"Growing, growing, gone"

London Assembly Environment Committee report into sustainable long-term growth: Written evidence

Ian Williamson,
Scrutiny Manager
London Assembly,
City Hall,
The Queen's Walk,
London SE1 2AA

22 September 2015

Dear Mr Williamson,

Environmental pressures of London's growth

We welcome the opportunity to comment on this important consultation. As the supplier to approximately 800,000 customers across a number of London Boroughs the question of how to meet increasing demand with less resource is of great importance to us.

Affinity Water serve one of the fastest growing, most economically active regions in the UK and we estimate that by 2040, there will be an extra 600,000 people living in 280,000 new homes in our supply area. Many of these people and homes will be within the parts of London we supply.

Further, our customers are among some of the highest water users in the country and we have committed to reducing the amount of water we take from our underground resources to protect the environment.

In our Business Plan 2015-2020 we committed to:

- Reducing leakage by 14% - the equivalent of 27 million litres per day;
- Protecting precious chalk streams by reducing the amount of water we take from the environment by 42 million litres per day;
- Promoting the uptake of our social tariff to support those least able to pay their bills;
- Installing 280,000 meters into properties in our regions by 2020 through our Water Saving Programme

I would welcome the opportunity to discuss this with you, and the Committee, in greater detail.

Best wishes,

Mark Ferguson
Public Affairs Manager

Questions

1. **What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:**
    a. *Water management (water demand, water supply, waste water management, and managing rainwater and flood risk)*

Our own estimates are that by 2040, there will be an extra 600,000 people living in 280,000 new homes in our supply area, including within the area covered by the Greater London Authority. The most significant environmental impact of this is in meeting the demands of an enlarged customer base while protecting the environment.

In our Water Resources Management Plan 2014 (WRMP) we outlined a variety of ways in which we will achieve water savings while maintaining resilient supplies at all times.

For example, we have set how we will achieve water savings through leakage reductions, reductions in our customers' consumption through metering and reducing abstraction of groundwater to improve flow conditions in chalk rivers. We are also continuing to invest to ensure we can move water from areas of surplus to areas of deficit and to meet pockets of new development.

Each of these goals is set with consideration to the significant environmental impact of the growing population in our supply region.

The implications of London's growth in the coming decades mean that it is vital that we work towards a more integrated approach to water management. Indeed, we commend the work the Greater London Authority has already undertaken to ensure that this is the case and would encourage the next Mayor to continue this as we can do more.

Water companies cannot deliver on all aspects of water management. Water companies should continue to play the leading role in water and wastewater management, but this must be done in greater partnership with local and regional government, the EA and public and private-sector building owners and managers.

2. **How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?**

We support the work that has already been done in seeking to address the challenges presented by a growing population. For example the work that has been done to develop the London Infrastructure Plan 2050 is welcome and its institution of the Water Advisory Group is something that should be continued by the next Mayor.

3. **How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?**

We believe that it is imperative that there is a joined up approach from national to local level to address the challenges we face and, to some extent, this is already happening.

For example, water companies engage extensively with their local communities in the development of their WRMPs. This consultation with customers, community and environmental groups ensures that the final plans meet the expectations of the people it is supposed to serve.

Further, water companies are starting to engage with each other on a regional level. At Affinity Water we are members of the Water Resources in the South East (WRSE) group and the Water Resources East Anglia group (WREA). The purpose of these groups is to develop regional solutions to regional challenges.

At a national level the Department of Environment, Food and Rural Affairs (Defra) are encouraging water companies to come together a national plan for long term water supply resilience.

This demonstrates that there is action taking place at local, regional and national levels to address common challenged. However, we believe that there needs to be more interaction between these different levels to ensure best practice is shared and work is not duplicated.

4. **What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?**

If you could provide or point to specific documents setting out these ideas or approaches this would again be very helpful.

In the development of the London Infrastructure Investment Plan several suggestions were made by water companies which contribute to better water management.

For example, water companies cannot deliver on all aspects of water management. Water companies should continue to play the leading role in water and wastewater management, but, this needs to be done in greater partnership with local and regional government, the Environment Agency, public and private-sector building owners and managers and London community groups.

Further, we endorse the view that more can be done to retain or recirculate rainwater and reduce the rate of run-off to river or indeed to capture surplus water in rivers and, in particular, the Thames. However, we appreciate that this may require additional volumes of storage. To achieve this continued work and co-operation among water companies in the south-east is needed to consider opportunities to improve the future resilience of supplies under unprecedented extreme weather conditions such as droughts and floods.

We also support the use of natural capital as a framework for analysing environmental pressures, and would be happy to play our part in developing this concept for London's water.

5. **What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades?**

Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

At Affinity Water we want to continue working with the GLA to protect the interests of London's residents in the decades ahead. That is why we would like to see the GLA focus on priorities which focus on the next Mayoral term 2016-2020 but also look beyond this period.

For example, in the short term, we would like to see the GLA take the lead in making consumers more acutely aware of the water they use, the costs of its provision and removal and have more control over the savings they can make. Campaigns such as our own Water Saving Programme which is doing this are an excellent start but the GLA could play a greater role in promoting these campaigns.

In the longer term, we need to be looking beyond the 2040 period to ensure that there are no major barriers and we must continue to work to align water resources planning with long term infrastructure planning over an extended period.

Bexley Council appear to have a policy to promote growth by selling parks and open spaces, which I object to. Nobody wants to live in an 'urban jungle' so there needs to be more done to preserve our green spaces across London. The main driver for Bexley Council's approach appears to be a financial one in order to balance their budget. The loss of green spaces, with all the nature and environmental implications that go with it, should be resisted (or even legislated against) at all costs. What's the point of having a low Council Tax if it means living in an 'urban jungle'?

Dear Sir madam,

I am Chairman of the LA21(Bexley)

In answer to your questions, my answers are as follows:-

1. The difficulty in supplying sufficient water in the South – and London.

   Twenty five years ago, I suggested that large water-collecting tanks should be sunk in the ground at the start of any new build to collect both rain water and 'Grey' water from baths etc. This would then be used to water the garden, wash the car etc – thus saving vast amounts of drinking water currently wasted on flushing toilets etc. Hardly anything has occurred. Some grey water systems have started to appear on buildings but is very slow. There are already hosepipe bans during hot summers and more difficulty providing sufficient water pressure to high-rise flats. Yet more housing is planned to cope with an ever growing population. The answer trotted out is, 'water saving' devices are installed in new builds.' This is total madness. If there is insufficient water in the first place no amount of devices will be of any use. This issue should be the number one priority. Energy supply is important but it is possible to survive from time to time without it. In a developed country such as ours energy supply should be provided. It is all very well having wind turbines but they proved to be

generally very inefficient. Simpler measures – for a start – should concentrate on solar panels; photovoltaics and CHP Boilers; and good insulation as well as building design, of which there are now several good examples.

2. Green spaces, waterways, parks and green infrastructure again should be high on the list. Any new development must have real biodiversity on site - not just a patch of grass or similar. Again, any development should have green/brown roofs

3. Policies at both National and local level can only do so much to keep the current situation under control. But it is delusional to believe that more and development can continue at the present rate without an adverse effect on peoples' lives, health and well being. What concerns me is that local policies which are implemented by people who live in the area and are elected to mirror the views of the local population are being overturned by National government. This not democratic but dictatorial. How soon are we going to reach the stage where we just cannot cope. Before anyone can accuse me of being a 'Nimby' I have lived in my house for 39 years. It directly overlooks the A2. When I first moved here, the A2 was a quiet suburban road, now it carries well over 120,000 vehicles per day. Fortunately, I live in a borough that currently has nice parks and open spaces. But the council at the moment is attempting to sell off patches of green land to supplement a cut in their budget.

4. Please see above in answer to this question.

5. I do not wish to add any further to my comments.

Submitted,

Ian Lindon

Chairman LA21(Bexley) 16.09.15

Dear Linda Bailey,

Thank you for sending me a copy of the latest magazine.- quite informative.

I feel however that I must comment on some of the contents over which I have some concerns.

- Firstly, I am now more confused with the number of dwellings being built in the borough over the next 15 years.

- At the Inspector's Inquiry last year, which I attended, it was agreed that the number of homes being built annually was 4,500. However at the 'Places Scrutiny Committee' it was mentioned that 16,000 were already being built. In your accompanying letter, you mention some 22,000 over the period. This works out at 1,466 per annum. If the figure of 4,500 per annum is used, there would be some 65,000 homes built.

Can you please clarify the actual position the council is taking.?

- On page 7 I note that the council is now supporting a bridge to Belvedere but remaining apparently neutral on all the other proposals put forward by TfL. Will this be a public transport crossing carrying heavy rail, DLR or trams - which the LA21 Traffic/Transport Forum supports (our position at the original Inspector's Inquiry) or will this be a road bridge, which not only I but many people are opposed to - despite what TfL has misleadingly broadcast.. The traffic in Belverdere already suffers from heavy congestion and long waits due to inappropriate local roads. Also it is totally counter productive to what the council is promoting in the magazine. Local employment is up by over 33% with a further rises in the pipeline - this DESPITE any river crossings. Why should means, by way of river crossings, invite others from boroughs in the North be invited to take the jobs away from locals whom the council has been trying to develop.? It would also provide the means for local residents to find jobs elsewhere, outside the borough. 55% of locals already work elsewhere. Mostly in central London. Do we want to encourage more.?

-- Page 10. I note Jon Hillary talks about the new 'Ocado' warehouse in Erith as a 'monster.' This emotive terminology is frightening. I understand that the 3,500 jobs are seen as positive but what is the effect on local residents who are concerned that our pleasant surroundings will be taken over by over development.?

- page 37. The comment by Will Tuckley that,' we aim to add around 50,000 people to the population by 2030 is a frightening thought. We who have lived in the borough for years, have seen the noticeable change to the area. Schools,doctors' surgeries, hospitals are already full and more. How will we possibly cope with numbers envisaged? Also this should be read alongside the comment on page 42 that, 'It is very easy to forget you are in a city.' What! I know that we are an outer London borough but most people still perceive this as part of KENT and wish to keep it so.

- page 38. I note that you have stated that, 'we encourage sustainable growth.' The problem is that when I was first involved with the Environmental Forum -sadly long disbanded - the word sustainable meant passing on the parks, open spaces UNTOUCHED to future generations. The meaning is now totally corrupted to mean more and more building with the little bit of grass in the middle. Please note the quote on page 39 from Paul Moore, 'Living in a place where there is space to breathe and grow.' Well we certainly are growing but we are ending up with less and less space and as for breathing - well? This is unfortunately another throwaway line, to make it appear that the council is doing all it can to promote biodiversity and protect the environment. I wish it seriously meant it.
His other comment that,'growing populations appeals to large employers.' Well yes THEY might see it that way but what about us, the local residents who located here many years ago because they

liked the open green spaces and general surroundings. There has to be a better balance. If anyone looks at Bexley in the 1950s we were surrounded by green fields. All that has mostly disappeared. If we carry on at the same rate, we will end up looking at nothing but concrete. I lived in central London when I was much younger and single. However, when I ended up with a family, I could not wait to move out to a greener outlook which I strongly wish to preserve..

regards,

Ian (Lindon)
Chairman LA21
Chairman Voluntary Forum

BEXLEY NATURAL ENVIRONMENT FORUM

The umbrella body for Friends of Parks and Open Spaces groups, local wildlife experts and conservationists and sustainability campaigners in the Borough. We work to protect, restore and enhance habitats and biodiversity across Bexley.

Response to:

Greater London Assembly Environment Committee seeking evidence on the environmental pressures of London's growth.

From Chris Rose BSc (Hons), MSc, Vice Chair BNEF

We are beginning to suffer from serious 'consultation fatigue' over the number and frequency of these sorts of 'surveys' emanating from the GLA and Bexley Council, especially since the central tenet of our responses is roundly ignored in favour of ploughing ahead with plans based on a deterministic, quasi-religious belief in the inevitability and,desireability of resource consumption growth economics (which is what is in reality a key driver ofyour concerns in this instance) and the refusal to accept that there may – or should - be any alternative.

We do not believe that the medium the long-term actual or potential resource shortages looming can be avoided simply by improving usage efficiency and recycling. Professor Tim Jackson in 'Prosperity without growth' rejected that view. This also ignores London's resource footprint and the extent to which that is exported within the UK, and globally. On land, of course, the old adage 'they don't make it anymore' applies.

We remind you again that the UK Government has made a commitment to the international community under the Convention on Biological Diversity (CBD)

http://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf

as follows:

Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

It is widely held that the UK is significantly exceeding these limits. The World Wide Fund for Nature's 'Living Planet Report' concluded that the UK is living an unsustainable 2.75 planet lifestyle. The Global Footprint network reckons the UK's consumption is more than three times its biocapacity:

http://www.footprintnetwork.org/en/index.php/GFN/page/trends/united_kingdom/

Resource use targets are required and they need to result in a net reduction in resource throughput, for the UK as a whole in the region of two thirds, and in London probably more.

We therefore hold both the GLA and Bexley Council (with 'Growth strategy', laughably called a 'vision') in contempt of this country's treaty obligation, since both will lead to a net increase in resource consumption for the forseeable future, and certainly well beyond 2020.

The financial cost of all the 'infrastructure' advocated in the '2050' document to deal with issues such as the impending water deficit ignores hard resource usage, and the carbon emissions were not dealt with. A deterministic view of population is taken, and it is accepted as read that burgeoning numbers of people are an unquestionably 'good thing'. Yet it is implicit in that document that most of the challenges and costs – including in the issues you want to examine here of water, energy and land - are a direct result of that. No attempt is made to examine whether an adult debate about human numbers in the round (and not just immigation), their geographical distribution and per capita resource consumption (i.e. greater behaviour changes) might be a cheaper, faster and more effective way forward, not least in delivering true one-planet sustainability. Even without the issue of human numbers, it is bizarre that there was no mention of UK regional policy, and whether cramming this much 'development' into London is either sensible or inevitable. The fixation with 'bigger, faster, and more' is better is lamentable.

There has not been the slightest indication that the GLA see any ultimate limits, so that everything listed as bridging the projected gaps between supply and demand is only buying time and/or passing the buck to future generations. In short, there is a major over-reliance upon technical fixes, an underlying message that we can somehow keeping having our cake and eating it and a depressingly narrow, blinkered vision of what progress and improvement should look like – more concrete, more cars, more people, less nature.

Recent examples of the inevitable consequences of this world view in Bexley include:

- Bexley Council agreeing it will have to bin its 'Core Strategy' (its central strategic planning document) after pressure and publicity from us over the fact that has decided to jack the proposed house building target for the next 15 years from the 4,500 agreed only 4 years ago by H.M. Inspectorate to 22,000, which suggests a massive 20% increase in the Borough's total population over the 2011 census. The Council has no electoral mandate to do this as no such policy appeared in the 2014 Borough election campaign. The outcome of all the effort we put into trying to 'green' the follow-up Detailed Policies and Sites tome is now in limbo, and at this rate it may be several years before replacements become available, at which point we will have to start all over again.

- Allied with this is the rest of the Council's 20th century 'Growth' strategy. We are told its supporters are the people we should trust to deliver this bright new future without destroying the things we value (which are not spelt out, of course). There is no credible plan to reduce resource consumption to the extent that this major population hike does not deliver a net increase, despite the UK signing the international treaty citedabove to get usage within sustainable limits by 2020 in order to preserve biodiversity, and the core strategy itself having been being riddled with the word 'sustainable'. What the Council really means, of course, is 'sustained development'.

- Bexley Council support for a Belvedere road bridge over the Thames and what is tantamount to support for another at Gallions Reach, both of which will pour traffic into Bexley despite this blindingly obvious problem being the reason the Council objected to the previous bridge proposal.

- Open space sell-off plans, now explicitly linked to the Council's 'growth' agenda, which is also in part responsible for the more than 18 month hold up in approving the 2013 Sites of Importance for Nature Conservation review.

- The refusal to countenance turning over brownfield adjacent to Erith Marshes to nature conservation use, so as to deliver a modest increase in size for this SINC of London importance, despite allowing erosion elsewhere in the shape of the Veridion Park development, and knowing that a big chunk of Crayford Marshes SINC still has a 'development' axe hanging over it.

- Unanimously approving building on nearly three quarters of the Erith Quarry Grade 1 SINC, with 'mitigation' limited to leaving a strip of woodland (which was already protected by saved UDP policies), and a small fragment in one corner, which is too small for the density of reptiles already found on the site. No attempt is being made to try and make up for this major loss of important scrub habitat by changing management regimes at other sites of lower wildlife value or by utilising other brownfield land.

On energy:

There needs to be a sustained and coherent approach to demand reduction. That does not exist at present. We have written a paper in support of Bexley's (budget cut-driven) plans to reduce night lighting – which we ourselves proposed before the Council agreed to go forwad with it - stressing the potential benefits for biodiversity as well as saving energy and money. There is vast roof space in London, but no real effort to get it covered with solar. Bexley Council continues to promote the idea that the Borough has poor transport connections as an excuse for failing to make 'developments' car free, even where public transport provision is good. The PTAL measure appears to use benchmarks of 'connectivity' that are unnecessarily high. This is also a major land use as well as an energy usage issue.

On water:

Expensive new developments even now go up without sticking a cheap water butt on the end of the downpipes. We support demand reduction over major financially and carbon costly technical fixes which will only put off the date when real world limits will have to be accepted.

On 'green infrastruture':

Manufactured 'green infrastucture' cannot usually compensate adequately for existing semi-natural habitats. We support retro-fitting ofexisting buildings with green roofs, and the reduction in hard surfacing surrounding them, but not more losses ofexisting ground level open spaces. We reject the 'smoke-and-mirrors' implication that ever more 'development' and 'densification' can in the long run do anything other than result in a net loss of such green and open spaces. There have been reports from both the GLA Environment Committee and GiGL on the appalling loss of garden green space (aka existing 'green infrastructure') in London, principally to multiple car parking, yet no action has been taken.

We fear that in leaving small parts ofprivately-owned land that are otherwise allowed to be developed ‘green’, Council propaganda will state that it has increased public open space, in an attempt to disguise what in reality are major reductions in space available for wildlife (see Erith Quarry above). Smaller, more fragmented sites, subject to increasing disturbance from higher surrounding densities of people, cannot replace large semi-natural habitats.
We do not want to see a London of ‘Nature 2.0’ where it has all been bent almost entirely to the will of human greed and lack ofself-control, and is impoverished of specialist species that cannot live cheek by jowl with ever more urbanisation.

Part of London’s ‘greatness’ is claimed to be the amount of green space. We are dismayed to see that the GLA and Bexley Council wish to mount a sustained assault on this, with no explicit public mandate to do so.

We want a commitment from the GLA and Councils to fully protect the existing 1,500 plus sites of wildlife importance in London from ‘development’, and an explanation of how commitments to restore and create important habitats to reverse the decline in the capital’s biodiversity, as set out in The London Plan, will be met.

We note that although the importance of brownfield along the Thames for biodiversity is widely recognised, and the London Plan contains a target figure for retention of such mosaic habitat, there is no Borough by Borough target or co-ordination mechanism to ensure this happens, so that Bexley Council can duck and dive and do nothing about it, despite having some important such sites, including adjacent to a known Shrill Carder Bee population.

In terms of ‘green infrasructure’ in new development, the GLA’s weighty ‘Sustainable design and construction guide’ is all very well, but most ofit is unenforceable. Bexley Council has a policy of trying to get green/brown roofs on industrial development near the Thames, yet when we pushed this at a recent relevant planning meeting, the ‘developer’ got out of it by saying that since fork-lifts would have to be driven around inside it would not be possible to have enough support pillars. The development got approved anyway, although our efforts did get the ‘bonus’ ofa ‘green wall’ out of it. The reality out here is that industrial developments near the Thames are large grey sheds, none of which have green/brown roofs, with the additional downsides of spewing light pollution onto the important remaining fragments of marshland and of creating few jobs per square metre of ‘development’.

Meanwhile a lot of flat-roofed housing has gone up in Belevedere and Erith near the Thames and there appears to have been no effort to get green/brown roofs included, which looks to be a better option given the resounding failure of the existing policy.

We understand that GiGL is now producing an inventory ofsuch roofs, which will probably show just how much unexploited potential there is on this front.

Bexley Council’s flogging off of open spaces, building on SINCs, moratorium on street tree planting and failure to have any nature conservation officer / other local wildlife expert input into its new grounds maintenace contract does not suggest a credible committment to protecting and enhancing existing ‘green infrastructure’, never mind increasing the amount of it.

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ENDS

London Assembly Environment Committee investigation into environmental pressures of London's growth ~ Representation from Campaign for Better Transport

Introduction

Since 1973, Campaign for Better Transport has been helping to create transport policies and programmes that give people better lives and support the environment. Our vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

Question 1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades?

Air pollution is a public health crisis in London. In April 2015 the Supreme Court ruled that immediate action must be taken to cut NO2 air pollution. Population growth cannot be allowed to translate into increases in road traffic that will increase air pollution.

Question 2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

The proposed ultra-low emission zone (ULEZ) for introduction by 2020 would require most diesel vehicles entering Central London to be the latest "Euro 6" standard. This proposal is inadequate, as air pollution is not restricted to the centre, and must be implemented for the whole of Greater London.

The London Infrastructure Plan 2050 contains proposals to increase road capacity by building an underground inner ring road and three road river crossings in east/south-east London. The phenomenon of induced traffic is well established. New roads create new demand and will increase congestion and pollution. These plans will worsen air pollution over a wide area.

Campaign for Better Transport provides further information and references on the topic of induced traffic at our website here: http://www.bettertransport.org.uk/roads-nowhere/induced-traffic

Question 3. How do policies and processes at the national and local levels help to manage these impacts?

No response.

Question 4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

No response.

Question 5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades?

Before or during the 2016-20 mayoral term, plans for new road river crossings in east/south-east London and the proposed tunnelled Inner London Ring Road must be cancelled. This should be combined with measures to increase public transport capacity, increase take-up of public transport and reduce private vehicle use. In order to comply with the 2015 Supreme Court ruling, no new road capacity can be provided and demand for existing capacity must be managed.

September 2015

James MacColl
Campaign for Better Transport

Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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Response to the London Assembly's consultation on Environmental Pressures of London's Growth

Introduction

The Consumer Council for Water (CCWater) is the statutory body representing the interests of domestic and business water and sewerage customers across England and Wales. We have four local committees in England and a committee for Wales. This response is made by the London and South East Committee which represents the interests of the customers served by the water companies operating across London.

We welcome the work undertaken by the Environmental Committee of the London Assembly which draws attention to the environmental challenges London will face in the medium to long term. These challenges will be mostly as a result of population growth and climate change.

The scope of the Committee's enquiry is very wide, raising many issues. Our response is an overview of issues such as water availability, flooding and drainage which are relevant to water companies and their customers.

Water Management

Security of Supply

We share concerns over the degree of uncertainty in the long term associated with population growth, climate change and changes to existing water management legislation (i.e. abstraction reform). These issues contribute to the significant forecast deficit to water supplies in London. The drought in 2010-12 and the subsequent exceptionally wet weather in 2013 demonstrate why resilient water supplies and drainage systems are so important.

