses to this question with 90% of Londoners considering managing drought risk important in terms of adapting to the effects of climate change.

Q9 How important do you think each of the following are in terms of adapting to the effects of climate change for London? READ OUT. CODE ONE

% / Measure	Very important	Quite important	Neither	Quite unimportant	Very unimportant	
Managing flood risk in homes and communities	43	44	7	4	1	1
Managing drought risk by making homes and communities more water efficient	50	40	5	4	1	*
Reducing heat-wave risks with green space and building design	42	40	6	6	5	1

Women are more likely in general to think that all of the measures outlined are important compared to their male counterparts, and this reflects the higher level of concern about climate change that they exhibited in Q2.

Age shows a mixed picture, with the only clear difference shown when asking about managing flood risks in homes and communities. Here, older groups (those aged 55+) more likely to think this is important than younger groups (18-54) – 95% compared with 84%. Perhaps this is related to the number of homeowners being higher in older groups and flood being the only direct threat to that important asset.

Council renters are consistently more likely to think that the measures outlined are very important than all other tenure types, as shown in the table below:

% / Measure	Own outright	Own with mortgage	Private renter	Council renter
Managing flood risk	41	38	42	57
Managing drought risk	41	49	50	65
Reducing heat-wave risk	37	39	39	60

The pattern of social class differences reflects to some degree the tenure differences, particularly with lower social classes (C2DEs) more likely to think managing flood risk and reducing heat-wave risk is important than the higher social class groups (ABC1s). Interestingly the differences are not reflected when talking about managing drought risk.

Black groups are consistently more likely than White groups to think the measures are both overall important, and very important. There is a relationship between tenure, social class

and ethnicity, but it is unclear which demographic distinguisher is leading the differences is response to this question.

C.9 What are the barriers people face in terms of adapting their home to withstand the effects of climate change?

Cost, often a key consideration in people's decision making, is the top response to this question with 84% maintaining that this might stop them from adapting their homes to the impacts of flooding, heat-wave or drought. Next on the list both with about half the people responding that way is a lack of information about what people can do and time (with 52 and 47% respectively). A further 39% were concerned with the impact adaptive measures might have on their lives, while just under a third (32%) said that they don't consider themselves to be at risk.

Strangely 9% said that they don't believe in climate change here, which contradicts the 3% that responded that way in Q4, when asked directly about their beliefs around climate change.

Q10 What would you say are the main things that might stop you from adapting your home to reduce the risk of the impacts of flooding, heat-waves or drought? READ OUT. CODE ALL MENTIONS

	%
Cost	84
Lack of information about what I can do	52
Time	47
Impact on your lifestyle	39
I don't consider myself to be at risk	32
I don't believe in climate change	9
Other (specify)	4
Don't know	3

Those aged 18-54 are more likely to cite cost as a barrier than those aged over 55, as are those who own their homes with a mortgage compared to those who rent privately or own outright.

Men, those aged over 65, those who own their home outright and White people are the least likely to say that information about what they can do is a problem – suggesting that they have, or at least think they have better access to information than their counterparts.

DE groups are more likely to cite impact on their lifestyle as a barrier to action compared to ABC1 groups (47% compared with 36%).

Those aged 65+ are more likely to say that they don't do anything to adapt their home to the impacts of climate change because they don't consider themselves at risk, than those

aged 18-44, they are also more likely to say that it's because they don't believe in climate change (16% of this group say that). This is an interesting finding, particularly seeing as older people are at particular risk of things such as heat-wave.

C.10 What measures will people take themselves?

Approximately 9 in 10 Londoners say that they are already conscious of and careful with their water use, and use through ventilation to cool their homes on hot days.

The number of those that say they've signed up to the Environment Agency's Floodline Warning Direct is only 6%. Over half of Londoners (54%) say that they would sign up to the service, which suggests an appetite, but lack of information about the service. Almost 4 in 10 (37%) Londoners say that they wouldn't sign up to it which suggests that they don't consider themselves at risk of flood.

The picture is more mixed for the other measures listed. Generally there is a relatively low resistance to trying any of the measures, but we can see that despite people already being conscious of their water use, a significant number haven't installed water saving devises (54%, although 43% say they would do it) or got an outdoor water butt or water permeable surfacing (68%, although 50% say they would do it).