Water companies are already participating in long-term planning through their Water Resources Management Plans and Drought Plans. As part of this long-term planning process we expect water companies to engage with a wide variety of stakeholders, including industry, agriculture, environmental NGOs and local government representatives. This can result in more collaborative, strategic planning that can deliver benefits for customers and the environment.

Demand Management and Supply Measures

We accept that in the medium to long-term, the demand for water is forecast to exceed supply. For this reason a number of supply-side measures will be required to satisfy the needs of water consumers. We feel that it is important that, in addition to this, water companies supplying London continue to make progress with their demand management strategies including water efficiency campaigns and messaging and practical water saving activities.

It is crucial that, in order to address this potential deficit, water companies explain their proposed strategies to customers, how these proposals are likely to affect them in relation to the service they receive and the bills they pay. We feel that when successful, demand side measures such as metering (where appropriate) and leakage management might delay the need for major new resource development. We also support the continued exploration of options for storage and wastewater re-use in order to meet future supply challenges, but expect to see further customer and stakeholder consultation as these options are developed.

Water Efficiency and Leakage

To be successful, the delivery of water efficiency messages should be part of a continuous education programme and not only at times of drought, have the right messaging in place, ideally be targeted to particular types of customers since motivation seems to change by life stage and other demographic/socio-economic factors. It might be useful if, as part of this initiative, there is a clear link between saving (hot) water and saving energy. It seems that for some customers, when doing water savings activities the main motivator is to save energy (and money) or time.

Leakage levels can affect customers' water saving actions – customers question whether the water they save has any impact when compared to the amount of water that is lost through leakage which creates a barrier to changing water using behaviours. Water companies have proposed further leakage reductions but need to do more to explain the challenges they face and the work they are undertaking so customers understand the issues.

We believe more can be done to raise awareness of the stress on our water environment and the simple measures that help to save water. Our research indicates that one third of adults in England and Wales have seen or heard something n the past year about pressures or impacts on water supplies in the UK[1]. We acknowledge this is a big challenge given the current lack of awareness but all stakeholders have a part to play in this regard.

Retrofitting existing developments with water efficiency devices

This could be an opportunity for partnership working between water companies in the South East and other stakeholders (including developers and providers of social housing), not only to retrofit properties, but also to provide advice on how to be water and energy efficient. However, we question how this could be accomplished and how will it be funded.

Metering

We expect a clear explanation of how compulsory water metering will be taken forward by those companies that are planning to do this. Especially with regards to the assistance that will be provided to help customers through the transition from unmetered to metered charging. This must include targeted help for customers on low incomes who will see their water and sewerage bills increase as a result of being metered.

It is important to note that, at a time when some companies are rolling out compulsory metering programmes and pressing their customers to reduce their water use, it is almost certain that customer expectations for leakage reduction will be even greater. As such, it will be important for such companies to explain how water savings achieved through metering and leakage reduction will be measured and reported to customers.

More recent experience from the metering programme suggests that internal plumbing and leakage issues are a significant water saving opportunity. We have been pleased that water companies are offering all customers help with supply pipe leakage and are providing further practical help to those in financial difficulty. This again is an area where water companies could work in partnership with Housing Authorities/Charities.

[1] YouGov (2015) Using Water Wisely and Attitudes to Tap Water. A report for the Consumer Cuncil for Water. http://www.ccwater.org.uk/wp-content/uploads/2015/06/FINAL-Using-water-wisely_full-report_MASTER_FINAL_11-06-15.pdf

Sustainable drainage and managing London's Flood Risk

There is a lot of complexity over roles and responsibilities in relation to drainage and surface water management. There are various stakeholders who would be involved in the process, including (but not limited to) Thames Water, local authorities, Highways Agency, Environment Agency. As a result, there is a need for a coherent approach to prevent and manage major flooding incidents as well as to build resilience to the growing demand being placed on the public drainage systems. We expect that, once responsibilities have been assigned, Thames Water (with its statutory duty on sewerage and drainage) will play an active role in the management of flood risk.

It is important that sewer flooding issues are tackled as part of this process, and that funding is targeted appropriately. Counters Creek is an example of a scheme where alternative approaches are being used and where partnership working with Local Authorities is in action.

We acknowledge there is a lack of adequate flood risk management, planning and funding (except for tidal flood risk) for London. We welcome the development of the climate resilient, multi-source, flood risk management plans, as well as the identification of synergies and opportunities between different sectors. In this area there can be opportunities to integrate flood risk management with the use of green infrastructure for regeneration and development. We would expect these plans to include robust cost/benefit analysis, especially (but not limited to) instances where alternative measures are being considered.

Funding the plans

We would be concerned if any plans to mitigate London's environmental pressures had the effect of wrongly prioritising water companies' investment in London's water infrastructure over the rest of the water companies' assets to the detriment of the wider customer base.

Thames Water is the main supplier of drinking water and the only supplier of wastewater services to the Greater London Area. However, the company's customer base is spread over a much wider geographical area. As a result, the cost of any investment by Thames Water in London's infrastructure will ultimately be shared by all of its customers, including those living beyond Greater London (in the same way that the cost of investment in the company's infrastructure outside London is borne by all of its customers, including those living in London). This means that when planning for future investment in relation to London, Thames Water and its regulators need to take into account the impact on the rest of the company's network and investment plans, and the resulting impact on all of its customers' bills. Similarly, other water companies supplying water to parts of London (Affinity Water, Essex and Suffolk Water and Sutton and East Surrey Water) also supply customers outside the London area – the needs and priorities of their customers must also be factored into decisions on infrastructure investment.

For this reason, We advise great caution in apportioning water companies' investment by geographical area and/or using one company's costs as proxy for another's, when companies' costs and customer needs, profiles, willingness to pay and priorities may vary.

Enquiries

Enquiries about this consultation response and requests for further information should be addressed to:

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www.cprelondon.org.uk

17 September 2015

Ian Williamson
Scrutiny Manager
London Assembly
City Hall
The Queen's Walk
London SE1 2AA

By email to: environmentcommittee@london.gov.uk

Dear Mr Williamson,

Environmental pressures of London's growth

Thank you for the opportunity to respond to this important consultation.

CPRE London is a charity concerned with the protection and enhancement of green and open space in and around London. We have represented the views of our members for nearly 40 years.

We are extremely concerned that the weakening of the planning system has led to an exponential rise in the numbers of planning applications approved and completed affecting designated open space within the GLA boundary.

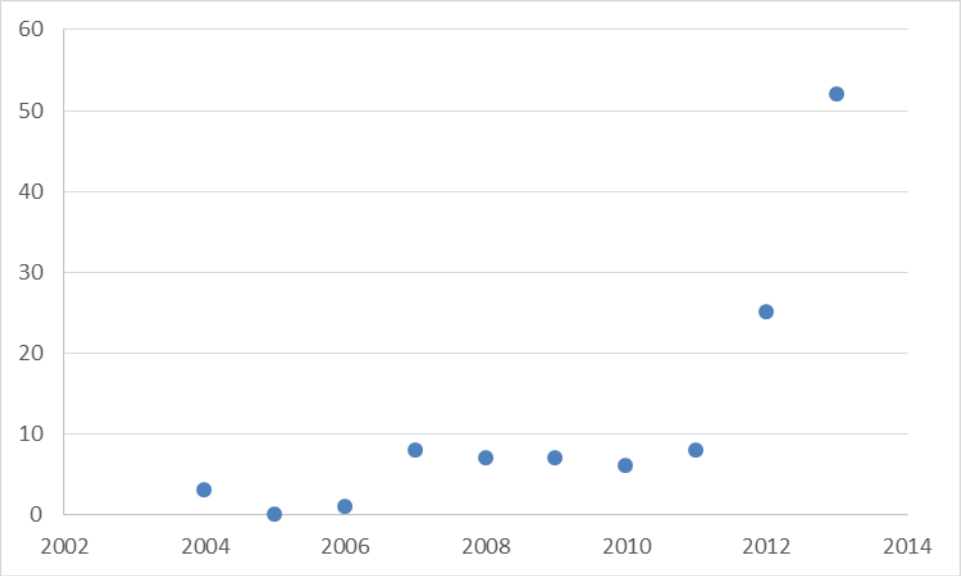
This allows politicians at all levels to claim they support the protection of Green Belt and Metropolitan Open Land (which has the same designation as Green Belt) while allowing a system to exist where the protection has been substantially weakened to the extent that only political will stop it from being built on.

Specifically, what has happened is that applicants can now argue that anything is more important than the protection of green space. A subjective view can be taken on this – and this has created a loophole which is allowing more and more brazen applications to come forward – applications which in some cases look like highly opportunistic land grabs.

- We are very concerned that many of these are justified in the name of reaching housing targets – while doing nothing to tackle the affordable housing crisis.
- We are also extremely concerned that many applications are for schools and that land has been purchased by the Education Funding Agency speculatively. This is an agency of a government which does not support, in written policy terms, the taking of Green Belt or Metropolitan Open Land for development.

While we appreciate there is legal process for determining the efficacy of applications, we would point to the reality of what is happening on the ground in terms of ***a sharp increase in the numbers of applications and approvals in recent years***.

Number of approved /completed planning applications affecting designated open space

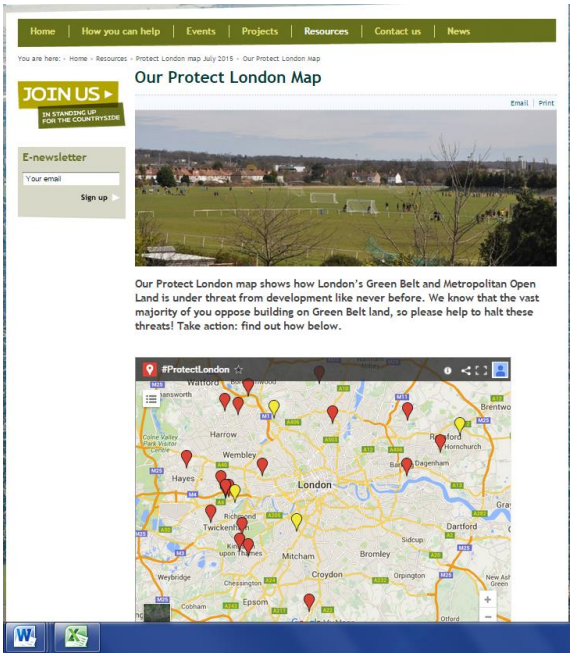


Source: London Development Database (2015)

The graph highlights a recent dramatic increase in the number of planning applications which are completed or approved: the financial years from 2004-2011 have fewer than 10 applications each year across all London Boroughs yet in 2012-13 this more than doubled to 25 and doubled again 2013-14 to 52.

This trend has been reflected in the increasing number of reports from members of the public who are concerned about losses to the Green Belt and Metropolitan Open land within Greater London received by the CPRE London office.

We have created a map of threats to Green Belt and Metropolitan Open Land in particular and this is being added to on a weekly basis as local communities tell us about threats in their area. http://www.cprelondon.org.uk/resources/item/2288-protect-london-map



Our map shows the alarming extent of what Londoners stand to lose. Most people believe that Green Belt land is protected, but this research shows land which is much loved and well-used to come under threat from development.

Astonishingly, this includes playing fields, recreation grounds and even local parkland.

The vast majority of Londoners oppose building on Green Belt land according to a poll conducted recently by our National Office. See http://www.cpre.org.uk/media-centre/latest-news-releases/item/4033-60th-anniversary-poll-shows-clear-support-for-green-belt.

And local campaigners are battling to save these spaces. Here are some recent quotes we have obtained from local groups battling to save well used and much loved local spaces.

Chris Nutt from Save Oakfield Site

"Oakfield playing fields are in constant use by people of all ages and backgrounds: we represent the cohesive and active community that politicians want. We are staggered at Redbridge Council's plans to sell it off for development. There is no gain for the local community whatever. And the proposals don't include affordable homes. There is no need to build on this piece of Green Belt in Redbridge. The council can allocate land for housing in Ilford Town Centre or on brownfield sites."
https://www.facebook.com/SaveOakfieldSite

Caroline Donnelly in Hillingdon

"We are fighting back against a potential development threat to our green, open space in Hayes End known locally as Hayes Park. It was recently put up for sale for £5 million. There have been numerous attempts to develop the site in the past, but the local community has stood up and protested. We are really concerned that, with the recent shift in government policy regarding Green Belt land protections, we will have a much bigger fight on our hands this time around."
https://www.facebook.com/friendsofhayesend http://protecthillingdongreenbelt.co.uk/

Balvinder Dhillon from Keep Osterley Green

"The proposal to put a free school on the White Lodge site in Hounslow is bewildering. The site is not designated for education use and it is not shortlisted in the Local Plan site allocations. The lawful use of the site is for sports and recreation. Furthermore there are many suitable brownfield alternatives readily available. Even though it is manifestly obvious this is an inappropriate site for so many reasons, with other suitable alternatives available, this has not stopped the Education Funding Agency purchasing the land with substantial taxpayers' money and we are astounded that the council has even allowed it to get this far. Our council seems to treat this finite resource with disdain, with current plans allowing a number of the borough's new free schools to be built on Metropolitan Open Land."
http://keeposterleygreen.org/

I hope this helps and thank you once again for the opportunity to submit evidence.

Yours sincerely,

Alice Roberts
Green Spaces Officer, CPRE London, 02072530300, 07792942691 alice@cprelondon.org.uk

Environmental pressures of London's growth: representations of The Crown Estate

INTRODUCTION

The Crown Estate welcomes the opportunity to provide evidence for the London Assembly's investigation into the environmental pressures arising from London's growth in the long term. This is provided within the context of our extensive ownership in London's West End, and our on-going commitment to develop and invest in Central London.

The Crown Estate is a commercial organisation governed by Act of Parliament – 100% of our net revenue (profit) is returned to HM Treasury for the benefit of the nation. Our diverse interests comprise:

- Extensive urban assets in London's West End, valued at over £5.5bn, including nearly all Regent Street, about half of St James's and the freeholds of the Nash terraces in Regents Park and Kensington Palace Gardens;
- A nationwide regional retail portfolio worth over £1.5bn;
- We are one of the country's largest rural landowners, holding around 106,000 hectares (263,000 acres) of agricultural land and forests, together with minerals and residential and commercial property;
- The Windsor estate, which covers approximately 6,400 hectares
- Our coastal portfolio includes around half of the foreshore and beds of estuaries and tidal rivers throughout the UK, through which we have interests in ports, harbours, marinas, leisure boating and aquaculture facilities;
- Our marine assets include virtually the entire UK seabed out to the 12 nautical mile territorial limit.

London is one of the most successful cities in the world and underpinning this success is the depth and professionalism of London's commercial markets. The West End is a key driver of this continued growth generating 3% of the UK's economic output (£51.25 billion GVA) and hosting 610,000 jobs. Importantly over 80% of those jobs are in businesses with less than 10 employees. London's West End is the busiest shopping district in the world, and is the UK's cultural heartland. These aspects in turn generate visitor numbers generating jobs over the whole of London. The Crown Estate is the largest land owner in the West End responsible for approximately 8 million sq. ft. of prime real estate which is home to some of London's most iconic shopping destinations.

We have embarked on a £1.5bn regeneration of key assets across both Regent Street and in St James's as part of our long-term vision to transform this core part of central London to the benefit of everyone who lives, works and visits the area.

We have over 615,000 sq. ft. of developments on site this year and have delivered 17 projects in the last 14 years; together with schemes already delivered, this will mean we've delivered over 2m sq. ft. of new space for global businesses since we began developing in the West End. Work also continues to bring forward further public realm, lighting and artwork improvements associated with our major projects.

In the core West End office market (Mayfair, St James's and Soho), we're delivering half of all new office space equating to 400,000 sq. ft. out of 816,000 sq. ft. with more high quality space coming to market through our St James's Market and 1 New Burlington Place schemes.

Coupled with an unrivalled cultural offer, the West End remains at the heart of London's commercial and economic success, making it one of the most desirable and exciting cities in the world. It is, however, often forgotten that London's economic success is also predicated on having communities which can accommodate the needs and aspirations of people of all ages, from all wealth brackets, with a broad range of cultural, economic and social backgrounds. This diversity encourages people to pool their knowledge, skills and experience. It creates space for the whole range of businesses that are needed to drive long-term sustainable growth, from big listed companies and financial institutions in St James's and Regent Street, through to the start-ups and creative industries prevalent in Soho.

A rising population will therefore require homes, jobs, entertainment, local amenities, shops and restaurants. The addition of better experiences and better environments for communities and visitors alike will in turn result in more visitors to London. The West End is in a position to provide these facilities.

TRANSPORT

Crossrail 1 and Tube upgrade will improve the transport capacity in Central London , we also believe that Crossrail 2 will be also needed. Once in the West End the increased numbers of people will need to remain mobile. The addition of pedestrian space will result in reduced access for motorised traffic. This is necessary not only because there is not enough space but also due to the harmful air pollution and carbon emissions they cause.

This can be achieved by:

- Congestion Charge and ULEZ: reducing all vehicles in the area.
- Reducing courier/e-fulfilment deliveries: Gnewt Cargo (supported by The Crown Estate) already operate the largest fleet of electric vehicles for this purpose in central London.
- Delivery consolidation: we already operate a retail consolidation delivery scheme which reduces vehicle movements to participating shops by 80% and uses zero tailpipe emission electric lorries (if this were used on a more widespread basis, not only would it reduce the number of lorries and cut emissions to the remaining lorries to zero, it would also reduce the need for the replacement of current fleets on a one-by-one basis.

Pressure on space means that we need to be smarter with how we use valuable road space:-

- This includes better coordination between Utilities on digging up the carriageway.
- Footway space needs to be treated as being as valuable as carriageway space.
- Carriageways that are needed on a weekday to get people to work in buses and bikes can be used for people at the weekend. Our Summer Streets programme, which sees Regent Street closed to traffic every Sunday in July, does this to some extent, but the scheme could be applied across more weekends or for a longer duration.

WATER

We would support the increased application of rainwater and grey water recycling as a way of supporting the management of London's water resource. We include water recycling in all our new developments. Our Development Sustainability Principles (attached as Appendix A) mandate a 40% reduction in water use with a 50% reduction target.

JOBS

Even with an expanding population getting people into jobs remains important. This of course means that there is an increased need for business workspaces, and given the existing importance of the West End to levels of employment in London, much of this space will need to be located here. This will require building to higher densities. Schemes like our Recruit West End initiative, which trains and provides local people for jobs in Westminster, go someway to ensuring employment opportunities benefit all.

ENERGY & CARBON

There will be a need for more energy, particularly electricity as gas becomes increasingly unacceptable on air pollution grounds and as vehicles change from internal combustion to electric.

Whilst the new commercial buildings we are delivering are all BREEAM Excellent, and in the order of 40-50% more efficient than those they replace, they are also substantially larger. As a result the net impact of new developments is likely to be an increase in the overall demand for energy.

However, this is not the end of the story. We have set a target to reduce the carbon intensity of our estate by 50% by 2022, which requires us to target improvements in both new and existing properties. Our initiatives include:

- Maximising energy efficiency of new properties, beyond regulatory requirements
- Including on-site low/zero carbon generation where feasible/appropriate
- Regularly monitoring the consumption of the existing estate and identifying a range of improvement measures, from controls upgrades through to plant replacement and refurbishments
- Energy demand management (whereby some equipment such as air conditioning is tuned off for short periods at demand peaks).

Our experience is that whilst energy and carbon standards (through both Part L of the Building Regulations, and the London Plan) for major projects have increased over recent years, the "performance gap" between theoretical and actual carbon emissions for buildings has widened. There remains very limited incentive within the sector as a whole, to operate commercial buildings efficiently in the UK, especially in London, where utility costs are a tiny fraction of rents.

We are working hard to improve the operating efficiency of both new and existing buildings, in order to meet our target to reduce the carbon intensity of our estate by 50% by 2022.

A policy response to this, including both incentives and mandatory measures both to share building performance data, and to improve operating efficiency would be an important step towards cutting London's emissions in our view.

We would also encourage clarity around weighting of London Plan policies, and how these are tied with borough policies, particularly given the government's recent announcements around Zero-Carbon Homes standards and Allowable Solutions .

Calculating carbon emissions using "static" emissions factors (the accepted approach to policy) ignores the substantial variations in real grid carbon emissions over a 24 hour period. We are investigating the potential for a smarter approach to energy management across our estate and are considering implementing a range of solutions to move energy demand away from peak periods. When done at scale, this type of approach has the potential to make a significant impact both on carbon emissions, and on the resilience of the local energy network. However, there is very little policy in this area, and the commercial case for this kind of investment is very weak.

In summary there are significant opportunities for the GLA to drive significant carbon reduction within London by focusing on areas not well served by current policy, such as operating energy efficiency and smart demand management.

Climate resilience and adaptation is critical. Green infrastructure has a major role to play in this, as well as more 'standard' mitigation measures (reducing carbon emissions from buildings and transport).

The synergies between national and regional/local policies appear to be diverging around energy, and the GLA can play an important role in helping to steer and influence national policy.

With respect to non-domestic buildings and real estate owners, there is national legislation (enforcing various EU directives) that enforces organisations to report on, for example, energy and carbon emissions, and as such the policy landscape can be quite complicated. These include requirements to comply with CRCs, Heat Networks and ESOS, amongst others, which share common objectives aimed at reducing overall carbon emissions. Careful consideration of these should be made to ensure policy cohesion and minimise negative policy interplay, and where appropriate they should be supported at regional and local levels.

GREEN INFRASTRUCTURE

As numbers of people increase and the effects of climate change become more apparent, the diverse benefits of green infrastructure will become increasingly important. London already has significant pockets of green space in the form of parklands and squares – however it is the connection between these spaces that is equally important.

Additional green space of high ecological value is needed to mitigate the decline of key species in London and enhance the biodiversity of the area. This approach is supported by the All

London Green Grid policy framework and the London Biodiversity Action Plan. Our Ecology Masterplan targets the installation of significant areas of ecologically valuable green space across our Regent Street and St James's portfolios. Our "Wild West End" initiative, working with other significant central London property owners, provides a co-ordinated and monitored way of delivering the ALGG objectives in central London.

Views and access to green space have been shown to encourage active lifestyles, and improve the sense of health and wellbeing for local residents, workers and visitors.

In the peak of summer, central London is typically 8 degrees warmer than the surrounding open spaces and parks – green infrastructure networks can significantly improve local microclimate conditions.

Increased burden on our sewer systems can be mitigated through integration of sustainable urban drainage schemes and green infrastructure, acting to attenuate run-off from rainfall events.

Noise and pollution reduces away from main roads – the creation of additional green oasis a locations is important to provide valuable respite from busy West End streets, dissipating visitors and providing areas to dwell.

Other policy that the GLA could consider include:-

- Encourage and incentivise collaboration between government, business and community to create successful urban greening opportunities in the form of green 'oasis' areas in the public realm, green roofs, green walls, street trees and planters, including consideration of appropriate funding mechanisms.
- Encourage and incentivise the continued creation of networks of green spaces, including through the provision of better green linkages between existing green spaces, as promoted by the All London Green Grid policy framework, and demonstrated by the Wild West End partnership initiated by The Crown Estate.
- Value London's mature tree canopies – develop a replacement and enhancement programme to ensure the benefits they provide will continue and be enhanced.
- Set measurable targets for increasing ecologically valuable green infrastructure, and develop mechanisms for sharing good practice and improving design standards.

For more information contact

The Crown Estate: peter.bourne@thecrownestate.co.uk; 020 7851 5213.

Appendix A

Development Sustainability Principles

http://www.thecrownestate.co.uk/media/476284/development-sustainability-principles.pdf

Background notes on The Crown Estate:

- The Crown Estate is an independent commercial business, established by Act of Parliament.
- The Crown Estate's portfolio is one of the most diverse anywhere in the world, including some of the UK's most iconic assets:
    - The entire UK seabed and around 50% of the foreshore.
    - All of Regent Street and much of St James's in central London;
    - A UK top five portfolio of prime regional retail and leisure assets;
    - One of the nation's largest rural land portfolios;
- The Crown Estate is manager of the UK seabed to the 12 nautical mile limit. The business holds the rights to generate electricity from wind, waves and the tides out to 200 nautical miles/the Continental Shelf under the Energy Act 2004; and rights to the transportation and storage of natural gas and carbon dioxide on the continental shelf under the Energy Act 2008
- 100% of its annual profits are returned to the Treasury for the benefit of the public finances.
- Over the last 10 years The Crown Estate has returned over £2.3bn to the Treasury. In the last financial year the value of the business rose to almost £10bn and its returns were £285m.
- Across its diverse portfolio, The Crown Estate's approach remains consistent; driving sustainable returns and growth through an active approach to asset management and long term investment in four key sectors; Central London's West End, prime regional retail, rural land and offshore wind.
- The Crown Estate's history can be traced back to 1066. In the 21st century it is a successful, commercial enterprise, established as a market leader in its key sectors and known for a progressive, sustainable approach that creates long term value, beyond its financial return

September 2015

Environmental Pressures of London's Growth

This is a response from the Environment Agency, Natural England and the Forestry Commission to the London Assembly's Environment Committee's call for views on the environmental pressures of London's growth.

The Environment Agency has a key role in delivering the environmental priorities of central government. Our three main work areas are flood and coastal risk management; water, land and biodiversity and regulated business. We consider the impacts of climate change through our work to manage flood risk and coastal erosion, safeguard water resources and protect the water and wetland environment. We provide advice to local planning authorities to support their local plans and development decisions. We work to balance the water needs of people, businesses, farmers and the environment both now and in the future. We are independent, but we work closely with government to get the best possible results for communities and their environments.

The Forestry commission protects and expands forests and woodlands and increase their value to society and the environment, leading the development and promotion of sustainable forest management.

Natural England is the government's adviser for the natural environment in England, helping to protect England's nature and landscapes for people to enjoy and for the services they provide. We help land managers and farmers protect wildlife and landscapes, provide planning advice and wildlife licences through the planning system, manage programmes that help restore or recreate wildlife habitats and provide evidence to help make decisions affecting the natural environment.

Our view is that the primary environmental pressures of London's Growth include:

- increased demand for water supply, waste water treatment and waste management, modified by possible changes in demand per capita,
- managing the impact of more frequent extreme weather events, particularly surface water flooding and climate change,
- changes in land management may reduce the benefits people gain from London's ecosystems,
- increasing competition for available land, reflected in increasing land values, shaping the choices of developers and planning authorities and discouraging the

provision of environmental infrastructure or the space for future infrastructure such as tidal flood defences.

Any negative impacts related to growth, may not be isolated to London alone and the potential negative environmental impacts of growth on surrounding areas should be explored.

The evidence base of the existing London Plan captures the current trends affecting the above factors, although projections will be subject to a degree of uncertainty.

The London Plan contains policies which are reasonable, robust and that address most environmental issues within Defra's priorities. Subsequent iterations of the plan could be better informed by monitoring the extent to which those policies are actually delivered through development.

It is important that London continues to progress its work on adapting to extreme weather events and climate change, in line with the recommendations from 'Climate Change – A Risk Assessment', forthcoming research from the Adaptation Sub-Comittee and national guidance, such as UKCP09[1]. These include investigating plausible worst case scenarios for both short and long term events, considering the full range of probabilities using the best available information and assessing systemic risks as well as direct risks.

Although growth gives rise to additional environmental pressures, it can also provide opportunities and resources to deliver environmental improvements. This includes opportunities to clean up a lot of London's contaminated land, recognised by the Mayor by the creation of the London Land Commission. We feel that the Mayor's Infrastructure Delivery Plan, the formation of the Infrastructure Delivery Board and the Environment Agency's inclusion on this board, demonstrates a commitment to integrating environmental concerns into strategies which accommodate population and employment growth.

We have set out some more detailed points below;

Water

There are several potentially significant impacts of growth on the water environment.

There will be an increased demand for potable water and for sewage treatment capacity in London and the wider south east, where the water available for abstraction for public supply is already heavily exploited. Forecast population increases and anticipated changes in climate means that there is likely to be a significant deficit (of 414 Ml/d) in Thames Water's London supply zone by 2040. Anticipated changes in rainfall patterns pose an increasing risk of drought. In the medium to long term, supply initiatives such as effluent re-use, could reduce the quantity of treated effluent discharged back into non-tidal rivers, exacerbating low flow and pollution problems. For example, the current Thames Water

[1] Climate Change – A Risk Assessment – David King, Daniel Schrag, Zhou Dadi. Qi Ye and Arunabha Ghosh http://www.csap.cam.ac.uk/projects/climate-change-risk-assessment/

effluent discharge from Deephams sewage treatment works contributes 49% of the flow in the downstream section of the River Lee in average flow conditions, and 72% in low flow conditions.

Under the EU Water Framework Directive (WFD) all inland, estuarial and coastal waters must aim to achieve 'good ecological status' by 2015. None of London's water bodies have achieved this status. Eight are of poor status, two are bad and the others are moderate.

There are many reasons why good status has not been achieved so far, but diffuse urban and transport related pollution are significant factors. London's projected growth could exacerbate these factors through increased transport demand and an increase in the amount of hard surface run off.

The Water industry has statutory five year and twenty five year plans for water supply and statutory five year plans for wastewater. However the current economic regulatory framework discourages the early investment required to provide additional capacity in time for longer term population growth issues. Delivery of these plans is monitored through an annual review by the Environment Agency and OFWAT. Each water supply company has a Drought Management Plan, agreed with the Environment Agency, setting out how periods of drought will be addressed. The Water Resources in the South East group, brings together water companies across the south east, along with the Environment Agency, OFWAT, Consumer Council for Water and Defra. The aim of this group is to develop a broader water resource strategy, with a range of options to help individual water companies deliver water infrastructure more effectively and efficiently, through their five and twenty five year plans.

Managing Flood Risk

It is estimated that over 1.25 million residents are currently at risk from flooding in London. An increase in people living and working in London will lead to a rise in the number exposed to the risk of flooding from all sources (tidal, river, surface water, groundwater and sewer). However development also provides an opportunity to improve the resilience of London to flooding and reduce flood risk. The manner in which development is delivered will be critical in helping to mitigate these risks.

For example during the development of the Queen Elizabeth Olympic Park new defences and flood alleviation measures were completed which reduced risk to site and reduced flood risk to approximately 4,000 properties off-site. This resulted in a sustainable drainage network for the whole park, particularly in the Parkland and Public Realm areas where SuDS will be utilised. In addition in those parts of the park where surface water flooding is expected, it is directed away from buildings into areas where it can pond without flowing off-site

The main source of flood risk in London is from surface water, with approximately 66,000 properties at high risk, compared to 14,000 at high risk (a more than 1 in 30 chance of

being flooded in any year) fluvial or tidal flooding. This is an important consideration for development projects, as securing government funding for infrastructure measures to manage this risk will rely on financial contributions from partners and beneficiaries.

The Mayor's Water Strategy sets out key priorities for London. The drainage hierarchy within the London Plan provides an appropriate structure to developers to address surface water issues, whilst the Sustainable Drainage Action Plan will put in place a sectoral approach to its wider delivery. All boroughs have Surface Water Management Plans and these plans are starting to lead to capital flood risk projects being scoped and delivered. In time, these plans will be superseded by statutory Local Flood Risk Management Strategies.

Managing surface water flood risk and flooding is the responsibility of Lead Local Flood Authorities, however the Environment Agency has a strategic overview for all sources of flood risk and work with the Regional Flood and Coastal Committee, partners, riparian owners and local communities to manage this risk. Partnership working is, and will remain, essential to managing flood risk in London. We need to establish effective partnerships that have the capacity and capability to deliver schemes that will benefit both communities and the environment. In addition to this, Catchment Flood Management plans provide an established framework to address tidal and fluvial flood risk and the soon to be released Flood Risk Management Plans will incorporate measures to tackle other sources of flood risk. Our priorities in London are to:

- maintain and renew existing assets
- build new assets where needed and justified
- prepare for and manage the implications of a changing climate.

The Environment Agency's Thames Estuary 2100 (TE2100) plan is a long term plan for managing tidal flood risk across the Thames estuary, from now until the end of the century. It is the first major flood risk project to have put climate change adaptation at it's core and is internationally recognised as a leading example of this. The plan is based on current guidance on climate change, but is adaptable to changes in predictions for sea level rise. If sea levels are found to be rising faster than currently predicted, the plan will indicate what changes to the actions will be required to counter this and when they will need to be implemented.

The key recommendations of the plan are covered over three time periods from 2010 to 2100. These recommendations include; maintaining current flood defences; safeguarding land for future flood defences; raising, refurbishing and replacing defences; reshaping and enhancing the riverside environment and planning for "end of century" options, which may include construction of a new Thames Barrier.

The Environment Agency is working closely with boroughs to make sure that those at risk from tidal flooding understand the importance of implementing the recommendations of the

TE2100 plan into their local plans. To help with this, bespoke guidance, specific to each borough, has been produced by the Environment Agency and shared with boroughs.

Green Infrastructure

Appropriately planned and delivered development could contribute significant functional green infrastructure. This could be delivered through a combination of new infrastructure, improved connectivity or improving the functionality of existing infrastructure, by helping to minimise the risks of flooding and adverse impacts on water quality. Much of London's existing green infrastructure fails to deliver all the potential multiple benefits of which it is capable. High land values may act as a barrier to achieving the multiple benefits of green infrastructure if the value of those benefits are not recognised through the planning system. A failure to secure adequate long term provision could limit options to cost effectively tackle issues such as flooding, urban heat island effects and high quality public realm. Poorly delivered development may degrade the nature, connectivity and functionality of London's existing green infrastructure.

Private gardens provide a regular contact with nature for many people and form a pleasant component of residential areas. A single garden may provide habitat for a range of plants and wildlife and collectively they are an important resource for conserving species.

A 2011 study, 'London; A Garden City?' produced through a partnership project between Greenspace Information for Greater London (GiGL), London Wildlife Trust and the GLA shows that between 1998-99 and 2006-08:

- the area of vegetated garden land declined by 12%, a loss of 3,000 ha
- the amount of hard surfacing in London's gardens increased by 26% or 2,600 ha
- the area of garden buildings (sheds etc.) increased by 55% or 1,000 ha
- the amount of garden lawn decreased by 16% or 2,200 ha.

The over 1,500 Sites of Importance for Nature Conservation (SINCs) covering some 19% of London, is an important element to existing green infrastructure, providing a wide range of environmental services and a home for wildlife. They often help to define a place and its landscape character and as such, are highly valued by those that live near to them and benefit from them. Increasing growth places these areas at risk in terms of the recognised benefits they provide and the associated areas sense of place.

There is an opportunity to capture the imagination and build an understanding of the value and purpose of green infrastructure to the communities of London and the Greater London National Park City concept might be an opportunity to build that public engagement.

The significant planned levels of growth aligned with projected changes in climate are likely to have a negative impact on London's trees, through increased levels of pestilence and disease. Consideration needs to be given to the future species mix and replacement

of mature trees with younger saplings, and how this would impact greenspaces and streetscape.

There are relevant policies to address these issues in the London Plan, the All London Green Grid Strategic Planning Guidance and the borough's Open Space Strategies. However the degree to which these have underpinned the role of green infrastructure, as a necessary component, delivering a range of beneficial services, is unclear. Delivering the climate change adaptation benefits of green infrastructure should be a specific objective of the planning system. There is a lack of strategic co-ordination on this issue across London. We hope that this will be addressed through the work of the Mayor's Green Infrastructure Task force and that this will be a specific commitment of the new Mayor.

The opportunities to improve both the amount and functionality of green infrastructure, through retrofitting, associated with other infrastructure maintenance, refurbishment or wider regeneration and redevelopment programmes, should be identified and evaluated. There is a risk of missing opportunities to improve the value of green infrastructure in the development process, by restricting green infrastructure interventions to what lies within the development's boundaries and ignoring the scope to improve the site's connectivity into the wider green infrastructure network.

We support and are active members of the Mayor's Green Infrastructure Task Force and hope that its final recommendations will be implemented and improve the strategic delivery of green infrastructure across the capital.

There is scope for transport planning and transport assets to significantly enhance the delivery of green infrastructure.

Green infrastructure should be factored into decisions on housing densities and urban structure. This should ideally be done before land or development options are agreed, and before master planning, as it influences land value. Developers need to know what their obligations are, prior to completing land purchases, so they can factor these into the price they offer the landowner.

Future planning policy should ensure that green infrastructure is put on a par and fully integrated with the provision of other infrastructure, such as transport, energy and water supply. Strategically planned green infrastructure can contribute significantly to the delivery of other forms of infrastructure and services.

Retrofitting - Energy

One of the most significant impacts of London's growth is the effects of increasing energy demand. Waste management systems can play a major role in reducing the impact of these, including helping to reduce London's overall carbon footprint.

Wider adoption of anaerobic digestion for managing food waste could provide both a renewable energy supply and play a role in increasing London's recycling rate, which has

stalled at around 43% in the last few years. The Welsh government estimates that their food waste anaerobic digestion programme, has added as much as 5% to their overall recycling rate. Currently only around half of London's boroughs collect food waste from households.

As a part of the overall energy strategy for London, increasing the use of energy from waste could help to reduce London's carbon footprint. This could be achieved by incorporating district heating networks around waste treatment facilities, an example of which has recently been installed at the SELCHP (South East London Combined Heat and Power) plant in south east London. Wider encouragement of this approach would help to guarantee London's energy supply and potentially reduce its overall environmental impact.

The Mayor has set standards for individual and communal gas boilers, solid biomass boilers, and combined Heat and Power (CHP) plants, implemented through the London Plan and Strategic Planning Guidance. These standards will need to be enforced correctly by planning authorities and may need tightening to properly mitigate air pollution impacts from energy schemes incorporating them.

The provision of Energy from Waste infrastructure, and waste management infrastructure in general, can be hampered by the lack of affordable industrial development sites and the perception of its impact on surrounding communities. Greater development densities will bring both new and existing facilities closer to residents. Planning policy should therefore ensure that these facilities are designed, built and operated to high standards, to minimise their amenity impacts, whilst providing an effective and necessary service.

Air Quality

Air quality has improved over the last decades however the levels of PM_{10} and NO_2 are not reducing as quickly as anticipated. This is recognised as a priority for the Mayor which we welcome. The vast majority of air quality problems in London are caused by emissions that the Environment Agency does not regulate: i.e. traffic. Those we do regulate comprise of 2.8% of PM10, 5% of PM2.5, and 7% of the NOx total and these emissions are well controlled through Environmental Permitting Regulation permits. A consequence of growth is the increase in developments close to sources of air pollution.

Estimated growth in London will further impact air quality, unless air quality, including cumulative impacts, is properly addressed and managed through the planning system. These impacts will be the result of both the developments' associated emissions and the increasing proximity of sensitive receptors close to pollution sources. The Mayor's policy of "Air Quality Neutral" addresses this issue by limiting emissions from developments and associated transport, however, this policy may need strengthening.

London Assembly Environment Committee

Environmental pressures of London's growth

Written evidence submitted by the Environmental Services Association

The Environmental Services Association (ESA) is the trade body representing the UK's waste and secondary resource industry, which is leading the transformation of how the UK's waste is managed. An industry with an annual turnover of £11billion, our Members have helped England's recycling rate quintuple in the last decade and provide almost a sixth of the UK's renewable electricity.

- Waste management experiences increased pressure as London's population grows for a variety of reasons
- The Committee should look into how it can increase recycling rates in high density housing
- Greater collaboration and cooperation between boroughs and waste disposal authorities in London would increase efficiency

<u>What do you see as the most significant environmental impacts and implications of London's growth over the coming decades?</u>

1. Waste management is integral to responding to London's environmental demands, and is coming under increasing pressure as London's population grows. It should therefore be carefully considered by the Committee alongside energy, water and green spaces.

2. London struggles with environmental performance in managing its waste for a variety of reasons:

    - Firstly, London's demographics contribute to low recycling rates compared to the rest of the country. A high proportion of transient people as well as non-native English speakers and high levels of deprivation in some boroughs make communication of local waste and recycling services challenging. The large number of flats and multi-occupancy properties also creates difficulties, not least in terms of space for containers and contamination in communal bins.

    - Secondly, a lack of available garden waste in the inner city contributes to London's low recycling levels compared to rural regions.

    - Thirdly, high land costs and low land availability hinder London's ability to meet its waste infrastructure needs, for example by building new energy from waste and material processing plants.

- Fourthly, urban areas have higher levels of on the go consumption, with recyclable waste ending up in public waste bins or as litter. Public recycling bins also tend to be highly contaminated with non recyclable waste.

- Finally, high levels of congestion lead to increased costs of transporting waste out of London.

3. These factors add up to make London's recycling and composting rates amongst the lowest in England. As the population of London goes up, there will be upward pressure on waste generation and these factors will only become more problematic.

<u>How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?</u>

4. The Mayor has a strategy for managing London's municipal waste and is committed to developing a circular economy where the recovery of materials and energy from London's waste is maximised. ESA has participated in discussions with the London Waste and Recycling Board (LWARB) and the GLA about how to bring about a more circular economy as part of London's Infrastructure Plan 2050 and we encourage the London Assembly to take those discussions into account.

5. London can do more to ensure that it considers waste management needs as part of housing and planning projects. ESA contributed to new guidance on waste and recycling for new build flats produced by LWARB and LEDNET, which should be considered by flat developers.

<u>How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?</u>

6. There is unfortunately a lack of policy and processes at a national level to manage the waste management needs going forward. Therefore, the transition to a more circular economy to a large extent relies on effective EU policy being proposed by the European Commission as part of its "Circular Economy package", which among other things is reviewing the EU's recycling targets.

7. There are tensions between extending service provisions, for example to food waste collections, and further cuts to local authority budgets.

<u>What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?</u>

8. The idea of bringing more consistency to waste collections is gathering momentum in England and is currently being explored by Defra. London should explore where greater collaboration within local authorities or waste partnerships can bring efficiencies and economies of scale when contracting or selling material, not least for smaller waste streams such as medical waste.

9. Greater consistency in communications to residents is also particularly relevant for London given that many people move between boroughs.

10. In addition, given London's large hospitality sector, more focus could be given to capturing food waste from this sector.

11. London should also review best practices across the UK when it comes to capturing recyclable waste from public waste bins.

What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

12. As outlined previously, London faces significant challenges in managing its waste and therefore in moving towards a circular economy and playing its part to mitigate climate change.

13. However, it is committed to do the right thing. The ESA calls on the Committee to investigate how the issues outlined above can be reconciled.

14. The ESA recommends building on the work done by the London Waste and Recycling Board and WRAP in addressing recycling rates in high density housing.

15. The Committee should also encourage greater collaboration and cooperation between boroughs and waste disposal authorities in London with a view to making better use of infrastructure and logistics between boroughs.

Mr Williamson

Having reviewed the London Assembly Environment Committee agenda and targets I write to provide comment in support of your investigation.

I represent Extreme Low Energy Ltd (ELe) established in 2014 as a specialist manufacturer and supplier of low energy infrastructure products, recently named as the Most Innovative Small Business in Britain.

At ELe we believe energy supply, demand and distribution is an area with significant environmental impact. Therefore we present a new idea / approach for addressing this issue.

ELe does 4 things:

1. GENERATES POWER – solar, wind etc

2. STORES POWER – to use the power when needed (either from the grid at low peak times or from the power generated by renewable sources)

3. DISTRIBUTES POWER – because very low DC voltage Data and power distributed through existing Ethernet (Cat 5/6) cable

4. Low Energy DEVICES – that run at 20% of the power of standard kit – faster and generate no heat / noise

We provide the infrastructure to operate either partially or fully off-grid. In an attempt to combat a long running global problem in unsustainable energy consumption one of our key objectives is building a strong reputable business that reduces the running costs and carbon footprints of our clients.

AC electricity available from the grid needs to be converted to DC before it can be used in most appliances. The ELe solution works by providing an end to end DC solution. In an off-grid solution, the energy generated and harnessed will be completely DC. The energy stays DC all throughout the circuit, with no conversions necessary. No inverters and no conversions, essentially translates directly into no energy loss, no heat so no waste. The impacts of this are phenomenal. Tests have shown up to 90% reductions in energy consumption compared to normal computer energy usage.

Our proposition is simple with plentiful applications. Our patent-pending infrastructure provides a complete solution to revolutionise the way many modern day gadgets and appliances are powered.

The most straightforward and easiest to understand application for our infrastructure is computing. Computing is only one of the many applications for our infrastructure. Energy efficiency is seldom considered when computing is concerned. The focus is performance – more processing, more often the better is the view. However, high performance comes at a cost to the environment. Taking education as an example, it has been reported that schools across the UK spend just under £400 million on energy every year accounting for nearly 15% of public sector carbon emissions.The main areas of concern are heating, catering, lighting and more recently computing. Computing and other visual equipment are major energy consumers using around 20% of a schools total energy. The growing adoption of cloud computing uses 2% of the global power, The National Data Center Energy Efficiency Information Program's factsheet states that the amount of energy consumed by data centres is set to continue to grow by 12% per year. In the last 5 years, data centres have been built at a high rate. While they are, indeed, much more energy efficient, they all consume huge amounts of power. With our solution, implementation on a wide scale such as a schools, datacentres and businesses, can bring substantial benefits, whilst still ensuring the full, media-rich computing experience of standard equipment.

In most cases we can generate energy savings of between 75 and 100 watts per hour per unit - think how many computers are operated at least 8 hours per day in businesses across London. When you look at the bigger picture and multiply the savings the impact is significant. The ELe infrastructure can also be used for lighting, servers etc etc - the possibilities and savings are endless.

ELe solutions can be utilised in a retrofit situation providing a secure and reliable energy supply without significant investment in infrastructure, we would simply utilise existing Ethernet cabling.

ELe solutions can also be specified and included within new building projects. If included as part of the building specification the ELe infrastructure can also reduce the need for electricity sockets reducing build costs. Additionally due to the minimal heat generated through the infrastructure and devices the need for air conditioning is significantly reduced. The space needed for cooling systems and infrastructure is therefore greater reduced allowing for more usable square footage. As you look to build and house 850,000 additional jobs this could be a fantastic solution to help support the environmental agenda.