Q11 For each of the following please tell me whether you…READ OUT. CODE ONE FOR EACH

% / Measure	Do it already	Would do it	Would not do it	Don't know
Be conscious of water use – turning off taps when brushing your teeth, take a shower instead of a bath etc	90	8	2	*
Install water saving appliances such as water efficient dishwashers and dual flush loos	44	43	11	1
Get a water butt to capture rainwater for outdoor use, or use water permeable materials for patios and parking areas	29	50	18	3
Sign up to the Environment Agency's Free Floodline Warning Direct service so I get a warning if my property could be flooded	6	54	37	3
Close my curtains or blinds on sunny days when out of the house to keep rooms cool	62	27	11	*
Open windows on hot days on both sides of my home to get air flowing through for cooling	86	10	4	*

There is, to a certain extent, a divide across the social classes, with those from higher social classes more likely to already be conscious of water use (ABC1C2 – 99% compared with 93% of DE groups), more likely to be prepared to install water saving devices (ABC1C2s – 45% compared with 34%), and be prepared to get a water butt or use permeable patio/drive materials (ABC1 - 56%, compared with 40%).

There is a further difference around flooding, although the picture is mixed. Here DE groups are the most likely to have already signed up to the Environment Agency's alerts (9% compared with 4% of ABs), but are also the least likely to say they would be prepared to do this (47% compared with 59% of C1C2s). This is particularly interesting as DE groups were particularly concerned about flooding as a risk (compared to other social classes), and correspondingly have done something about it, but are also showing higher levels of resistance to doing anything.

If you recall the strong differences shown in previous questions across people occupying different tenures, it's interesting that council renters don't show a similarly higher level of likelihood than other groups to have undertaken any of the steps listed. In fact in terms of all the water based steps they are less likely to have yet done anything than all other tenures, although more likely to say that they would do those things. Given that they didn't cite any barriers more than other tenures this suggests that there is some other barrier at work – perhaps steps such as using water butts and water saving appliances are less easy to take in accommodation that isn't owner occupied and more likely to be in a block.

Those people concerned about climate change are consistently more likely to have either taken the listed steps to adapting their homes or be willing to do it than those not concerned. Similarly those not concerned are more likely to say that they wouldn't undertake any of the listed steps than those concerned. This is as you might expect, but underlines the importance of communicating the risks of climate change so that people are motivated to act to reduce the risks for themselves.

C.11 What should be done for London?

All of the options outlined got strong support from Londoners with at least 8 in 10 people supporting them all.

The strongest support is seen for measures that would also involve greening London – 77% strongly support extending and improving parks, 70% strongly support planting more trees, whilst creating more green roofs was fourth most popular with 58% strongly supporting this.

The other measure with particularly strong support was encouraging and enabling water companies to deliver better water infrastructure such as piping with 66% strongly in support.

Q12 When it comes to dealing with the effects of climate change, how strongly would you support or oppose each of the following? Would you…

% / Measure	Strongly support	Tend to support	Neither	Tend to oppose	Strongly oppose

Working to improve the drainage system in London	54	36	8	1	1
Identifying critical assets and vulnerable communities at flood risk	51	36	9	1	1
Encouraging and enabling water companies to deliver better water infrastructure such as piping	66	25	6	1	1
Retrofitting 1.2 million homes to improve their water efficiency	51	33	8	2	2
Planting more street trees	70	18	6	3	3
Creating more green roofs	58	24	9	3	2
Extending and improving parks	77	17	3	2	1
Publishing design guidance for developers to reduce overheating risk	52	30	11	3	1

There are few demographic differences shown across the measures listed in this question. With regards to tenure, and again considering the higher level of concern about climate change impact risks and interest in risk mitigating services of council renters it's interesting that they aren't more likely to welcome the above measures, which might suggests that they don't make the link between these specific actions and climate change threats.

There are some differences across the social classes, with AB groups more likely than C2DE groups to support encouraging and enabling water companies to improve infrastructure (95% compared with 88%), planting more street trees (91% compared with 81%) and extending and improving parks than (96% compared with 90%).

Those people in inner London are more likely than those in outer London to support the creation of more green roofs (85% compared with 80%).

C.12 Who do Londoners think should play the most important role in preparing homes for increased risk of flood, drought and heat-wave?

Londoners consider all potential players to have a role to play in preparing homes for the effects of climate change, with at least 8 in 10 people citing each as either very or quite important.