The ELe infrastructure could easily fall within the RE:FIT program not only supporting carbon reduction but also reducing public spend on energy. The significant reduction in heat and noise generated (no fans or moving parts and no need to convert power so both pretty negligible) also creates a much pleasanter work environment supporting employee motivation, productivity and reducing employee turnover.

ELe is a small and relatively new business, however the team are really passionate about what we do and genuinely believe there are significant energy savings to be made by using the infrastructure and technologies we have developed. We would welcome the opportunity to demonstrate our products and services and discuss the potential energy savings further.

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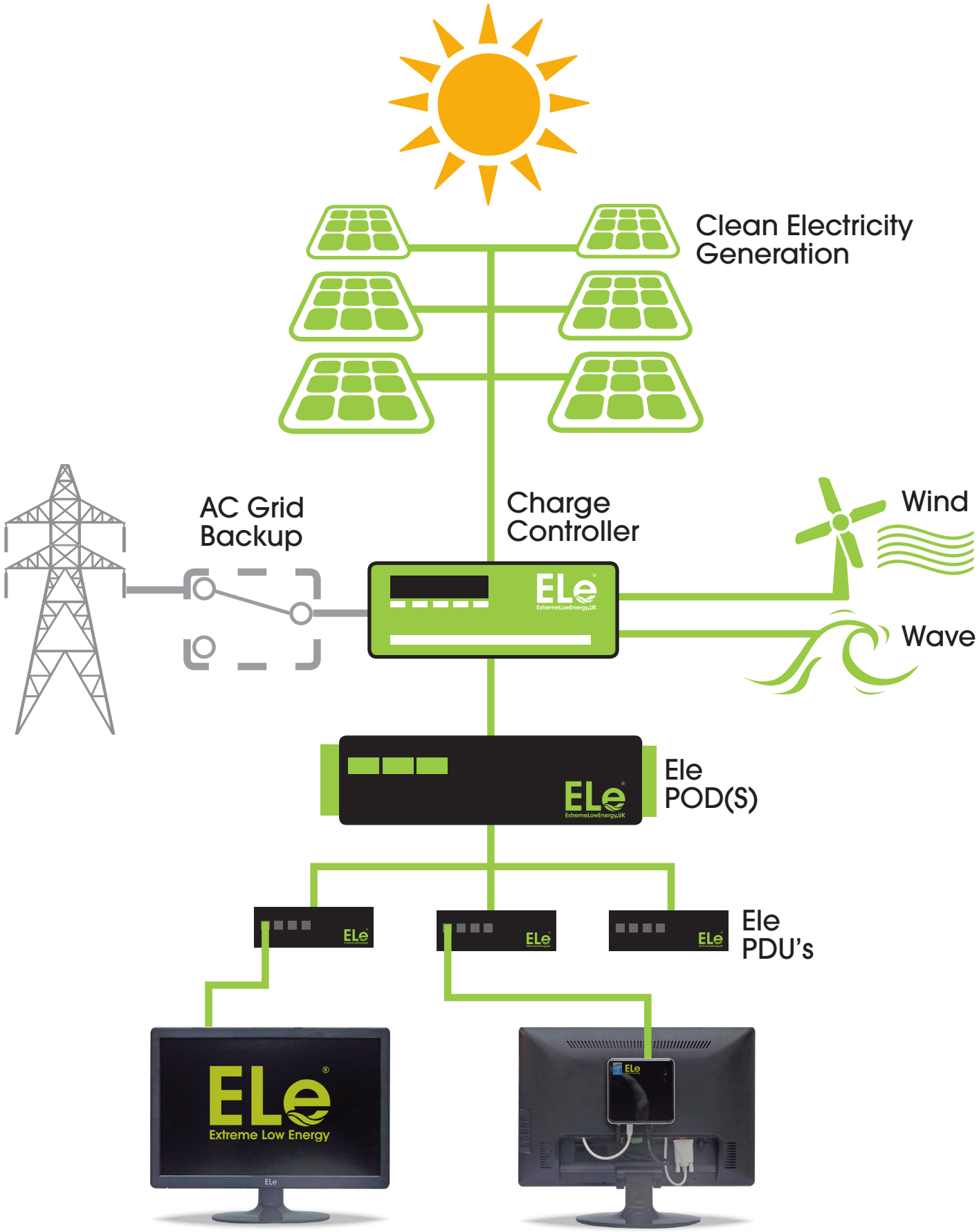
Kind Regards

Caroline Clayton


Clean Electricity Generation
AC Grid Backup
Charge Controller
Wind
Wave
Ele POD(S)
Ele PDU's
Extreme Low Energy

FTA response to London Assembly Environment Committee – Environmental pressures of London's growth

About FTA

The Freight Transport Association (FTA) is one of Britain's largest trade associations, and uniquely provides a voice for the whole of the UK's logistics sector. FTA's 14,000 members operate over 200,000 HGVs - almost half the UK fleet - and some 1,000,000 liveried vans.

Freight is vital to our society every day. It is how our food reaches supermarkets, our clothes reach shops, our medicines reach hospitals, our packages reach our houses and how our waste is taken away. Anything that adds costs to logistics adds to the cost of living in the UK.

FTA has three specific objectives for the UK's supply chain: to make it safe, efficient and sustainable. Utilising alternative fuels in transport is a key part of the third of those points, and a potential contributor to the second. Around 80 per cent of freight is moved by road, and 80 per cent of that of that is moved by HGVs, so improving emissions from HGVs is essential to meeting environmental objectives in London.

FTA manages the Logistics Carbon Reduction Scheme (LCRS), a voluntary initiative to record, report and reduce carbon emissions from freight transport. The LCRS has over 110 members accounting for over 77,000 commercial vehicles and is endorsed by the Department for Transport.

In brief: Transport and future energy demand in London

- One of the most significant environmental impacts that should be considered over the coming decades for London is the rise of electric vehicles to reduce carbon emissions and air pollutants. This will increase demand for electricity to power these vehicles.
- Transport for London's Ultra Low Emission Vehicle Delivery Plan aims to speed up the deployment of ULEVs covering such vehicles as battery electric. The current Mayor has the aspiration for London to be the ULEV capital of Europe. This mirrors the UK's general position of nearly every car being electric or ultra low emission by 2050. The reduction in fossil fuels will be overtaken by a requirement for chargepoints and electricity to power pure electric vehicles.
- In particular, the pressure for commercial vehicle fleets to become ultra low emission in city centres also means further demands for electricity.
- Electric commercial fleets will require suitable charging infrastructure, including adequate supply of electricity to their sites, in order for electric vehicles to be utilised as soon as is technically feasible - this is already an issue holding back the use of electric fleets in some cases.

Further Observations

Carbon reduction

Utilising alternatives to diesel such as electric, natural gas (either as compressed natural gas or liquefied natural gas) and, ultimately, biomethane allows for substantially reduced emissions (both carbon and air pollutants) especially for heavier commercial vehicles. Dedicated gas vehicles will offer the best carbon reductions so London will need to invest and plan for the installation of refuelling gas infrastructure to support a switch away from fossil fuels for commercial vehicles. Government is now providing support for the further development of gas refuelling infrastructure through the Office of Low Emission Vehicles, but uptake would benefit from increased support in the future. London Boroughs can also explore supporting the development of such facilities as a way of encouraging take-up in the local area. For example in London Camden Council provides a compressed biomethane refuelling station at Kings Cross. Local authorities could also explore incentives such as increased flexibility on loading/unloading to encourage operators to take up such technology.

Operators that are already utilising electric vehicles may wish to expand their fleets but this requires an increase in electrical power capacity. Currently, this is unfeasible as the financial responsibility for increasing power supply to a depot has to be borne by the fleet operator which is a showstopper.

In the future if London is serious about electrification as a means of addressing environmental impacts, then support will be required to not only cover the costs of power infrastructure upgrades but also ensure demand can be met.

Government should fund electricity sub-station developments required to make electric vehicle stations workable and to enable operators to run much larger electric vehicle fleets.

Air quality

A further significant environmental impact on London's growth is the issue of air quality. An increase in population will result in increased transport and in turn a need for goods and services. In 2013, London was the only area in the UK reporting exceedances of the hourly mean limit value of nitrogen dioxide. The existing London Low Emission Zone which was originally set in 2008 only required higher Euro standards for commercial vehicles and buses/coaches but failed to include cars. EU standards have been addressing emissions from HGVs successfully – exhaust emissions have reduced and will reduce substantially in years ahead. In order for air quality to be improved, new approaches should focus on the local and specific issues, and ensure that **all** sources that contribute to background levels of air pollutants are addressed. The London Ultra Low Emission Zone (ULEZ) to be introduced from 2020 will seek to reduce air pollutants by requiring all diesel vehicles including hgvs, vans, buses and cars to be Euro 6/VI or face a daily fee. Petrol vehicles will have to meet Euro 4 or better.

Generally, Low Emission Zones are expensive and cumbersome to operate, other measures should also be considered by London to improve air quality as listed below:

- **Support uptake of Euro VI vehicles now**

Once Euro VI vehicles populate the fleet exhaust emissions will be massively reduced. To bring forward the benefits of this, London could offer a scrappage scheme for older vehicles in favour of Euro VIs – or other form of fiscal incentive for utilising newer vehicles. Any scrappage scheme should be open to all pre-Euro VI vehicles so that relatively clean Euro IV and V vehicles enter the second hand market where they will naturally displace even older vehicles. This would also ensure that those who have invested in recent years are not penalised.

The Mayor could immediately improve the city's air quality by offering incentives such as discounted congestion charging to freight operators using Euro VI vehicles. The Alternative Fuel Discount, a previous incentive, was scrapped in 2010 and since then the only discounts available on the Congestion Charge are for cleaner cars. There are no incentives to encourage investment in cleaner commercial vehicles. The right incentives could mean that fleets move their newest and cleanest vehicles to the capital, giving those living and working in Central London some of the benefits of ULEZ straight away.

- **Reduce urban congestion in total**

The most intractable problem for urban transport is congestion which has a direct effect on emissions. Substantially more emissions are produced when traffic is stop-start and slow moving compared to consistently flowing traffic. Ways need to be found to ensure congested road space is given over to the most efficient or essential uses of that road. Those who can most easily switch to another mode/time of journey should be encouraged to do so. It should be noted there is no public transport alternative for freight deliveries.

To pursue this, road space should be prioritised for essential users, such as buses, tradespeople, disabled drivers and freight. This could be in the form of Essential User lanes or focusing road charging schemes on those who have alternatives, but several of the other measures recommended here would contribute to this goal.

- **Improve traffic flow in key areas**

London needs to take action to smooth traffic flow in pollution hot spots – which can often be very localised. Reducing the incidence of congestion and traffic jams in specific poor air quality streets would allow HDVs (buses as well as HGVs) to use higher, more efficient, gears (reducing engine emissions), and reduce braking and tyre wear, two other sources of particulate emissions.

- **Enable deliveries outside of periods of peak traffic demand**

Businesses want to explore opportunities to serve premises at times away from peak traffic demand. Whilst there is a natural business imperative to have facilities stocked at the start of the working day (so there are items available to buy in a shop when it opens, supplies required in an office as staff arrive, etc) there is an opportunity to carry out some deliveries outside rush hour.

Out of hours deliveries offer a way to achieve this. What is required is a targeted lifting of delivery restrictions by Boroughs supported by freight operator actions such as investing in quiet delivery equipment (such as reversing alarms and roll cages), adjusting loading / unloading procedures and ensuring staff stick to low-noise working practices.

The real advantage for air quality is that by moving when the roads are quieter the vehicles can travel at a more constant pace, avoiding constant deceleration/acceleration, and at a speed that makes use of higher (more fuel efficient) gears possible.

- **Consolidation centres**

Centres such as London's Regent Street have potential benefits. Partly this can come through replacing multiple journeys by smaller vehicles with one consolidated load (as per the load efficient freight point above). Schemes such as these should be supported through the planning system and provided with financial support to become viable.

However it should be noted that these are not a panacea for emissions issues. Consolidation centres are primarily appropriate for clustered delivery customers (where one delivery bay can serve all recipients) such as shopping malls or construction sites. Also many larger companies (eg retailers) already operate consolidation through serving strings of stores with one vehicle. Specialist logistics companies also effectively provide this service to customers who do not have full loads to transport.

- **Support load efficient vehicles**

There is a common misconception that larger HGVs must be a bad thing. The reality is that what matters is the performance per load (eg per kilogram or tonne of freight moved) not the performance of one large HGV verses one van. Moving freight collectively in the largest feasible vehicle produces the lowest emissions per tonne performance. To this end London should support the use of the largest appropriate vehicles and not support restrictions on HGV size (or weight). Multiple vans or smaller HGVs replacing larger HGVs could have adverse effects on pollution, as well as increase congestion and have negative safety implications for vulnerable road users.

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18 September 2015

GLA Environment Review
Questions seeking written views and information
Responses by Friends of the River Crane Environment (FORCE)
September 2015

Friends of the River Crane Environment is a charity, founded in 2003, with over 500 members and a remit to preserve and enhance the community and environmental value of the River Crane corridor www.force.org.uk . The River Crane provides a 30km green corridor through west London, running through five London boroughs and managed by the Crane valley partnership www.cranevalley.org.uk . CVP has around 30 members including the GLA and all of the five boroughs. It is considered to be an environmental and community asset of London wide importance – albeit its value is currently far from optimised.

1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:
a. Energy supply, demand and distribution

Not relevant to our objects

b. Water management (water demand, water supply, waste water management, and managing rainwater and flood risk)

Those matters that are relevant to our objects are also covered in (c) below

c. Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats, etc.)

This issue is very relevant to our core purpose which is to – protect and enhance the environmental and community value of the River Crane corridor

If you could provide or point to specific evidence or evaluations that would be very helpful. Views and information about pressures and impacts varying across London, or in specific parts of London, are welcomed.

The needs and requirements of the Crane valley have been addressed in the Crane catchment plan and the ALGG Area 10 report. The valley has considerable value and much greater potential as a green asset – from an environmental, community and green transport perspective for example. This value is being developed by the CV Partnership with support from the GLA's Big Green Fund and TfL cycle funding for example. There are though considerable pressures due to:

- *Development and urbanisation pressures – FORCE has been liaising on around 20 major development proposals within or adjacent to the River Crane corridor over the last five years. This trend is likely to continue and grow*
- *Pollution – including both pollution events and chronic pollution problems. The Crane has suffered two major pollution events in the last five years that have effectively wiped out the ecological value of the lower part of the river (below the pollution inflow point). It is also subject to around a dozen more minor events every year and chronic background pollution from misconnections and urban road run-off for example. Under these circumstances it is remarkable that the river continues to function and that fish, kingfishers etc have returned to it over the last 12 months*

- *Local government funding reductions – the management and protection of these linked green spaces rely critically upon local authority actions. In recent years the setting up of the CVP has allowed LA's to appreciate more fully how the River Crane system operates across borough boundaries and to work together to protect and enhance its value. However, given this work is largely non-statutory in nature, it is particularly vulnerable to funding reductions and the value being lost.*

The CVP is seen as a valuable structure by all participants and some funding has been provided to support the core needs of the organisation. This is though not really sufficient to do much more than hold the fort at present and it would benefit from being put on a more sustainable long term footing so as to help deliver on the potential of this major green asset.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

The plans and policies have been helpful. We do have a major concern about the policies around brown field sites and how brown field is defined. In an urban context virtually all green space can be classified as "brown field" given that at some time in its history it has been developed for some purpose – and some of the most valuable and highest potential parts of the capital (from a green infrastructure perspective) are also seen by many as brown field land.

The developing strategy for green infrastructure is welcomed. From our own experience we know that many parts of green infrastructure that have a dormant community value (and less than optimised environmental value) are not recognised as such by developers and councils. We believe that as Londoners use local green spaces more their importance and value will grow. However, that very growth in use and importance will risk compromising their value unless these spaces are better linked to each other and more spaces can be saved before it is too late.

The London Ecology Unit produced excellent reviews of green assets at a LA level and there was a considerable amount of regional and local designations undertaken at the same time. This process has not been revisited in any substantive way since.

The London Regional BAPs and many local BAPS performed a similar function ten years ago – and again have not been sustained in the medium term.

London has great need of something at a regional level that brings together and builds upon these works – and is able to recognise and optimise the value of the capital's green assets.

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

Again local authorities often have good policies in place on green assets – however, they are not always implemented. LA environment staff are over stretched and do not either see (or have the time to respond to) the opportunities for improvement and enhancement that are available. The same can be said for the Environment Agency.

The emerging catchment partnerships may provide a means of co-ordinating the activities of all the interested parties, including LA's, national and regional agencies and the third sector.

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

If you could provide or point to specific documents setting out these ideas or approaches this would again be very helpful.

There is scope for strengthening the role of the partnerships such as CVP that already exist. It is not clear to FORCE what the most effective structures might be for operating such partnerships – but the example of CVP shows they can be very effective in generating plans, projects and funding with very little funding support. There are a number of different models already operating in London and it would be very helpful to review and appraise these. This may well be something which is already being done by DEFRA in regards the catchment based approach.

FORCE considers the ALGG to be an extremely valuable baseline structure – which now needs funding and teeth to be more effective on the ground.

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades?

Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

Identify the best means of providing green infrastructure support at a London wide level and then fund it in line with its value to the capital. Often the policies are in place but the actions on the ground do not deliver them – largely because there are not the people nor effective levers to do so.

Strengthen the ALGG partnerships and consider the most effective structures for delivery – potentially link these with the emerging "catchment based approach" coming out of DEFRA.

Do not lose all the good works done through the LEU and BAP groups – find a means of capturing and storing these data and providing them as a baseline to be built upon

Review the definition and value of brown field sites. In relation to community and environment – considering both actual current value and potential future value.

Explore means by which the environmental value of the capital can be protected and enhanced as the population grows. What mechanisms can be utilised to co-ordinate activities, disseminate and replicate good practice and bring in funding – particularly for resources that cross borough boundaries.

Promote the masterplanning approach to green infrastructure so that it is recognised and its value optimised in the planning process. Ensure that new development has an obligation to provide net improvements to the environmental and community value of surrounding local open spaces – in line with the green infrastructure masterplan.

Promote more effective collaboration between the key parties in identifying, prosecuting and publicising pollution problems that effect green spaces

Environmental Pressures on London's Growth
Institution of Civil Engineers (ICE)
Consultation Response

ICE London agrees that there are several serious environmental factors that pose a threat to London's growth and is pleased that the London Assembly Environment Committee will be exploring these issues and setting an agenda for the incoming Mayor.

To deal with these pressures there needs to be a sea-change in London's approach to resource management and climate change. Infrastructure improvements are required to increase the provision of resources, but crucially, resources must be consumed more efficiently if London's population is to grow. This is particularly vital in the energy and water sectors, where demand is predicted to overtake supply over the coming decades.

ICE London looks forward to working with the Environment Committee over the coming year and after the 2016 elections to find solutions to these pressing issues.

1) **What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:**

    a. **Energy supply, demand and distribution**

    b. **Water management (water demand, water supply, waste water management and managing rainwater and flood risk)**

    c. **Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats etc.)**

London's growth will have a fundamental effect on the environment and resources over the coming decade, with energy, water and land predicted to become scarcer. The crucial dilemma is how to manage a city with less water, energy and space whilst maintaining the standard of living that has made the capital such an attractive destination to residents, visitors and businesses.

a. **Energy:** Shortages in energy supply pose a risk to London's future expansion. A growing population, increasing per capita demand, climate change and resumed economic growth are leading to an increase in the amount of energy London consumes. The effects on Londoners will be further increase in energy bills and possible power outages.

    In July 2015, National Grid reported that they paid £36 million to increase capacity to a margin of 5.1%, an increase from 1.2% before the purchase and adding an extra 50p onto the price of the average energy customer[1]. The low level of capacity brings the capital dangerously close to power outages, which could affect the productivity of London, and in the case of a serious incident, cost lives. Greater variations in weather will exacerbate the problem, as National Grid will have to deal with an increased likelihood of heatwaves during the summer.

[1] Britain facing winter of blackouts as National Grid warns of tightest power supply in a decade, City AM, July 2015

b. Water: The need for a new water resource in the South East should be a key priority for the region's policy makers. With more erratic weather conditions, the likelihood of droughts in London is becoming greater and will pose a significant risk over the coming few decades. According to Thames Water, the cost of a temporary use ban and drought order (level 3 of their emergency restrictions plan) would cost London £4.3 to 9.5 million every day. Should level 4 restrictions be required involving rota cuts and an emergency drought order, the cost to London would be £236 to £330 million a day[2]. With a growing population in London, the threat from a severe drought would have a significantly negative impact on the functioning of the city.

In London the main risk of flooding comes from surface water, followed by flooding from tributaries as they have lower standards of protection than the Tidal Thames. According to GLA figures, 680,000 properties are at risk of flooding in London, with 83,000 at 'moderate' or 'significant' risk. With winters predicted to be 6% wetter in the 2020s and 14% in 2050s, the number of properties at risk, and therefore the total cost of flooding, is expected to rise[3].

The Thames Tideway Tunnel means that London's wastewater treatment will pose less of threat to London's growth, although continued investment in maintenance and sustainable urban drainage will be required once the Tunnel is built.

c. Green Infrastructure: London's continued expansion has led to land becoming a premium, with space highly valued by developers and policy makers. The fundamental issue is how London can find space for green infrastructure, sustainable urban drainage systems and urban vegetation whilst still meeting transportation and housing requirements. An example of this is the increase in houses with paved front gardens; a London Assembly report from 2005 found that two-thirds of London's front gardens were either partially or wholly covered in an assortment of paving, bricks, and concrete[4]. By reducing the amount of vegetation on streets, this directly increases the chances of flooding, reduces air quality and can have an impact on the mental health of residents.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

ICE London acknowledges that the main tension between policies is between increasing the capacity of land and resources whilst maintaining the quality and standard of living in London. The limited availability of land poses a particular risk and the current housing crisis has meant many developers are constructing new properties without an adequate consideration of infrastructure capabilities in the nearby area.

A fundamental issue is the lack of accountability for infrastructure provision. Policy 5.10 in the Mayor's London Plan relates to Urban Greening and lays the responsibility for green infrastructure with local authorities and developers[5]. However in the current political environment surrounding housing, the implementation of green infrastructure is often overshadowed by the need for cheap and quickly built developments. This has meant that green infrastructure has been provided to different degrees across the city, depending largely on the political willpower of each individual council.

[2] Thames Water Drought Plan, December 2013
[3] London Climate Change Partnership Figures
[4] Crazy Paving, September 2005
[5] London Plan, March 2015

Similarly, the property sector often places infrastructure investment as a low priority and considers it during the final stages of a development, rather than at the first instance. One such example is Battersea Power Station Redevelopment Company which accepted in 2014 that they had a chronic lack of energy infrastructure in place, threatening the construction of the development[6]. Instead of considering the energy infrastructure in place first, local decision makers had only considered the issue once plans were in place, for a time threatening the progress of the development.

Such oversights not only have an impact on energy and green infrastructure but also flood risk. With flood risks, some of the areas most at risk of flooding, such as Hammersmith (which has 59,228 properties at risk), Southwark (52,324) and Tower Hamlets (34,018) are seeing the highest levels of regeneration and development[7]. With more residents living in these boroughs, the cost of potential flooding will continue to rise, requiring a strategic approach from each local authority and led by City Hall.

London has the oldest water main distribution network in all of the UK and consequently suffers from high levels of leakage, with a water loss rate of 646Ml/d, ranking at the bottom of the industry league table[89]. However, there are significant challenges to replacing and maintaining London's assets including cost and disruption to transport systems. While Thames Water is currently replacing the Victorian mains, these works are being undertaken at a rate that means it will take many decades to replace them all. Whilst plans to replace Victorian mains needs to be co-ordinated to ensure minimum disruption, a radical programme of improvements needs to be agreed by policy makers and transport and water providers if the capital is to improve its water efficiency.

3. How do policies and processes at the national and local levels help to manage these impacts? Again, what tensions or difficulties are there?

With the energy sector, there is the national 'trilemma' of security of supply, low carbon targets and affordability. London needs sufficient, affordable, secure, resilient, sustainable and decarbonised power supply systems with strategically planned long term capability and capacity, but also needs to ensure that prices remain low and do not become a burden on homeowners. Supply of energy is a national issue, but London consumes a disproportionate amount (9% of the UK's total consumption[10]), so steps must be taken to increase energy efficiency, the supply of energy generated within the capital and the supply generated nationally.

Water stress poses a significant challenge and is likely to become worse in the future due to population growth and climate change. The issue is regional, with both London and much of the South East classified as 'seriously' water stressed by the Environment Agency. The potential for water scarcity means that some challenging water supply decisions over controversial options including recycling wastewater, providing more reservoir storage, desalination and reducing leakage must be made, by both London and South East policy makers together. Leadership coordination and collaboration between the South East and London is required.

[6] New Civil Engineer, Poor energy infrastructure may delay Battersea scheme, 28 March 2014
[7] Groundsure, 11 February 2015
[8] Financial Times, UK water companies struggle to plug leakage rates, 3 November 2013.
[9] Ofwat, Companies' performance 2012-2013.
[10] DECC, Digest of the UK energy statistics 2014 (DUKES)

National regulations can develop a trend of short termism for infrastructure providers. This is primarily the case with water infrastructure, where Asset Management Periods (AMP) can hinder investment in major infrastructure projects. AMP6 began in April 2015 and will run through until 2020, meaning that water providers will only look forward five years in advance in terms of planning and investment. When assets require continued maintenance, this system works well, but when large scale schemes are required (as they often are in a city of London's size), a shift to a more long term view is required. Rather than focusing on capital expenditure, private companies need to examine total expenditure with a focus on large scale, longer term projects.

4. **What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?**

There are several policies that could be introduced to improve the environment and mitigate the effect of growth in London, many of which were set out in the London Infrastructure Plan 2050 which ICE London contributed to during the consultation process. Many of the strategies set out with the Plan require further action to ensure the goals of the plan are achieved, including the construction of a new strategic water resource, 40 facilities for reuse, remanufacturing, recycling and waste management and 9,000 additional hectares of green space[11].

An example of good practice is the delivery of Queen Elizabeth Olympic Park and the holistic consideration that the Olympic Delivery Authority (ODA) gave to infrastructure provision. In particular, the Mayor's Opportunity Areas should use the ODA as an example of how infrastructure, green spaces and other utilities must be considered before the planning stages.

The development of smart technologies will greatly benefit London and improve its environmental credentials. In particular, the use of smart metering will help households to monitor how much water they use and will allow providers to locate leaks from our pipes and those belonging to customers. In San Francisco, smart metering has ensured that the average resident uses around 45 gallons per capita per day, compared to 69 gallons for a Los Angeles resident and 81 gallons for a Sacramento resident. With more than 96% of the city's 178,000 water accounts monitored digitally, smart metering has been seen as the cause for this divergence in water use between San Francisco and other California cities.[12]

There is similar potential to use new technologies in the energy sector, where London should seek to optimize the generation of electricity from sewage sludge, as Oslo has done; 80% of Oslo's heating system is produced through bio-methane taken from the city's waste[13].

With green infrastructure, Copenhagen should be taken as the model example. Its carbon neutral scheme, launched in 2009 has seen the city cut emissions through investment in green infrastructure and environmentally friendly technologies such as LED lighting. In September 2015, the city announced it would plant 23,000 trees over the course of a year in order to help it lower is carbon emissions[14]. London needs to copy this programme and give a higher priority to green infrastructure investment, with a particular focus on how it can be integrated around other buildings and infrastructure systems, such as cycle lanes, roads and buildings.

[11] London Infrastructure Plan 2050, 30 July 2014
[12] Do San Francisco's smart meters help curb water use? Smart Cities Council, 24 April 2015
[13] Inhabitat, 10 of the most energy efficient cities around the world, 15 September 2015
[14] Denmark: Copenhagen invests in 23,000 new trees, BBC News, 17 September 2015

5. **What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.**

The next Mayoral term will need to focus a number of issues listed in this consultation response, including the need for greater water supply, creating a more energy efficient city and investing in green infrastructure. In particular, City Hall must work with stakeholders outside of London as many of the environmental issues for London can only be solved through greater co-operation with the South East. This has already been set out in several policy documents, but during the next Mayoral term, City Hall must consider how Government plans for further devolution can help create this co-operative process.

ICE London is supportive of the London Infrastructure Plan 2050 and would like to see the strategies within the document further developed. The London Infrastructure Delivery Board should take a leadership role in highlighting the importance of infrastructure investment for both the public and private sector.

The London Plan requires development to set out key measures of how developers, local boroughs and the GLA can promote green infrastructure. Currently, responsibility lies with boroughs and developers, but the GLA should take a more active role in encouraging green infrastructure and building cross-borough co-operation. Similarly, the London Plan should set out the need to give infrastructure issues higher priority for large sites seeing heavy redevelopment. The Plan needs to take consideration of the growing problems with water and energy provision and potential flooding from further housing construction. ICE London believes that housing should be a key priority, but that adequate infrastructure systems must be in place before major redevelopment takes place.

About ICE London

The Institution of Civil Engineers (ICE) is one of the pre-eminent engineering institutions in the world. Established as a learned society in 1818, it has over 80,000 members and provides a voice for civil engineering, continuing professional development and promoting best practice throughout the industry.

ICE London supports and represents over 9,000 members living and working in the capital to actively promote civil engineering with industry, schools, universities, local government and the media. Further details from www.ice.org.uk/london

This consultation response was produced with support of the ICE London and South East Energy and Water Panels. The Panels brings together senior members of the civil engineering industry to promote the value of infrastructure in London and uses the professional expertise and experience of ICE and its members to influence decisions that affect decision making.

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Submission to the London Assembly Environment Committee Consultation

On the Environmental Pressures on London's Growth

September 2015

I feel compelled to put my enquiries and thoughts in writing to stimulate debate, but I am setting my own questions rather than sticking to your Brief. I am London born and bred, a single lady approaching my 60s with an interest in landscape and design issues.

1. What are the acknowledged criteria underpinning a future vision of "desirable outcomes?" Is there any striving for a sense of balance or harmony between people concerns and environmental/wildlife concerns? The underlying attitudes that planners take for granted need to be transparent so that useful debate can take place.

2. Is there an unspoken assumption that people are ALWAYS considered more important than wildlife and environmental concerns? There are relatively few people around prepared to argue the rights of wildlife, who will flag up concerns around the protection of wildlife and who will flag up concerns around the protection of green open space. More usual is a ready capitulation to "the need for growth", "market forces" and the presumed dominance of humankind!

3. What are the core differences between a GROWTH economy and a STEADY STATE economy that could usefully contribute to a debate about desirable outcomes for water, energy and waste management?

4. Would it be a positive development if London ended up looking like Sao Paulo? Do we really want London to extend as far as Brighton with acres and acres of urban sprawl given over to human activity?

5. How do we reach an agreement and decide that London, in terms of its ability to support the activities of people, has arrived at PEAK CAPACITY? If it has, what are the range of solutions? One of the obvious, it seems relevant to point out, is that there are plenty of other British towns crying out for some investment and further development! Could this thinking be applied to air ports and runways?

6. Is PEAK CAPACITY a concept that planners are even willing to acknowledge?

7. What are the signs of SICK CITY SYNDROME and what human friendly solutions can easily be put into place? A personal observation that I feel compelled to make is that central London pavements are constantly crowded now, making them stressful to navigate. The only time they are quiet is the dead of night. Stimulating hustle and bustle is one thing, struggling to make headway along a thoroughfare is quite another. I have often wondered who controls passenger movements at railway stations. What is the thinking behind a train arriving at the terminus, creating a sea of moving bodies disgorging from the train, approaching the exit barriers . . . . only to meet another sea of people intent on getting on the train! The two walls of people have to navigate around each other somehow ..... Railway stations can generate incredible stress due to people numbers and I have never understood why those waiting on the platform could not get the signal to board just that little bit later. Surely we want to put in place practices that promote wellbeing and minimize potential stress?

8. There is concern about the safety of cyclists in London. Would it be unreasonable to expect to be able to cycle the length of the city from north to

south or the breadth of the city from east to west via a string of joined up green spaces? Trails through woodland, orchards, community parks, allotments, nature reserves and riverbank routes. If the answer is yes, then serious consideration might need to be given to the concept of London as a City Park. Such a commitment would require a much more rigorous analysis of how we use the landscape available to us. And a Garden Bridge would be a very welcome feature as a link from north to south. Could it be that the time IS right for a radical re-think now?

9. London as a City Park may not sit well with mayoral candidates who hold an unspoken assumption that London's commercial activity must reign supreme over all other activity. The mantra of "growth" really needs to be carefully unpicked to see what that really would mean for quality of life in London.

10. Over the course of my lifetime (I am approaching 60), there seems to have been a definite shift towards a mantra of "market forces" and the shaping of an insidious acceptance that it really is Ok to view ourselves as "merely a commercial opportunity to be exploited at every stage of our life experience". Ghastly. Is it not time for a proper debate about this?

11. I have often heard politicians talking about the legacy they want to leave their grandchildren, but never the legacy they want to leave to their grandchildren's grandchildren. This might be a more realistic timescale when making decisions for the long term future of the planet. Especially decisions which we know are irreversible such as the implementation of GM crops. There must be many areas like this where it needs to be clear whether the underlying values influencing the decision making process stem from a commercial agenda or a long term wellbeing agenda. A switch to a long term "well being agenda" might necessitate a rapid uptake of "green" environmentally friendly policies, but also an attitude of caution where outcomes are not entirely clear.

12. London as a centre of excellence (relevant to many spheres of human activity) and a desirable base for brand representation has the potential to generate much needed revenue. At the current time, should we not be more realistic and honest about the impact this has had on affordable housing and sense of community for ordinary people – the people with the more humdrum jobs that support the more high powered endeavours: the cleaners, the sandwich makers, the barbers, the plumbers, the shop assistants.

13. Given that London is a massive draw for global brands and foreign investors as well as people who were not actually born here, should we not capitalize on this by re-starting a vigorous debate about the importance of location value? Should we not be exploring how to use this concept more effectively? For example, rather than abolishing the concept of "non-dom status" should we just change our expectations and increase the financial investment we expect for the privilege? Instead of £30,000, why not £30 Million as a one off payment and an annual top up of £5 Million?! This could provide much needed revenue for sewer system projects, for expanding refuse up-cycling strategies, greening up the landscape, creating better wildlife corridors, solar panel and insulation grants and bringing about navigable cycle routes through green corridors the length and breadth of the city that are also good for wildlife!

14. Is the time not right to be questioning the desirability of selling off land "once and for all" to private developers and "foreign investors"? It is our most prized key asset and belongs collectively to us all! How did the idea take root that it is OK to encourage absentee landlordism and profiteering by individuals who have no interest in a community other than generating a profit for themselves! Should we not be challenging our thinking by debating a National Land Use Strategy and alternative models for the generation of revenue based on location value and land use? Other countries would not dream of selling off their most valuable resource to people with no established roots in a community. In Austria foreigners are allowed to buy a residential dwelling, but any uplift in value on selling is paid over to the state. The expectation is that a

home is for living in and not economic gain. I am shocked that the British property market is now firmly in the sights of the Chinese middle classes as a means of gaining a personal financial cushion.

15. Perhaps we all need to address the issue of “What I’m prepared to pay” (ie issues around taxation) and even “What I’m prepared to contribute in terms of my time” related to “What I’d like to have access to” in terms of how society is structured and what it routinely offers us. Personally I am questioning the need for a complete re-think of our political landscape and how we manage ourselves as a society. I can think of better ways.

16. I wouldn’t expect my personal wish list to be the same as everyone else’s, but as I get older there are changes going on all around me that have a negative impact on my life. I am horrified to see the closure of public toilets! Personally, I would like to see green composting toilets being constructed in parks everywhere! I’d like there to be a variety of wild swimming spots in locations throughout London as well as more formal Lidos and outdoor dance spaces; I’d like all the tributaries of the Thames to be daylighted so that I can cycle or walk long distances along river banks that also offer green corridor habitats to a variety of wildlife; I want green rooves to become common place and those that are not green to have solar panels on them; I want to see water mills back in the landscape and yes, I want to be able to cycle the length and breadth of London without having to use the conventional road network.

17. Should we be challenging our thinking by considering how we can promote economic growth by changing our emphasis and expectations to outcomes that promote wellbeing? Maybe then we could start working towards a decrease rather than an increase in swathes of land given over to car parking – very relevant to the current concerns about increased hard landscaping and its impact on sustainable urban drainage. If urban sprawl is allowed to march on unchecked, then noise pollution, light pollution (which affects wildlife habitats hugely) and air quality are only going to get worse. All these issues should be

up for debate when analysing London and its growth and how close to peak capacity it already is.

18. It is pretty common these days to observe the streets littered with plastic bottles, tins, wrappers, plastic bags etc and it is not always because people are at fault and have been discourteous. The wind and foxes seem to play a part in ensuring that rubbish left out on the pavement becomes disgorged and spreads itself about. House frontages are increasingly dominated by quantities of rubbish bags which I find deeply unattractive. Does this signal a civilized society? Surely, civilized societies put in place effective strategies to deal with human waste and the rubbish generated by human activity. Is it acceptable to be cutting down on rubbish removal services when the quantity of rubbish being generated appears to be massively on the increase. My thinking leads me to wonder, when resources are running out, whether we should be comprehensively re-thinking our attitudes towards packaging? Should we have a greater expectation that companies who invest heavily in brand identification should be playing a greater part in helping to deal with the clean up once packaging has played its part in the marketing arena? Is there any mileage in an expectation that packaging is returned more routinely to its originator – could this apply to jam jars, egg boxes or anything else?

22/09/2015

Dear Ian,

As the ecologist for the London Borough of Southwark I have some comments regarding Environmental Pressures of London's growth,

1. In general:

Water will require careful management.

There are issues around supply and managing run off.

As brownfield land and other open space such as gardens is developed there will be increased run off from impermeable surfaces and this could lead to flooding. In Dulwich Park and Belair Park we have recently completed a flood alleviation scheme which will protect local homes. This suggests that future growth will require more parks and open spaces to provide multifunctional roles from recreation and leisure to flood alleviation.

I think green infrastructure is a key component of future cities. It is obvious that increased population will impact on London's parks and open spaces and its nature and habitats by the mere fact that more people will be accessing them. Also many local authorities are looking for savings when it comes to open space while demand is increasing.

The plan to develop 100% brownfield land in London by 2025 is a concern and will result in a loss of biodiversity in the capital.

Lighting is another issue that impacts on public health and biodiversity. This could be addressed through a change over the LED lighting.

The use of green infrastructure will be increasingly important as the increased pressure will require landscape solutions to address air pollution, water quality and flooding and the urban heat island.

This will impact on health and wellbeing. See attached report.

2. Policies and plans

The current policies and plans are not strong enough to ensure the issues mentioned above are addressed.

Most new developments are delivered in isolation of the surrounding environment.

Many cities have much stronger policies with regards to GI. See example from the GLA publication on green roofs 2012.

Berlin: Financial Incentives and Mandatory Policy Requirements

Berlin is one of three German municipalities combining the functions of city and state government in one. The city has pioneered the 'biotope area factor' (BAF), which expresses the ratio between 'ecologically effective surfaces' (e.g. gardens, green roofs, etc) and the total area of a site. BAF target values are set for different forms of development, with new housing attracting a BAF of 0.6 and commercial development 0.3. Different forms of ecologically effective surface then receive a

weighting for the purpose of calculating whether the development complies with the BAF target or not. Thus, a conventional sealed roof surface scores 0, and a surface with vegetation with more than 80cm of soil covering (i.e. an intensive green roof) scores 0.7.

These targets are mandatory in 13 zones specified in a legally binding Berlin Landscape Plan, and are applied on a voluntary basis in other areas of the city.

Green roofs result in a reduction of drainage charges of 50 per cent irrespective of whether they are connected to the storm drains or not.

Source: Goya Ngan (2004) Green roof policies: tools for encouraging sustainable design.

In Southwark the development of London Bridge Railway Station highlighted this issue at the local level. As the Borough Ecologist I recommended that green roofs be installed in the platform roofs. Partly because the survey for Black Redstarts had shown there to be several active around that station and partly to reduce runoff. The developer insisted on shiny steel and glass roofs to match the Shard. Since then the residents of the Shard have communicated a desire to look down onto something green.

In other cities there would have been no discussion about the roof type as the policies and regulatory requirements would have ensured green roofs were installed.

Some policies to meet housing demand are in conflict with others to provide parks and open spaces.

The All London Green Grid is good in the way it covers the whole of London however the ALGG has not reported progress on delivery so it is hard to see how effective it is.

National policies appear to support development and enterprise over all others.

4. New ideas

To help integrate developments into the cities Green Infrastructure network. it would be good to require developers to produce a report or chapter in the Design and Access statement (mandatory), on GI when submitting a planning application.

Statutory protection of Parks and Open Spaces in Metropolitan areas would be a massive step forward. Given the importance of these spaces to local communities and wider they are the places where the city can adapt to meet the challenges of climate change and where ecosystem services are delivered largely for free.

Without the network of these spaces there would be no fall back position if pollution levels and environmental conditions increase or change.

5. Mayors Focus

The focus of the 2016 Mayoral term should be to develop robust policies to make London fit for the future. So greener, more joined up GI, protecting biodiversity and open space and improving Health and Wellbeing.

A large proportion of London is now built environment so this must be included in any future policies relating to GI.

And a last thought is, everything we use to travel around London, (Roads, rail, underground and open space) is also used by London's wildlife to move around. This should be considered when developing polices relating to transport.

Regards,

Jonathan Best

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Landscape Institute
Inspiring great places

Cities, green infrastructure and health
A paper for the Foresight Future of Cities project
by Dr Val Kirby FLI and Stephen Russell, Landscape Institute, July 2015

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1. Introduction

a. Background

"Much greater priority needs to be given to public health and prevention in health and social care. While progress has been made in secondary prevention and improving life expectancy, health inequalities persist, and effective approaches to primary prevention and tackling the determinants of health are lacking. Services are still too focused on treating ill health and dealing with acute need and those in crisis" – Transforming the Delivery of Health and Social Care, The Kings Fund, 2012.

Most people in the UK live in towns and cities and will continue to do so. They need places close to home, in those same towns and cities, where their physical and mental health problems can be addressed. But there is a huge and growing concern about the costs of treating ill health[1], partially a result of mounting pressures on the public purse, an ageing population[2] and widening health inequalities. If treating ill health is overstretching the public purse, then perhaps there is a way of reducing demand on health services. Indeed, there is a growing body of evidence that supports investing in preventing illness and enhancing wellbeing, as a way of reducing the cost of health care. Some of this investment needs to be in supporting changes in people's behaviour – eating healthier food, smoking fewer cigarettes, exercising more. But greater consideration needs to be given to ensuring that our towns and cities support and encourage healthy lifestyles.

National policy has only reflected this imperative for a relatively short time. This may be the reason why there has not yet been a major shift in delivery priorities and partnership working, although examples of best practice do exist. Other barriers are outlined later in this paper. But there are many exciting opportunities too. The primary one, in the context of this paper, is to focus on improving the health and wellbeing of people in our towns and cities through the delivery of comprehensive, multifunctional green infrastructure (GI).

[1] Appleby, J., Spending on health and social care over the next 50 years: Why think long term? Introduction, p 1. The Kings Fund, London, 2013.
[2] http://www.parliament.uk/business/publications/research/key-issues-for-the-new-parliament/value-for-money-in-public-services/the-ageing-population/

b. Defining green infrastructure

Infrastructure is a familiar term, traditionally denoting networks and systems that provide us with essential services such as water, electricity and transport. GI is more than just delivering each of these services in greener ways. It stresses multifunctionality, using urban networks of natural and semi-natural features, such as green spaces, rivers, street trees and parks, to deliver a wide range of ecosystem services[3]. More emotive language describes GI as our 'natural life support system[4]' that enables us to work 'with the grain of nature'. But whether we use technocratic or more populist language, there is considerable support for the potential of GI to deliver a wide range of benefits for society, the environment and the economy. Enhancing people's health and wellbeing is just one of these benefits.

Natural England, the UK's Landscape Institute (LI) and the European Commission (EC)[5] all have definitions of GI that include networks and multifunctionality, and imply landscape and infrastructure. The EC's definition is the most comprehensive of these: it describes GI as *a strategically planned network of high quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings*.

Definitions of GI that refer to health are rare. However England's National Planning Policy Framework (NPPF) does so: it defines GI as *a network of multifunctional green space, both new and existing, both rural and urban, which supports natural and ecological processes and is integral to the health and quality of life of sustainable communities[6]*.

Our cities are faced with many challenges, yet these are often approached as separate issues. The idea of GI evolved during the 1990s in response to a growing recognition that those planning and designing complex urban areas often ignored the interactions between issues such as public health, flood management, housing delivery, biodiversity, climate change adaptation and so on. This 'silo' approach prevented the adoption of more dynamic, integrated and forward-thinking solutions. GI offers an alternative to this narrow-minded approach – a way of tackling big challenges head on, and delivering multiple secondary benefits at the same time. This integrated approach uses the ability of nature to provide us with the ecological services that we need and helps unlock the potential of our towns and cities to support healthier lives.

Imagine, for example, a city which has cleaned up its rivers and streams, provides footpaths and cycleways along them, links these with larger open spaces such as parks and squares, invests in tree planting in large and small public spaces and streets, develops community gardens, has an educational programme that encourages hard to reach groups to be more active, and is committed to implementing sustainable drainage systems[7] (SuDS). That city's urban heat island effect and flood risk will reduce; there will be increases in air and water quality, active travel, the number of people

[3] UK National Ecosystem Assessment (2014) The UK National Ecosystem Assessment: Synthesis of the Key Findings. UNEP-WCMC, LWEC, UK.
[4] North West Green Infrastructure Think Tank (2008). North West Green Infrastructure Guide.
[5] Natural England 2009; Landscape Institute 2013; European Union 2013.
[6] Department for Communities and Local Government, National Planning Policy Framework (NPPF) March 2012.
[7] Sustainable Urban Drainage Systems, whether constructed as a part of new build or as a retrofit: see http://www.landscapeinstitute.org/knowledge/SustainableDrainageSystemsSuDS.php

walking, running and cycling for fun, and growing their own food; there will also be more opportunities for formal and informal education focused on enhanced wildlife. All these changes will have positive impacts on people's health and wellbeing.