Londoners consider local councils to have the most important role in preparing homes for climate change risk, 66% said their role is very important; 58% thought that individuals themselves had a very important role to play.

Community and voluntary sector groups were considered to have the least important role to play, with 39% thinking they have a very important role to play, and 44% thinking they have a fairly important role to play. With the potential rise of Big Society since the formation of a Conservative led coalition Government, and the poor state of public finances, it could be that the community and voluntary sector is actually key.

Q13 How important a role do you think each of the following has to play in ensuring that homes are prepared for increased risk of floods, droughts, heat waves? Would you say…

% / Who?	Very important	Quite important	Neither	Quite unimportant	Very unimportant
The national government	57	35	4	2	1
The Mayor and GLA	51	38	6	3	1
Individuals	58	32	5	3	1
Environment groups such as Greenpeace and the WWF	46	36	7	6	4
Community and Voluntary sector groups	39	44	7	6	2
Private sector business	47	35	8	6	2
Local councils	66	28	3	1	1

There are few demographic differences across these; the two of interest are related to individual responsibility. Firstly Londoners aged 25-34 are particularly likely to think individuals themselves have a role – more so than all other age groups except for 35-44 year olds, 96% compared with 87% as an average across 18-24 and 45+ groups. Secondly those concerned about climate change are more likely to think that they themselves have a role to play than those who are not concerned (93% compared with 82%). Although this may be an instinctual conclusion, with the political emphasis currently on 'Big Society' and individual responsibility this shows the importance of getting the climate change risk message across to the public.

C.13 Where do people get their information about climate change from?

The internet is the top source of information by far, occupying the top three spots with 41% mentioning generic websites, 24% citing social networking sites and 20% naming local council websites. The GLA's web presence is further down the list, only mentioned by 5% of Londoners.

Local authorities play an important role here, with 13% saying they would get information through direct contact (on top of the 20% using their websites).

More traditional media like television and newspapers is pretty secondary where climate change information is concerned, with 10% mentioning these in a national context, with local equivalents down the list further still.

Q14 If you needed to get information about climate change, including what you can do to help, where would you most like to get your information from?

	%
Other internet sources	41
Blogs/social networking sites/search engines	24
Local council website	20

Direct contact with the council (phoning them)	13
National television	10
National newspapers	10
Notice boards/information points in libraries etc.	9
Local television	7
Local newspaper	5
The GLA website	5
Friends or family	5
Greenpeace/environmentally friendly groups	5
Leaflets delivered to door	5

Web based resources are the most used resource for information about climate change. This isn't to say that other sources are no longer necessary. Looking at the demographic breakdown we can see that it's younger groups that are more likely to use online sources, and indeed those aged from 18-64 are all more likely to cite 'other internet sources', 'blogs/social networking sites' and 'local council website' than those aged over 65 (43% compared with 14%). Those aged 55+ are more likely to cite 'direct contact with the local council' than all younger age groups (23% compared with 9%). Furthermore social classes also show differences with AB classes more likely than DE groups to mention online sources and DE groups more likely to use direct contact with the local council.

C.14 Which sources of information do people trust?

Independent scientists and academic institutions are the most trusted sources of climate change information, with 58% saying they trust this source, despite the implications of the 'Climate gate' scandal earlier this year. Environmental groups are next on the list with 46% of people trusting them as a source of information.

Next come Central Government (37%) and Local Government (33%). Surprisingly the Mayor and GLA has a lower trust rating with only 14% saying that they would trust that as a source of information on climate change, suggesting GLA direct campaigns might be misplaced.

The end of the list is mainly made up of less formal sources of information such as the media and friends and family.

Q15 Which sources of information on climate change do you most trust?

	%
Independent scientists and academic institutions	58
Environmental groups such as Greenpeace and WWF	46
Central Government	37
Local Government	33
National media	22
Friends and family	19
The Mayor and GLA	14
Local media	9

None	3
DK	2

There is a gender split here, with males preferring independent scientific and academic institutions to females (63% compared with 53%) and females preferring environmental groups to males (52% compared with 41%). This suggests we need information from both types of source to ensure the widest possible buy-in to the climate change issues we face.

Those from the higher social class groups are more likely to trust scientists and academic institutions than their counterparts too (ABC1s 67% compared with 44% of C2DEs).