2. The Evidence

Whenever evidence relevant to health is called for, there is a tendency to demand the kind of clinical evidence, validated through experimentation and testing, that is necessary with new drugs or surgical methods. This kind of certainty is hard to achieve when exploring the links between people's health and wellbeing, their behaviours and lifestyles, and the places where they live, work and play. Nevertheless over the past thirty years much attention has been given to building up the evidence base. It is now widely accepted that there is enough evidence to support claims about the positive connections between health benefits and environmental quality. Public policy makers have only started to embrace GI relatively recently. There is therefore limited evidence explicitly linking GI with improvements in health and wellbeing. There is, however, a substantial evidence base linking health and wellbeing with access to green spaces. In a summary paper such as this one it would be unhelpful to include a long list of specific research reports. Therefore most of the references included in this section are by authors who have reviewed relevant research activity.

A 2008 report from Foresight on Mental Capital[8] highlighted that "*The quality of the physical environment also plays an important role in mental wellbeing. Among the significant factors are noise and light levels, building layouts and way-finding, access to nature, and the design of everyday products, buildings, transport systems and information/communication devices, all of which contribute to levels of stress or contentedness, and a sense of inadequacy or self-efficacy and of isolation or connection to others."* GI has a critical role to play in regard to many of these factors.

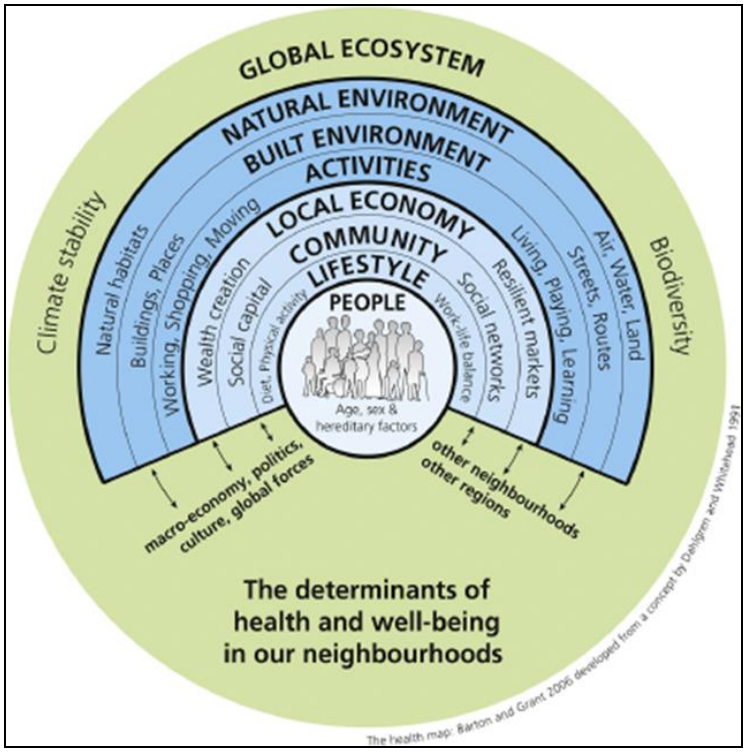
Another Foresight report[9] highlighted the importance of green infrastructure to quality of life, stating that *"[…]there has been an upsurge in concern for green space in and around urban areas, including the development of green infrastructure[…]Two-thirds think it is important to have green space nearby and the majority think parks and public spaces improve quality of life."*

Access to nature and attractive green spaces has been a recurring theme in descriptions of therapeutic environments and healthy lifestyles for many years. Ward-Thompson (2011) traces the history of the emergence of evidence about the links between health and the physical environment. She finds that traditional, conventional wisdom is often confirmed by more recent empirical research, and concludes "*The importance of access to the landscape appears to be as relevant as ever in the context of modern urban lifestyles*".

Barton and Grant's Settlement Health Map is a useful, graphic summary of the ways in which health and wellbeing are strongly influenced by the character and quality of the places where people live and work. The paper that accompanies the map details the evidence on which the map is based (Barton and Grant 2006):

[8] Foresight Mental Capital and Wellbeing Project (2008) Final Project report – Executive summary. The Government Office for Science, London

[9] Foresight Land Use Futures Project (2010) Final Project report. The Government Office for Science, London



Although both Ward-Thompson and Barton and Grant focused on the links between health, wellbeing and the physical environment in general, their work is undoubtedly relevant to discussions on GI. The connectivity that typifies a comprehensive GI network means that their conclusions are particularly relevant: continuous GI networks that are integrated within and between urban areas will be accessible to, and will therefore benefit, large populations.

In 2013 the Landscape Institute (LI) produced a position statement exploring the relationship between public health and landscape[10]. At its heart was an evidence review, which was used to underpin the LI's *Five Principles of Healthy Places*. Although the evidence relates to the broader concept of landscape, it is relevant to GI, which is a way of describing multifunctional landscapes.

The Landscape Institute's Five Principles of Healthy Places

Principle 1: Healthy places improve air, water and soil quality, incorporating measures that help us adapt to, and where possible mitigate, climate change.
Principle 2: Healthy places help us overcome health inequalities and can promote healthy lifestyles.
Principle 3: Healthy places make people feel comfortable and at ease, increasing social interaction and reducing antisocial behaviour, isolation and stress.
Principle 4: Healthy places optimise opportunities for working, learning and development.
Principle 5: Healthy places are restorative, uplifting and healing for both physical and mental health conditions.

[10] Landscape Institute (2013) Public Health and Landscape: Creating healthy places. London, Landscape Institute.

The evidence in support of Principle 1 includes a study of the health effects of climate change[11], a review of research into the microeconomic evidence of the benefits of investing in the natural environment[12], and a study that shows how the urban heat island effect can be reduced by modifications to urban form[13].

The Marmot review of health inequalities in England post 2010[14] is one of the key overviews of evidence that supports Principle 2. There are many sources of evidence about the positive connections between healthy lifestyles and the environments in which people live. These include Natural England's information pack on health and natural environments[15] and the BMA's report linking healthy transport with healthy lives[16].

Principle 3 is supported by the Natural England review already cited, by recent PhD research into the connections between local facilities, social interaction and people's wellbeing[17], and by a study that links creating greener building envelopes with quietness[18].

Many studies support the contention in Principle 4, that access to green places enhances children's play and learning[19]. There are fewer studies that explicitly connect the design of workplaces and enhanced health and wellbeing, although some do [20].

Principle 5 is all about places designed and used as therapeutic environments. Although the evidence here is about specific sites, these can of course be located within broader GI networks. One of the key researchers in this field is Ulrich, who has been publishing evidence about the impact of access to green spaces on people recovering from illness since the 1980s[21].

In parallel with the promotion of GI, biophilic design has been championed as a complementary strategy for addressing workplace stress, student performance, patient recovery, community cohesion and other familiar challenges to health and overall wellbeing. The biophilia hypothesis, first defined by Fromm and popularised by Wilson[22], states that people have an innate affinity with other living beings and with the natural world. Wilson's prime argument was in favour of strengthening the conservation ethic throughout human societies. But interest in biophilia has also led to

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[11] Vardoulakis, S., and Heaviside, C (Eds)., *Health Effects of Climate Change in the UK 2012: Current evidence, recommendations and research gaps*, Health Protection Agency, 2012.
[12] Bolund, P. and Hunhammar, S., (1999) cited in Sunderland T, *Microeconomic evidence for the benefits of investing in the natural environment*, Natural England Research Report NERR033, 2012.
[13] Hathway, E. A. and Sharples, S., *The interaction of rivers and urban form in mitigating the urban heat island effect: a UK case study*, Building and Environment, 58: 14-22, 2012.
[14] Marmot, M., *Fair Society, Healthy Lives*, Marmot Review – Strategic review of health inequalities in England post 2010, Department of Health, 2010.
[15] *Health and Natural Environments: An evidence based information pack*, Natural England, Sheffield, 2012.
[16] BMA 2012
[17] Calve Blanco, T., *The social value of local facilities and its impact on residents' wellbeing*. Submitted PhD Thesis, WHO Collaborating Centre for Healthy Urban Environments, UWE, Bristol, 2013.
[18] Van Renterghem, T., et al *The potential of building envelope greening to achieve quietness*, vol. 61, 34-44 Building and Environment, 2013.
[19] Beunderman, J., Hannon, C., and Bradwell, P., Seen and Heard: Reclaiming the public realm with children and young people, Demos, London, 2007; Ginsburg, K., The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. Clinical Report: American Academy of Paediatrics, vol. 119 no 1 pp 182–191, 2007.
[20] Kaplan, R., Employees' reactions to nearby nature at their workplaces: The wild and the tame, vol 82 1–2, pp 17–24, Landscape and Urban Planning, 2007.
[21] Ulrich, R S., Health benefits of gardens in hospitals, Plants for People, International Exhibition Floriade, Netherlands, 2002; Sternberg E., Healing Spaces:The science of place and wellbeing, Belknapp Press of Harvard University Press, Cambridge, Massachussetts, 2009.
[22] Wilson, E. O., *Biophilia*, Cambridge, MA: Harvard University Press, 1986.

arguments in favour of a greener approach to environmental planning, design and architecture.

There are significant overlaps in the research cited in support of the biophilia hypothesis, and that used by the LI and others. But there is a growing body of research that seeks to test the biophilia hypothesis. For example, Grinde and Patil's [23] evaluation of some fifty relevant empirical studies concluded that an environment devoid of nature may have negative effects on people's wellbeing.

3. Opportunities

In terms of opportunities, we focus on two key areas of public policy – planning and public health – which have the potential to deliver the kinds of changes necessary to enable enhanced delivery of GI.

a. The planning system

The planning system establishes the framework within which decisions are made about land use. It therefore has a profound impact on both the aesthetic and functional qualities of our towns and cities. The vast majority of these decisions have consequences on people's health and wellbeing.

The National Planning Policy Framework (NPPF) recognises this, acknowledging that the planning system needs to create "…*a high quality built environment, with accessible local service that reflect the community's need and support its health, social and cultural wellbeing"*. It goes on to state that planning policy and decision making should create places that are safe and accessible, where *"crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion"* and that *"Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and wellbeing of communities."*

In addition to direct references to health and wellbeing the NPPF also highlights the importance of giving due consideration to future environmental changes, in particular climate change. In the context of health and wellbeing this is significant, given the relationship between public health and issues such as air quality, flood risk and the urban heat island effect. GI is identified as one of the key methods for addressing these challenges.

b. Public health policy

Public health policy exists to improve the health of the general population by addressing health issues before they have the chance to occur. It seeks to address longstanding health issues, reduce inequalities in health and wellbeing, and to ensure that, as far as possible, we can all live longer, healthier lives.

The Marmot Review ('*Fair Society, Healthy Lives'*) recommended that in order to reduce health inequalities, a key objective must be the creation and development of healthy and sustainable places and communities. Policies cited as central to achieving this include:

- improving active travel;
- improving the availability of good quality open and green spaces and;

[23] Grinde B, Patil GG. Biophilia: Does Visual Contact with Nature Impact on Health and Well-Being? *International Journal of Environmental Research and Public Health*. 2009; 6(9):2332-2343.

- improving the food environment in local areas.

Drawing on the findings of the Marmot Review, a range of measures has been introduced in the Health and Social Care Act (2012) to promote public health:

- the transfer of responsibility for public health to local authorities. This is a move that has potentially significant positive implications in terms of relationships between Directors of Public Health and other services provided by local authorities, for example planning and environment departments, and;
- the introduction of Health and Wellbeing Boards, to include Directors of Public Health, and at least one elected Councillor. Their role in the development of Joint Strategic Needs Assessments (JSNAs) and Joint Health and Wellbeing Strategies (JHWSs) will be important in promoting health and wellbeing and reducing inequalities. JSNAs must assess current and future health and social care needs and ensure that mental health receives equal priority to physical health, including health protection, and upstream prevention of ill health. There are therefore a range of issues that need to be considered by Health and Wellbeing Boards, including broader social, economic and environmental factors, many of which can be influenced positively by GI interventions. These will need to be considered in JHWSs as these are the mechanisms by which issues identified in JSNAs are to be addressed.

The Public Health Outcomes Framework 2013-2016 has been published by the Department of Health and presents a useful mechanism for focusing the attention of public health on the value of GI. A set of public health indicators has been developed as part of the Framework to help understand the level of progress on those things that matter most to public health. Indicators have been selected to cover the full spectrum of what is meant by public health, and what can be realistically measured. At present, there is a range of indicators that can be positively influenced by integrating GI into our towns and cities, including:

<u>Domain 1 – Improving the wider determinants of health</u>
- The percentage of the population affected by noise.
- Utilisation of green space for exercise/health reasons.
- Social connectedness.
- Older people's perception of community safety.

<u>Domain 2 – Health improvement</u>
- Diet.
- Proportion of physically active and inactive adults.
- Self-reported wellbeing.

<u>Domain 3 – Health protection</u>
- Air pollution.

<u>Domain 4 – Healthcare public heath and preventing premature mortality</u>
- Mortality from causes considered preventable.
- Mortality from all cardiovascular diseases (including heart disease and stroke).

- Mortality from respiratory diseases.
- Health-related quality of life for older people.
- Dementia and its impacts.

Taken together, these two key policy areas provide a significant degree of support for greater delivery of GI. However change on the ground is still lacking, which inevitably results in the need to consider what barriers might exist and which need to be overcome despite demands set out in national policy.

4. Barriers

Despite the imperative for action, the policy opportunities and evidence to support the need to integrate GI into the fabric of our towns and cities, we are not seeing this translated into delivery on the ground. We suggest there are a number of reasons for this:

- a number of local authorities do not have GI strategies in place[24]. Many local authorities still have no identifiable policies or documents which refer to GI and many appear not to be working strategically with neighbouring authorities. Others use the term GI to mean green space, which ignores other types or functions of GI and may result in missed opportunities;
- no statutory duty upon local authorities to protect or maintain their green infrastructure assets;
- reduced public spending has had a number of negative impacts, including a lack of funding for maintaining existing assets, let alone the delivery of new GI close to where people live[25]. It has also reduced the number of individuals within local authorities with the skills necessary to demand GI interventions and undermines the ability of authorities to act as an 'intelligent client';
- the natural environment is still seen as a 'nice to have', and as a result of budgetary pressures which have seen some local authorities predicting they will not be able to fund statutory responsibilities, GI is afforded a lower priority;
- recent planning reform, despite references to GI, has not given the concept equal priority to other forms of infrastructure. This lack of concern at a national level is demonstrated through recent Government action which has archived Natural England guidance on GI;
- a failure to plan in the long-term and the lack of interest in strategic planning. This is particularly pertinent to GI as the benefits it delivers accrue over time;
- GI, in the real sense of the term, is multifunctional and therefore the organisations/teams who could be taking an interest in its planning/design and delivery need to act together. A failure to coordinate/collaborate properly undermines GI's potential to deliver public health outcomes, and;
- a lack, despite potential, of public health involvement in place making.

[24] http://www.landscapeinstitute.org/PDF/Contribute/GreenInfrastructureResearchSummary.pdf
[25] Heritage Lottery Fund (July 2014): "The State of the UK's Public Parks".

5. Conclusion

The King's Fund recently issued a stark warning. It said that, based upon patterns over the past 50 years, the UK might face a scenario where it is spending up to 20 per cent of its GDP on funding the NHS. There is therefore clearly an urgent need to explore new ways of preventing ill health before it has the chance to occur, beyond more traditional programmes designed to encourage healthier lifestyles such as smoking cessation, healthier eating and more frequent exercise.

We believe, and the evidence is growing to support this, that an exciting opportunity exists to significantly improve health and wellbeing by integrating nature into the fabric of our towns and cities. In doing so, not only will urban populations be healthier but, a huge number of other benefits will be gained for society, the economy and the environment. This is a result of the dynamic and multifunctional nature of GI, where land is planned and designed to deliver many services, often simultaneously.

The policy support exists to encourage enhanced GI in our towns and cities, and recent initiatives, such as the Natural Capital Committee (NCC), have only strengthened the case. In its Third Report the NCC highlighted that "*if every household in England were provided with more equitable access to good quality green space, then around £2.1bn in health cost savings could be achieved by the NHS per annum*". And there are a number of projects, strategies and initiatives that offer encouraging signs.

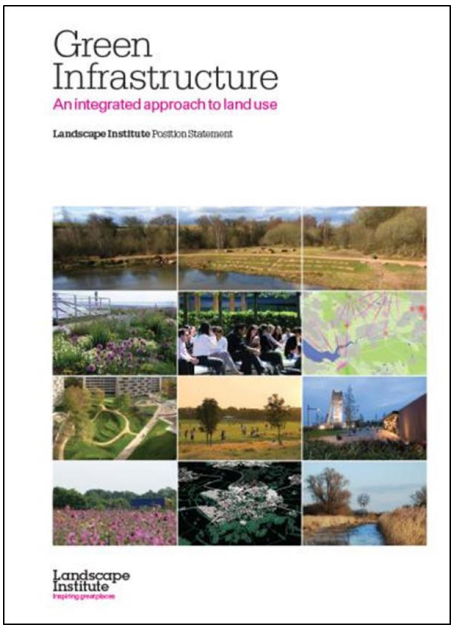
However a number of barriers to delivery still exist, not least those highlighted in this article. And with the ongoing need for public sector efficiency, greater delivery of GI will not be straightforward. With some local authorities suggesting that even the delivery of statutory duties is increasingly at risk, delivery of GI – all too often seen as a 'nice to have', despite evidence to the contrary – faces a challenging future. The Third Report of the NCC goes on to state that "*Investment in GI is often the first to be sacrificed during periods of financial pressure, but this is a false economy*". We could not agree more. We need to see increasing investment in GI now, to save in the future. We cannot afford not to, given the multiple challenges that can be addressed through such investment, including concerns about health and wellbeing.

Arguments surrounding the need to increase investment in GI will undoubtedly continue. At the same time however opportunities do still exist, and will be enhanced through a more creative, collaborative approach to the planning, design and management of our towns and cities. We are convinced that the potential offered by GI to address such a variety of economic, social and environmental challenges means that in future a wider range of interested parties need to come together to ensure that urban landscapes are rich, varied and truly multifunctional. This must include both landscape and public health professionals, given the enormous opportunity presented by GI to help ensure that people in our towns and cities live longer, healthier lives.

About the Landscape Institute

The Landscape Institute is the Royal Chartered institute for landscape architects. As a professional body and educational charity, we work to promote the protection, conservation and enhancement of natural and built environment for the public benefit. We champion landscape and the landscape profession in order to inspire great places where people want to live, work and visit.

Read more about the Landscape Institute's thinking on public health and green infrastructure:



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Question	Response
1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider: a. Energy supply, demand and distribution b. Water management (water demand, water supply, waste water management, and managing rainwater and flood risk) c. Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats, etc.) If you could provide or point to specific evidence or evaluations that would be very helpful. Views and information about pressures and impacts varying across London, or in specific parts of London, are welcomed.	London's growth has caused additional pressure and risk around floods and droughts. This has been subject of extensive work through London Emergency Planning networks and resulted in detailed plans to respond/adapt to risk. The Assembly has no doubt contacted LFB Emergency Planning as part of this exercise and will receive a more informed London-wide perspective through that route both in terms of drought planning and flood risk management. London's growing population increases demand for energy and water. Whilst implementing energy efficiency and the use of renewable technologies will mitigate the use of fossil fuel sources, demand for energy will continue to rise. Energy market price dictates investment approach to alternative energy technologies. Falls in the energy market price tend to dampen investment because returns would be lowered. Since the mid 1970s there has been a comprehensive gas network and therefore an easy supply of fossil fuel, which makes choosing alternative energy technologies much more difficult. Government, responding to the falling cost of solar PV as well as increasing impact green levies have on the energy retail price, has decided to reduce the FiT subsidy for PV system although RHI will remain to encourage the uptake of renewable thermal systems such as solar thermal panels and GSHP. Water is a finite resource that needs to be carefully managed. OFWAT, the water regulator, oversees the services water suppliers provide to customers. Water suppliers are required to manage water resources. Water management involves investment in the pipework infrastructure to reduce water leaks and detect waste as well as reduce demand for water through metering and awareness campaigns. Local Authorities can assist in reducing consumption through encouraging the uptake of water butts to collect rain water, discouraging property owners from paving over gardens, and requiring developers to incorporate SUDS in their design proposal to mitigate potential flooding. Amounts of waste produced are determined by two factors, population growth and consumption patterns. With an increased population in London there will be more waste and with that comes higher costs for managing waste. London Boroughs are facing a total funding gap of around £3.4 billion by 2019/20 and therefore, are unlikely to have the budgets to finance the additional waste infrastructure that is required to deal with the rising waste tonnages.The challenge of managing more waste with less money also creates opportunities to review the way London Boroughs operate their services. For

	example, Sutton is working with the other South London Waste Partnership boroughs to procure a contract for waste collection, parks and street cleansing, this will be the biggest contract in the UK. Driving waste up the waste hierarchy also reduces the costs of managing waste but with reduced local authority budgets there will be less investment in the community outreach that is required to create the behaviour change needed to make waste minimisation, reuse and recycling activities the norm. It is likely that London's increased population will mean more people living in rented and flatted accommodation and increased transiency. All of which are huge challenges to the waste industry. For example, residents in flats typically recycle less and contaminate communal bins more and as yet the waste industry in the UK has not found an effective way of generating high recycling rates from flats. The predicted long term effect of climate change in the London region is warmer summers and wetter winters. With a rising population and consequent demand for living and working accommodation, it is important that policies are developed to ensure energy requirements are controlled through good design and that there's adequate enforcement to avoid bad practice. Therefore sufficient resources are necessary to enable a managed approach to new developments and a retrofit programme for existing buildings.
2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?	Although there are well developed plans across London to respond to drought and flood, nonetheless an approach from the Assembly that sought to bring a strategic approach to regional risk would be welcome, particularly in terms of infrastructure issues that might mitigate risk rather than just adapt to it. London's waste strategies set challenging targets for all those involved in the waste industry. The focus on delivering greenhouse gas savings through sustainable waste management activities is forward thinking and more directed towards reducing climate change than tonnage based measures. There is a conflict between the waste reduction targets and recycling targets that does not appear to have been acknowledged within London's waste policies. Waste reduction achievements may reduce the amount of recyclable material available and the opportunity to meet recycling targets. For example, the reduction in the weight of

	packaging materials could generate a reduction in recycling tonnages. It is vital that businesses play their role in reducing waste and we are pleased that the Mayor has proposed to work with businesses in the capital to improve resource efficiency. Local authorities absorb the full costs of collecting and disposing of unwanted products that could have been produced in a more sustainable manner. It is not morally right that taxpayers have to pay for waste that is caused by private companies. It also does not fit with the polluter pays principle. Another challenge for the waste industry with growing volumes of waste is meeting the proximity principle and managing all of the waste produced by London within London. Land is London is under high demand for housing and commercial use. There is little spare land in London that isn't close to housing and residents, making it harder to justify placing a waste treatment facility next door. In addition, it is more expensive to develop facilities in London.We recommend that existing waste management sites are protected for future waste treatment facilities. Also, there needs to be a more flexible approach, which would not restrict London boroughs from exporting waste outside the capital when it is environmentally and economically beneficial to do so.
3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?	Despite various GLA and national policies the 4 MW of waste heat from the Viridor landfill gas engines in Beddington Lane has never been utilised, and even now the development of the Sutton Decentralised Energy Network (SDEN) requires the Borough to take the lead role as the scheme developer. The initial relatively low returns and complex structure of the project means that the private sector would never have taken the lead developer role. Whilst we recognise and acknowledge the advisory support provided by GLA's DEPDU, the SDEN project is good evidence of the failure of local (London) and national policies to deliver heat networks of this nature because, in reality, the project is only proceeding by virtue of local political will . Also whilst the GLA clearly does wish to see the growth of heat networks, particularly using sources of "secondary" or "third party" heat as detailed in the GLA's own report "London's Zero Carbon Energy Resource Secondary Heat published in July 2013, there are two key issues: 1. This report and the GLA's own definitions do not consider energy

	from waste as a secondary heat source (as per the SDEN project), although the challenges are often very similar, because as we know the ERF heat generator has no inclination or motivation to develop a heat network 2. Building on this first point the GLA then needs to consider how it can structure support for the development of heat networks using such third party heat sources, which it has identified in its own report has significant potential to meet London's heating demand. This report identified that the total heat that could be delivered from secondary sources in London is of the order of 71 TWh/yr which is more than the city's total estimated heat demand of 66 TWh/yr in 2010. This needs to be considered in the context that the Mayor's own target is to deliver 25% of London's energy demand from decentralised sources by 2025. Therefore support mechanisms need to be developed to increase the utilisation of "secondary" or "third party" heat sources if the Mayor is to meet these targets, and to help projects such as SDEN to succeed and reduce the capitals reliance on external imported fuel sources. The Mayor also needs to encourage this approach to be mirrored by DECC who currently offer no fiscal support for the developments of heat networks, and specifically no recognition of the complexity and therefore the need to offer support for the development of heat networks using third party heat sources. The application of the London Lorry Ban needs to be reconsidered in relation to waste collections. Under the pressure of budget cuts, waste collection authorities are working longer hours. As a result, authorities are seeing an increase in restriction notices. Sutton receives 6 to 7 notices a month. This ends up being an unnecessary administration process. Therefore, there should be a system in place to prevent these restriction notices being sent to boroughs conducting their waste collection service. Refuse and recycling collection working days are lengthening as alternative collection schemes and shift patterns are introduced. The number of parking restrictions and traffic controls are increasing in london and this is making it more difficult to collect waste. Time restrictive lorry controls need to take into account

	collection pathways. The national deregulation of enforcement around waste issues has made it more difficult to introduce initiatives such as compulsory recycling and prevent landlords from providing containers for waste and recycling that are unsuitable from a Health and Safety perspective. This increases the challenge in meeting recycling targets in the future.
4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world? If you could provide or point to specific documents setting out these ideas or approaches this would again be very helpful.	Making waste collection systems the same or similar across the capital would help to reduce the confusion of residents as we know residents frequently live and work in different parts of London and there is a large amount of transiency. Other major cities do this including San Francisco. Bottle deposit schemes are used in other countries such as Germany and Denmark to encourage residents to take their bottle back for reuse. It also reduces littering. A Londonwide bottle deposit scheme should be considered.
5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.	Although, there is a move to looking at how to create a circular economy, little progress has been made. The lack of a shift from waste disposal to resource management, is hindering the social, environmental and economic benefits that could be gained from London's waste. The work the Mayor's office has conducted to encourage organisations like TfL to use cooking oil as a fuel for their vehicles is a step in the right direction. We would like to see the Mayor build on this. Further work on how to help residents living in flats to recycle more, this is both on the infrastructure and the communications. No capital city in the world has solved this problem and London has an opportunity to become a leader in this area. It is imperative that developers and planning teams think about waste as part of the design stage for a new development rather than as an afterthought. Flats designed now need to be built with the waste capacity required manage waste and recycling in the future not just in the present. Work needs to be done with Housing associations and managing agents to help them manage their waste and recycling issues that they are faced with. In Copenhagen, providing a room in a block of flats where residents can swap unwanted bulky items has helped them to reduce fly tipping in communal areas.

LONDON ENVIRONMENT:
THE LONDON ENVIRONMENT DIRECTORS' NETWORK

London Assembly Environment Committee

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Date: 23 September 2015

Dear Sir/Madam,

LONDON ASSEMBLY ENVIRONMENT COMMITTEE INVESTIGATION ON ENVIRONMENTAL PRESSURES OF GROWTH – RESPONSE FROM LEDNET

The London Environment Directors Network (LEDNet) is the membership association for London's Environment Directors.

LEDNet welcomes this important investigation by the London Assembly. We consider that each of the issues highlighted by the committee (energy supply, water management and green infrastructure) are critical issues that could be significant barriers to growth if they are not appropriately managed. In addition, we draw the committee's attention to the impact of the city's growth on air pollution and waste management as well as the impact that climate change will have on service delivery. We have responded to the Committee's questions below.

Yours faithfully,

Chris Lee

Chair of the London Environment Directors Network

1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:

- *Energy supply, demand and distribution*
- *Water management (water demand, water supply, waste water management, and managing rainwater and flood risk)*
- *Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats, etc.)*

We acknowledge and agree with the information set out in the background note. We agree with the current assessment that the London population growth will have impacts on the environment and these need to be managed. We generally agree with the focus areas but would like to see more emphasis on climate change, air quality and waste management.

Cross Cutting themes

Utilities rely on old infrastructure that need updating as resources are lost to seepage and leaking. Both need investment but with a long term view so that we can design infrastructure that lasts into the future.

There is an emphasis on supply in policy and strategy but demand management should play a bigger part as per capita consumption of utilities can decrease significantly. The concept of a circular economy is only relevant if the entire cycle of resource use is considered, for example waste water and sewage can provide energy through new technologies such as heat exchange and anaerobic digestion of sewage creating biogas.

We would also like to draw the committee's attention to the impact on air quality as a consequence of increased energy production and transport. London is consistently above acceptable pollution levels which have an adverse impact on life expectancy and health. Growth for London also means an increase in noise and light pollution which has an adverse impact on wildlife and also London residents.

In addition climate change will impact on London's ability to provide services. It is expected that weather will become more extreme with dry and wet seasons which will also have an impact on water supplies. As well as the impacts on water supply, air pollution increases in hot weather.

Energy supply, demand and distribution

We agree with the projection that demand for energy will increase, which will have to be met with an increase in supply. Currently the majority of energy comes from fossil fuels and the environmental impact of these is well documented. To reduce the impact of increasing demand on energy in London, the following should be observed;

1. Reduce the demand for energy (demand)
2. Increase the amount of energy that comes from renewable sources (supply)

3. Move to a more decentralised energy system, which reduces the environmental impacts from distribution (distribution).

Despite targets to reduce carbon emissions there does not seem to be investment in the infrastructure to deliver renewable energy sources. Currently, neither the national, nor regional policy regime are sufficiently incentivising to support the three points above. More needs to be done to take a longer term view, which means acknowledging that fossil fuels are not the future for energy.

Water Management

We agree with the assessment made by the committee and we are concerned about the environmental impact of increased water demand. London is struggling with the supply of freshwater to keep pace with demand, leakage in the system and waste water management. Mitigation actions set out in Mayoral plans include sourcing water from further afield by building canals, desalination and increasing storage capacity. We are concerned about the potential environmental impact of these actions which do not address the overall problem of water scarcity but instead displaces it.

The London Infrastructure Plan 2050 outlines the fragmented nature of water management as multiple organisations have responsibilities such as regulators, private water companies, and TfL and Local Authorities with responsibilities for drainage. The implication is that any long term planning to reduce the environmental impact needs to be integrated across several different organisations.

Green Infrastructure

We agree with the points made by the committee and hold the same view that green infrastructure is a cross cutting issue. Not providing and investing in green infrastructure has an environmental impact as the benefits include improving air quality, health, wellbeing, climate change mitigation, and water management. The crosscutting and multiple benefits of green infrastructure should be emphasised.

Alongside this, is the management of current green spaces in London by boroughs and other organisations. The management costs and pressure on green spaces will increase, which have to be met by a decreasing budget. The London Infrastructure Plan 2050 suggests that green space should increase to keep up with population growth. Given the scarcity of space, we need to become more creative and strategic about the way in which we create and manage our green infrastructure.

Waste Management

Waste is not currently picked up by the London Assembly as one of the important issues to be considered when looking at the environmental impacts of population growth. We believe that waste management should feature, as an increase in population will mean a significant increase in waste produced, which will have to be disposed of. Household waste is managed by London Boroughs and has significant costs attached. We agree with the approach set out in London Infrastructure Plan 2050 to reduce costs and shift to a circular economy. However the circular economy is currently an under-developed concept and requires new infrastructure and investment which is why it should be included as a consideration here.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

The London Infrastructure Plan is a really useful starting point as there has never been such a holistic and long term view before. Addressing the problems outlined in the London Infrastructure Plan 2050 is integral to ensuring London continues to be a city where people want to live for its quality of life. However there is minimal mention of social infrastructure and housing and the resulting competition for space. There is not an easy solution but resolving this tension is key to delivering growth while reducing environmental impacts.

We do not believe that the London Infrastructure 2050 addresses adequately the impacts of growth on air quality, on provision for green space or green infrastructure (and the competing demands on land for this) or on the implications for climate change. We acknowledge that the Mayor's London Infrastructure Plan 2050 contains a chapter on the circular economy, which we welcome, but sustainability and mitigation of climate change needs to be more integral to growth and development than it is at present.

There are numerous tensions between mitigating environmental impacts for example promoting the increase of electric vehicles will increase the demand on the energy network. Another consideration is that while growth in decentralised energy (district heating) networks is key to reducing overall emissions, tighter emissions limits may have a severe impact on the viability of using CHP plants. Emissions limits may also affect the use of energy-from-waste plants within London, which could force an increase in recycling, but also reduces the supply of heat for decentralised energy schemes. The salient point for this question is that benefits have to be considered as part of a system and in the context of other environmental impacts such as air quality and climate change.

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

In London there are four levels of policy at a European, national, regional and local level. Developing and delivering the solution should not be done in isolation at any one level but requires working together. There needs to be an approach amongst organisations to agree how and where there is development with the least environmental impacts.

There still seems to be an emphasis on fossil fuels and fracking which is not compatible with reducing carbon emissions. At a national level the government has recently announced several policy changes which dis-incentivise reducing carbon emissions and the environmental impact of energy production. For instance the zero carbon homes standard will not be launched in 2016.

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

LEDNet are not responding to this question.

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

The Mayor currently has the environment and transport policies listed below:

1. Business Waste Management Strategy
2. Municipal Waste Management Strategy
3. Securing London's Water Strategy
4. Air Quality Strategy
5. Transport Emissions Road Map – reducing car emissions
6. Managing Risks and Increasing Resilience – coping with climate change
7. Delivering London's Energy Future – halting climate change
8. Connecting with London's Nature – biodiversity strategy
9. All Londons Green Grid – green space strategy
10. Sounder City – noise strategy
11. Transport Strategy
12. Environment Strategy
13. London Infrastructure Plan
14. London Plan

The role of the London Infrastructure Plan could be to bring all the above together as an umbrella document. Solutions to environmental problems can be solved better by considering them in context and as interconnected. For instance the strategy to reduce car emissions will also feed into halting climate change.

Areas like Barking Riverside are planned as sustainable communities, but the reality is something different. There is very little provision for living a sustainable lifestyle, given the lack of places to walk. Building doesn't even help neighbouring older communities to benefit from growth areas, creating severance and hostility. Policies for This has to change dramatically if London is going to cater for population growth on the outsides, while creating a better environment in inner and central London, and getting London to get more physical activity into their lives. How is the London Assembly monitoring this, and how does it plan to mitigate huge increases in car use from new outer London developments in future?

We are more than happy to come and speak to the London Assembly Environment Committee to discuss these issues, or even support the walk in Barking Riverside, where we have been working for a number of years.

Kind regards

Jack Skillen

London Director

Living Streets

4th Floor, Universal House, 88-94 Wentworth Street. E1 7SA

Ian Williamson
Scrutiny Manager
The London Assembly Environment Committee
City Hall
The Queen's Walk
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SE1 2AA

11 September 2015

Dear Ian

London Assembly - Environment Committee, Environmental Pressures of London's Growth - Call for Evidence

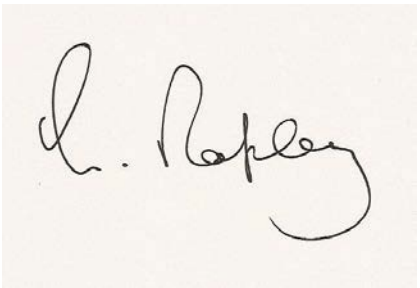
Thank you for contacting the London Climate Change Partnership (LCCP) in regard to your investigation of the environmental pressures arising from London's growth in the long term.

We welcome the Assembly's continuous focus on climate change adaptation, about which LCCP has already provided evidence earlier this year before Baroness Jones of Moulsecoomb AM in response to the Assembly's enquiry into the Economic Impact of Climate Change.

The LCCP intends to consider the issues raised by your investigation while developing its response to the London Assembly Economy Committee's recommendations to the LCCP in its report *Weathering the Storm: The Impact of Climate Change on London's Economy*. We will be more than happy to provide you with a copy of this response, which we are planning to send by the end of October 2015.

In the meantime, I might be available to attend your event on 1st October and I would welcome details about the meeting's time and location.

Yours sincerely



Professor Chris Rapley CBE
Chair
London Climate Change Partnership

LONDON FIRE AND EMERGENCY PLANNING AUTHORITY

Consultation Response

18th September 2015

GLA consultation: Environmental pressures of London's growth

Introduction

The London Fire and Emergency Planning Authority (LFEPA) runs the London Fire Brigade (LFB). The 17 members of the Fire Authority are appointed by the Mayor of London. Eight are nominated from the London Assembly, seven are nominated from the London boroughs and two are Mayoral appointees. LFB is the busiest fire and rescue service in the country and one of the largest firefighting and rescue organisations in the world. We are here to make London a safer city and our vision is to be a world class fire and rescue service for London, Londoners and visitors. We will always respond to fires and other emergencies, but our work has changed over the years with a much stronger emphasis now on fire prevention and community safety.

Response

1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:

a. Energy supply, demand and distribution

The Brigade has been working to reduce its energy demand for many years, reporting for 2014/15 a reduction of 39.39% in CO_2 emissions since 1990 levels. Most recently approval was given to introduce electric cars into the Brigade's fleet of vehicles and further opportunities for low emission vehicles are under review. The Brigade supports actions both within its own organisation and those of others to reduce energy demand and carbon and has installed a variety of technology on its sites including Combined Heat and Power, Biomass boilers, Solar Thermal and Photovoltaics.

b. Water management (water demand, water supply, waste water management, and managing rainwater and flood risk)

Through the development of each of LFEPA's London Safety Plans, the risk of fire and any changes to the risk are reviewed by the Brigade and considered with regards to how we continue to meet the needs of London in providing our service. Water supply is critical for fire fighting and, while we continue to deliver community safety activities which have helped to deliver substantial reductions in fires, water will remain a crucial fire fighting medium for the foreseeable future. Failure to address inconsistencies between water demand and supply will have significant implications for the Brigade.

London's four water companies should ensure that the requirements of the Local Government Association/Water UK document 'National Guidance Document on the Provision of Water for Fire Fighting' are adhered to and that effective communication and emergency arrangements are in place in the event of any drought that might impact on water supplies for fire fighting.

c. Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats, etc.)

The Brigade supports the use of sustainable drainage systems and the increase of green infrastructure to reduce the impact of rain and flood waters on local areas, thereby lessening the potential impact and scale of emergency incidents that would require the attendance of the fire and rescue services.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

No comment

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

No comment

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

No comment

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades?

No comment

Dear Ian

I am responding on behalf of the London Parks & Green Spaces Forum to the questions raised in through the consultation. I apologise for brevity but I don't want to miss the deadline.

Our response focuses on green infrastructure although we see water management & green infrastructure as closely connected issues:

1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades? You may wish to consider:

- Energy supply, demand and distribution
- Water management (water demand, water supply, waste water management, and managing rainwater and flood risk)
- Green infrastructure (green space and waterways, urban vegetation, natural shade, sustainable drainage, green roofs, biodiversity and habitats, etc.)

We are concerned that the pressure for homes and schools is putting many green spaces at risk in spite of their current level of protection.

Up to now we are aware of a number of sites where homes and schools are eroding parts of parks and we do not think that these are being picked up by the GLA. Some Boroughs, such as Bexley, are consulting residents about the disposal of green space for housing and others are likely to follow suit.

We anticipate that these threats will intensify over the next few years.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

The combination of Local Plans & the London Plan afford a good degree of protection but we fear that the next iteration of the London Plan might undo some of these. However they don't cover the piecemeal erosion of greenspace.

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

The National Framework's presumption towards development and developers 'affordability' get out clause are a toxic recipe for overdevelopment and inadequate greenspace provision for poorer households.

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

The Green Infrastructure Task Force (GITF) should soon produce a report that will give several approaches that will create a more strategic approach to the management & funding of green infrastructure. This will contribute to London Infrastructure Plan.

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

The new London Plan needs a new typology for greenspace as the current one is based on size rather than the multifunctional uses/benefits that they can provide. It should also do more to address deficiencies of access to greenspace and incentivise joining up green spaces to provide a better network. Again please refer to the GITF report which spells out the need for green infrastructure to be strategically managed and funded.

Let me know if you need clarification or more information.

Kind regards

Tony Leach

Chief Executive, London Parks & Green Spaces Forum

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London Wildlife Trust

Ian Williamson
Scrutiny Manager
London Assembly Environment Committee
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18th September 2015

Dear Mr Williamson,

ENVIRONMENTAL PRESSURES OF LONDON'S GROWTH

London Wildlife Trust welcomes the Assembly's Environment Committee's investigation into the above matter, especially in relation to the likely impacts of growth on London's natural environment.

The Trust is concerned that despite some marked achievements to secure conservation gains for London's nature over the past 30 years, there is significant risk to this being sustained as London's growth continues. This is likely to occur through changes to policy (e.g. planning) as well as through the direct accumulative abrasion of the quantity and quality of the capital's natural greenspaces, and adverse impacts to populations of some species currently resident here. Whilst there may be means to encourage even more Londoners to become more environmentally sensitive in the lives we lead, we believe that this will require a mixture of incentives and penalties

We set out comments relating to the Committee's questions on the following sheet; some preliminary context is set out below.

London first
London has a long history of saving protecting and creating spaces for the benefits of wildlife and people. These range from the establishment of the first Royal Park in 1851, the saving of common lands (such as Wimbledon Common and Hampstead Heath) in the late 19th century and the opening of the country's second nature reserve, Perivale Wood, in 1902, to the development of the SINC system from the mid-1980s (see below), the growth of 'Friends of' parks groups in the 1990s, and the design of the Queen Elizabeth Olympic Park.

London was at the vanguard of urban nature conservation from the 1980s. It was the first city in the world to be surveyed in detail (by London Wildlife Trust in 1984-5, under commission from the GLC) to establish its ecological assets and identify what needed protection and the right management. The 1980s also saw successful popular campaigns to protect important sites from loss or damage, for example Sydenham Hill Wood, Gunnersbury Triangle, and Oxleas Wood.

London's innovation took further steps in the late 1990s, with bold approaches to incorporate biodiversity into regeneration (such as at Deptford Creek), and the renaissance of green roofs and living walls as appropriate interventions – subsequently incorporated into a range of planning and development

guidance. This has been followed up – since the mid-2000s - by approaches to enhance the biodiversity interest of the spaces in and around social housing (*Natural Estates*).

However, the city can ill-afford to rest on its laurels. The pressures to accommodate a rapidly growing population, a desire to maintain economic competitiveness and meeting the challenges of climate change, without sprawling into the wider countryside, will impose significant pressures onto the existing network of green spaces and water-bodies, and the species that need them in order to survive. Changes to national policies and frameworks to conserve our natural environment have changed significantly since 2010, and have arguably been weakened.

Nature in the city

London is a notably 'green city'; about 47% of its area is classified as vegetated or open water, and over 13,000 species have been recorded here. There are sites of national and international conservation interest within the capital (such as Croham Hurst in Croydon, and Richmond Park), as well as nationally important populations of some species (for example, greater yellow-rattle, stag beetle). However, many species are undergoing significant declines – some of these reflect national trends, others can be attributed to the pressures of an urban environment. In addition, London is a key portal for invasive non-native species, many of which cause adverse ecological and economic impacts within the capital (for example, Chines mitten-crab, zebra mussel, floating pennywort).

This is within the wider context of significant conservation concerns laid out in *State of Nature* in 2013.[1] This showed that even within the urban environment, there are declines of key taxa. For some species, urban areas are becoming more important due to the loss of suitable habitat elsewhere, for example garden ponds may be refuges for amphibians such as common frog, toad and newts. The report a number of key points:

- Of the 658 urban species for which we have data, 59% have declined and 35% have declined strongly. Invertebrates are doing particularly poorly in urban environments with 42% (183) showing strong declines.
- Four of the six truly urban birds have declined, and two – house sparrow and swift – have declined dramatically. Numbers of house sparrows have plummeted by more than two-thirds since the 1970s.
- Despite the fact that brownfield sites provide important refuges for a diverse range of wildlife, including many rare and threatened invertebrates, they are often viewed as ripe for development and receive little protection.
- Urban wildlife plays a crucial role in enriching people's lives: without it, many people would have no access to nature and all the benefits it brings.
- The UK's increasing human population means more pressure on urban green spaces, and less room for wildlife.

Anecdotally and from information we have on developments and changes to garden vegetation, London has been losing greenspace rapidly over the past 30 years. Major developments in the docklands, King's Cross, and other parts of London have seen the loss of urban brownfield sites and other naturalized vegetation.[2] However, these brownfields mostly developed on land that was at one time built up – and have been part of the 'churn' of land in London that has been characteristic of the city since the 16th century. Nevertheless the increasing demand for housing (and supporting infrastructure) means that spaces – whether 'brown' or 'green'[3] – will be under increasing pressure.

The growth of London is unlikely to continue without adverse impacts on our natural infrastructure, even if the city were not to develop outwards into the Metropolitan Green Belt.

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1 Burns F, Eaton MA, Gregory RD, *et al*. (2013) *State of Nature report*. The State of Nature partnership.

2 Scholfield, J. (2002) *Brownfield? Greenfield? The threat to London's unofficial countryside*, London Wildlife Trust

3 The distinction of brown- and greenfield is misleading as to a site's ecological value. It is merely a term to define whether a site has had been previously built on (or not). Brownfield land in London can include woodlands and other sites of nature conservation.

London's wildlife sites
In London (and subsequently most of the UK) the key framework for identifying and focusing nature conservation effort has been through developing a local wildlife site system – the Sites of Importance for Nature Conservation (SINCs) were established across Greater London from 1985, and now number 1574, covering about 19% of Greater London. These 'enjoy' a variety of levels of protection from development. However, this protection is rarely sacrosanct and in many cases planning decisions mean that SINC status is over-ridden by other planning requirements.

A number of SINCs have been completely destroyed, or partially lost or damaged since the system emerged in London. An example is that of Erith Quarry, designated both as a Borough SINC and for housing; a planning decision earlier this year led to the 21 hectares of the SINC being reduced to 3 hectares to accommodate new housing and a school. London Wildlife Trust's forthcoming report *Spaces wild* outlines the variety of threats they face during this period of significant growth in London.[4]

Park space for nature
Promotion of parks and green spaces, including nature reserves, as brought with it challenges. In particular numbers of visitors, which requires management (and therefore resources) have risen considerably over recent years. Some of the issues we faced in the 1980s and '90s have lessened, for example fly-tipping and vandalism, but there has also been a growing demand for dogs and barbecues which bring their own challenges.

Wider public funding cuts are already having impacts on resources to manage land for nature conservation in London. As a non-statutory service budgets for open space management are always vulnerable, and there is a fear that the investment that has undoubtedly taken place over the past 10-15 years is in danger of being undermined. Economic pressures on parks managers is already showing through the cutting of parks staff, exploring ways in which to outsource park management to local communities, and expanding on income-generating events that are often in conflict with a parks' ethos. It was the £7.2bn disinvestment in historic parks between 1981 and 1999 that led to the establishment of the Urban Green Spaces Taskforce in 2002-03 (and thence creation of CABE Space); we do not wish to return to those days.

At a national level the Government has appeared to have turned away from parks and greenspaces. The work of CABE Space helped to stimulate a renaissance in public urban realm design and management, and when they were effectively dissolved in 2011, a significant amount of leadership has disappeared, as well as the stalling of unfinished work. In particular their focus on resources, governance and skills for urban greenspace is now timely, but remains unfinished. No other organisation presently has the resources or political legitimacy to take forward this work with the emphasis it requires. Other agencies working at a national level to champion urban green spaces have either dissolved (e.g. GreenSpace) or having to focus upon core activities. The Parks Alliance has been established to ensure the legacy of the work since the Urban Green Spaces Taskforce is not completely wasted; but this is a symbol of loss and threat rather than one of confidence for the future.

Garden loss and Green Belt
London's 13.2 million garden plots lie outside the wildlife site system, although individually and collectively they are critically important for the capital's wildlife and climate change resilience. The Committee may already be aware of the Trust's work with GiGL and the GLA in 2009 in assessing the trends in garden change. *London; garden city?* outlined that 3000 hectares of vegetated garden land had been lost from London's gardens between 2007-1998; equivalent to about 2.5 Hyde Parks disappearing each year under hard surfacing, paving and decking.[5]

The Metropolitan Green Belt (MGB) covers about 22% of Greater London, and within it (and its inner London equivalent, Metropolitan Open Land) lie a significant number of London's SINCs. It also

[4] Hallam, G & Frith, M. (2015). *Spaces wild; championing the values of London's wildlife sites*, London Wildlife Trust

[5] Smith, C, et al (2010), *London; Garden City? Investigating he changing anatomy of London's private gardens, and the scale of their loss*, London Wildlife Trust, Greenspace Information for Greater London and Greater London Authority.

provides an ecological conduit into the capital's hinterland helping to sustain many of the species seen in London, and helping the city adapt to the impacts of climate change. Whilst the quality of some of the MGB could be much better (for biodiversity, as well as people's access), we do not believe that this is a strong enough reason to suggest that protection of the MGB should be weakened; any review of the Green Belt must emphasise its existing and potential role in making the city a living and comfortable place in which to live – not as a canvas for the outward sprawl of London.

Pressures of growth

The SINC system and the key policies and practices to encourage to protect, conserve and manage wildlife habitats across London (whether in parks, nature reserves, gardens or buildings) all developed during a period when London was experiencing population decline (to just over 6.6. million people). Whilst this was reversed by the early 1990s, it is in the past decade that the capital's population growth has grown sharply and is now higher than it has ever been.

To some degree London's green spaces enjoy a level of protection within the ambitions of *The London Plan* (the one remaining regional spatial development strategy), and how this is committed to urban greening policies, and programmes such as the All London Green Grid. Nevertheless, long-dropped road improvement schemes and river crossings are back on the agenda, as well as development schemes that threaten much treasured natural greenspaces (for example Old Oak Common). And in the background hovers the shadow of airport expansion – either within or on the fringes of London.

This inevitably places significant pressure on our environment, and even with adequate tools and resources in place it is difficult to envisage how the quality and quantity of our natural fabric (soils, habitats, species, water, air) can be sustained if this trend of growth continues. Something will have to give.

The loss of greenspaces, both in terms of quantity and quality, will have impacts on biodiversity. Fragmentation of sites (a characteristic of London) already limits the long-term survival of specialist species, and those vulnerable to environmental and other pressures. As these may be further eroded through accumulative development pressure, so the critical thresholds for some species may be breached. Not only will these have potential implications for biodiversity – a city where our diversity of species is reduced – but also potentially the contribution of the ecosystem services these spaces and their wild communities provide to Londoners.

We further provide a summary of the findings of an audit of biodiversity conservation delivery in London, that we have carried out in collaboration with GiGL and the London Biodiversity Partnership in 2013.[6]

A city that becomes evermore greyer than greener will be less adaptable to the extremes of climate change, and a less comfortable place for us to live, work and play.

I hope you find our response useful for the Committee's inquiry; please do not hesitate to contact me if you have any further questions.

Regards,

Mathew Frith
Director of Conservation

[6] Burrage, J., et al (2013). *All change? the status of biodiversity conservation in London*, London Wildlife Trust and Greenspace Information for Greater London

London Assembly Environment Committee

ENVIRONMENTAL PRESSURES OF LONDON'S GROWTH

July 2015

1. What do you see as the most significant environmental impacts and implications of London's growth over the coming decades?

In short these are likely to be;

Loss of green space from development pressure

- Weakening of planning policy, under-resourcing of planning departments within local authorities, loss of ecological expertise from local authorities, high (and ever increasing) land values, and London's national/international status (reflected in airport expansion, HS2, etc.) will all contribute to this.

- Increased fragmentation as small sites/garden lost between larger green spaces; this will have adverse impacts on viable populations of some species.

- High number of 'small encroachments' on green spaces (often of 'low' value); this 'nibbling' can lead to a significant but largely invisible cumulative impact – for example how such sites help to buffer and support high values sites.

Degradation of greenspace quality

- Over-use. Many parks and other greenspaces are witnessing ever increasing usage; a testimony to the work of many in promoting the value of these spaces and investing in them over the past 15 years. Whilst future resources are likely to be tighter it's not clear what impact this will have on usage. However, very large numbers of people can have adverse impacts on the ecological interest of a site if not effectively managed. These will be physical, noise, wind tunnel effects, shading effects, likely increase of domestic cats and dogs, and general disturbance (for example of breeding birds affected by human presence).

- Under-use. Conversely spaces which are not used or promoted maybe perceived to be of little value and vulnerable to designation for development.

- Skills shortage. There is a widespread shortage of skills in the survey, evaluation, and management of wildlife and ecologically important sites, that will have an impact on planning decisions and on-site management. If these are not recognised, resourced and integrated into decision-making at the right level there is a danger that the quality of our natural environment will degrade over time.

- Water abstraction

Impacts on species

- Disturbance through increasing demand on greenspace usage is likely to have the potential 'pushing out' populations of some species already 'on the edge' of viability in London. These might include skylark (a ground-nesting bird) and water vole. There is also that local extinctions might cause a knock-on collapse of ecological processes – loss of some species can have significant impacts on food chains or other ecological links even between plants and animals.

- Construction of more energy efficient buildings provide less space for species such as swift, house sparrow, house martin, and bats etc., to occupy them.

- Invasive non-native species (INNS) are already an issue of ecological and socio-economic concern.[7] London is often the first point of entry for some of these (for example oak processionary moth), and control measures are usually 'too little too late' although often very costly.

Disconnection and fear of nature

- As more people live and work in the city, compounded with a growing disconnection of society from nature suggests that interactions with some wild species - crow, gulls, parakeet, fox, bees & wasps - become pushed to limits and will lead to measures to control/eradicate them.

From London Wildlife Trust's perspective the critical driver is to provide the space (in terms of quantity) and habitats (in terms of quality) in which wild fauna, flora and fungi can flourish. If these are healthy habitats, they help to meet more effectively some of the other functions required to make the city more pleasurable and comfortable for people to live, work and play in.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth?

From a natural environment perspective the key plans and policies that affect the protection and conservation of assets, are the following:

EU Directives, for example

- Water Framework Directive 2003

UK Legislation, for example:

- National Parks & Access to the Countryside Act 1949, Wildlife & Countryside Act 1981, Countryside & Rights of Way Act 2000, Natural Environment & Rural Communities Act 2006

Planning

- National Planning Policy Framework (2012), especially paras 118 & 119.
- The London Plan (2011, 2015), London Plan Supplementary Planning Documents (eg All London Green Grid, 2012) and Mayoral Strategies (for example Biodiversity, 2002, London Tree & Woodland Framework, 2005).
- London borough Local Plans/Development Frameworks and SPDs

Strategy and action plans, for example

- Biodiversity 2020 (England Biodiversity Strategy)
- England Forestry Strategy
- London Rivers Action Plan
- Thames River Basin Management Plan
- London Climate Change Adaptation Strategy

These are overseen and delivered by a plethora of stakeholders, from Government agencies and local authorities, to NGOs and community groups. However, in our experience there is a dearth of leadership and a growing 'atomisation' of activity, exacerbated by deliberate policy changes at a national level (for example in biodiversity action planning) and public funding cuts.

The Mayor/GLA cannot be expected to drive forward biodiversity conservation policies without the support of the borough councils, or NGO partners that have been developing and delivering on such work from times before the GLA was created. Future buy-in and support from all stakeholders will be

[7] The *GB Invasive Non-native Species Strategy* (2015) identifies an annual £1.7 billion cost to the economy from INNS.

critical – but that will depend on strong leadership and concomitant level of commitment from the Mayor. Resources will need to allocated in the GLA to ensure that this can be achieved.

It's been our concern (and I don't believe we are alone), that the leadership that the GLA once demonstrated on these matters has diminished. Leadership and work directly related to the biodiversity conservation has largely been sidelined. Whilst it has been argued that key elements of the Strategy have been embedded within the delivery of green infrastructure (GI), there are aspects of GI – depending on the focus of its interpretation - which potentially fail to address a number of concerns regarding biodiversity conservation or are in danger of diluting it. Laudable measure to enhance street trees, enhance parks for leisure, improve the environmental performance of buildings through greenery, and enhancing the street scene with ornamental vegetation can secure gains for biodiversity. But equally they can make little difference at all. Whether such measures reflect local or regional biodiversity objectives is not something we experience as being rigorously adopted.

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

A lot of the relevant policies are in place; the key concerns are application and enforcement. These are partly the result of a long-standing systemic inability (or even unwillingness) to recognise the value of the natural environment and the role it has in making the city liveable – and the role we should be playing (as a city) in conserving our natural heritage. The cultural 'mindset' of the city is still largely anti-nature, and we would expect a new Mayor to address this (in a way similar to the way that London's car dominance has begun to be pushed back by Mayors with a specific focus on buses, pollution and cycle transport).

Whilst there are clear opportunities through green infrastructure, ecosystem services, and landscape scale conservation (e.g. Nature Improvement Areas, Living Landscapes), what is becoming clear is that a new policy landscape is emerging, driven very much by national government. One of less regulation, a growing distrust of science-based evidence, financially and politically constrained public authorities, and our world where our nature environment is being ascribed an economic value (or not).

There is a need for independent ecological expertise in development of Local Plans/LDFs.

There needs to be better and transparent accountability for loss of biodiversity within the planning system e.g. through biodiversity offsetting.

There is a lack of understanding about what constitutes 'good' biodiversity work leading to lack of funding for the key ecological assets.

There is need for more robust GI requirements that address biodiversity needs, and specific guidance for local authorities on what a good GI for biodiversity looks like.

<u>Mayor & Greater London Authority</u>
The MoL/GLA no longer has a dedicated 'biodiversity team'; changes to its environmental work occurred in 2009, and it has subsequently focused on project work (rather than strategy). The current focus on the All London Green Grid and a range of funded initiatives (notably Re:Leaf (trees) and Pocket Parks) has delivered some benefits for the natural environment.

The Mayor's *Biodiversity Strategy* (2002) has been recognized as out of date, and there is some commitment to update it, although the preference appears to await to develop an over-arching Environment Strategy. Although we recognise the merits of a developing a comprehensive and holistic strategy we would be concerned if key biodiversity measures were diluted and down-graded.

The GLA hosts the London Wildlife Sites Board but this has little power other than make recommendations for the boroughs to take forward.[8] The Board has not yet been 'tested' as to any decisions relating to a proposed variation of, de-notification or notification of a Site of Metropolitan Importance. There is an intrinsic weakness within the powers of the Mayor not being able to instruct local authorities on SINC designation; the lack of such strategic overview is of concern.

Borough councils

London's local authorities are still – collectively – the most important players in respect of biodiversity conservation in the capital – both as planning authorities and the owners/managers of significant tracts of land. Their decisions can have a significant influence on the quality and quantity of ecological assets in their area. Some have been at the vanguard of conservation activities dating from the 1980s (e.g. Lewisham, Bromley, Brent) and many others are demonstrating innovative approaches to embedding biodiversity into their operations (e.g. Kensington & Chelsea). Nevertheless, in this time of public funding cuts, non-statutory services (such as open space management) are vulnerable, and there are fears that the considerable gains made in establishing nature reserves, enhancing parks for wildlife, delivering local Biodiversity Action Plans, and promoting wildlife through activities over the period 1990-2010 will be lost as further cuts are made.

A majority of London local authorities still employ ecology or nature conservation officers, based either in (broadly) leisure services or planning departments. These officers meet regularly as the London Boroughs Biodiversity Forum, which has helped to inform the design and delivery of the London and borough Biodiversity Action Plans. However, most officers are now asked to 'spread' their responsibilities, take on more work, or are increasingly subject to meet other operational targets. Others are also vulnerable to the next round of local authority budget cuts. Consequently the delivery of nature conservation work is being delayed stalled, or delegated to the voluntary sector and/or local groups (usually without the required resources).

Changes in resource allocation, however, don't hide some systemic weaknesses within local authority delivery that we have experienced over many years. Most ecology officers are often 'lone' voices within their authority having to meet a range of often conflicting demands. The most significant issue is where within the authority the post is embedded; those in planning (a minority) are best placed to influence local plan development to be sensitive to biodiversity, and help the right decisions are made in respect of development control. Those in parks services are well placed influence site management, and engage with community group's interests to further wildlife in parks. Rarely are borough officers able to address both areas.

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

The recent Mayoral initiatives of the All London Green Grid and the Infrastructure Plan 2050 (with reference to GI) are significant steps to take means to better integrate the recognition of GI into the design and management of London. However, the drive for a broader green infrastructure doesn't necessarily address biodiversity conservation issues (especially those related to animal species).

The current paradigm towards delivering landscape scale changes offers opportunities in London, through Nature Improvement Areas (such as the Greater Thames Marshes), Living Landscapes (by the Wildlife Trusts), regional parks approaches (such as Colne Valley and Wandle Valley), and the strategic ambitions of the All London Green Grid. In many ways biodiversity conservation is embedded within their ambitions (and arguably has shaped much of it, as it relies an ecological understanding of landscapes and environmental systems); the key is to ensure that wildlife objectives are secured within an environment with less resources, less regulation, and where other demands or requirements are prioritised.

[8] http://www.london.gov.uk/priorities/environment/greening-london/biodiversity/sites-importance-nature-conservation

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan?

We strongly recommend that the future growth of London should be defined by environmental parameters. The Mayor should be articulating this not as a luxury or 'add on' (let alone a 'barrier to growth'), but essential if the city is to remain a pleasant place to live.

We would want to see a clear commitment to the protection and conservation of London's wildlife and natural environment (rather than some elements of it) would demonstrate that the Mayor and the GLA wishes to strengthen the legacy that it has inherited (most of it is intact, despite recent years), and provide clear leadership to ensure that its ambitions for the capital take full regard for the diversity of the non-human inhabitants we share our city with.

In terms of London's biodiversity – the city's wild fauna, flora, fungi habitats, soils and natural features – this relates to sustaining minimum quantities and qualities of London's SINCs and habitats, populations of key species. In this respect we support one of the principal ambitions of the proposed Greater London National Park City to increase the coverage of greenspace of London (based on its existing size) from 47 to 51%; however, this will need to be combined with concomitant increases in habitat quality.

This requires a new baseline assessment of habitat and species quality and quantity across Greater London. Greenspace Information for Greater London[9] holds a comprehensive data base of such data (first developed in 1984-5), but this reflects the contributions of partners and is consequently uneven in its spatial applications and age across the capital. An incoming Mayor, in order to determine the parameters of environmental limits, will require accurate data on which to determine policy and measure progress – and therefore should resource a review and update of this database as required (in close co-operation of GiGL and its partners).

We recommend that the various pieces of work undertaken so far (Infrastructure Plan, ALGG, etc.) need to be better integrated to the city's future planning – into something akin developed by Birmingham for its Natural Capital City programme.[10] This takes a notably deeper and strategic approach than that has been taken by the GLA; Birmingham is the first UK city to undertake a comprehensive ecosystem services assessment utilising the National Ecosystem Assessment methodology, and the first city in the world to utilise this same methodology to construct a multiple challenge map of the city, showing the supply and demand for ecosystem services.[11] It supports Your Green and Healthy City SPD, and the city's Parks & Open Space and Nature Conservation Strategies.

[9] http://www.gigl.org.uk/our-data-holdings/
[10] http://www.birmingham.gov.uk/greenlivingspaces
[11] Hölzinger, et al. 2013. *Ecosystem Services Evaluation for Birmingham's Green Infrastructure*, Birmingham City Council

ADDENDUM 1:
AUDIT OF BIODIVERSITY CONSERVATION DELIVERY IN LONDON
London Wildlife Trust/GiGL, 2013

SUMMARY OF FINDINGS FROM REPORT

1. The frameworks and resources available for delivering biodiversity conservation across London (and at a national level) have undergone significant evolution over the past 30 years – largely embedding nature conservation across a range of policy drivers. However, since the publication of the Natural Environment White Paper (NEWP) in 2011 there has been a marked change. There is a perceived lack of leadership for London's biodiversity due to challenges brought about by the recommendations from the NEWP and *Biodiversity 2020* (the England Biodiversity Strategy). Structures are being revised while approaches to conservation are responding to overarching reviews of Governmental responsibilities for the natural environment and its emerging policies.

2. The planning context at a national level has dramatically changed since 2011. *The London Plan* clearly gives protection to strategic wildlife sites, and embeds targets for habitat restoration and creation, together with commitments towards urban greening. However, national Planning Policy Statements on nature conservation – and other relevant areas - have been withdrawn and superseded by the National Planning Policy Framework which establishes a presumption in favour of sustainable development, but with a distinct emphasis on economic growth.

3. Most London boroughs have policies in place to protect and enhance biodiversity through Local Development Frameworks (LDF) but it is unclear who is monitoring their implementation. There has been limited recognition in the LDFs of geological and landscape conservation. Nearly half of all boroughs have instigated neighbourhood planning with regards to designated areas and forums. Consequently there is an opportunity to ensure the adoption of biodiversity and geodiversity action in Neighbourhood plans. Nevertheless, how these relate to regional and national biodiversity objectives is not being monitored.

4. The London boroughs collectively recognise 1574 [as of 2015] Sites of Importance for Nature Conservation (SINCs) covering over 30,000 hectares (ha) and 19% of London's total land area. The level of protection awarded is subdivided into the following categories - Sites of Metropolitan (SMI), Borough (SBI) and Local (SLI) Importance. The Greater London Authority helps designate SMIs (currently 139), but other elements are delegated to the boroughs. However, there is now no co-ordinating body to comment on planning applications or to accurately record and promote positive management across the SINC network.

5. The need for up-to-date biodiversity data has increased with demand for land for development as the population of London has grown. Greenspace Information for Greater London (GiGL) actively records positive management and is working with its partners to keep centralised and current data on London's habitats, protected species and designated sites. Whilst there are some boroughs that have recently surveyed the condition of their SINCs networks (and as a result are reviewing these for their Local Plans) original designations, most aren't. A few boroughs have SINC data that hasn't been reviewed for 20-25 years.

6. The London Biodiversity Partnership has published, reviewed and wholly or partly delivered on 8 Species and 11 Habitat Action Plans under the London Biodiversity Action Plan (2000, last reviewed 2008). However, the majority of Action Plan working groups coordinating action plans have not met for some time and are not currently active (bar those for bats, water vole, reedbed and rivers & streams). Some plans continue to be implemented but there is a lack of support in terms of resources and a changing political context. This UK Biodiversity Action Plan process ended in 2010; the national approach through the England Biodiversity Strategy is relying on local coordination with fewer resources.

7. Most London boroughs have adopted BAPs through local partnerships. Whilst there are many new and renewed borough BAPs, a few are inactive and some remain undeveloped and un-adopted. It is unclear how or whether biodiversity conservation delivery is formally adopted as a 'statement of intent' within these boroughs. Some action plans have moved on and are being delivered through other mechanisms. There is danger biodiversity outcomes are being lost or distracted as a result.

8. There is a growing body of evidence outlining the benefits of access to nature for health and wellbeing. The Areas of Deficiency in access to nature to the nearest accessible SMI or SBI was nearly 25,000ha in 2009 (c15.6% of London's total area). Several boroughs are addressing this issue through strategic frameworks like the All London Green Grid.

9. London's nature is characterised by a high proportion of non-native species, a number of which are invasive (or problematic) in character. The impact of Invasive Non-Native Species (INNS) in the capital is confined to a relatively small number of species and particular circumstances. London's Invasive Species Plan has been published by the London Invasive Species Initiative; 11 species are highlighted as a management priority; most notably Japanese knotweed, Himalayan balsam and giant hogweed.

10. Landscape scale approaches are increasingly recognised as the contemporary paradigm for biodiversity conservation management. Seventeen approaches are being developed which recognise important characteristics or specific project areas in the region. However, mostly due to the scope of their ambition implementation is at an early stage.

11. London has experienced a growing trend for local ruralistic activities since the mid-2000s. Beekeeping, 'pictorial' meadow-making and local food-growing are three current expressions of this which demonstrate the energies within many local communities, and the potential for nature conservation organisations to reach new and broader audiences. However, many such projects – driven often via social media - lack strategic coordination or link into existing programmes of biodiversity conservation activity. These are challenges for the sector.

12. Resource priorities for delivering biodiversity are being affected by significant reductions to resources and funding across a whole range of public sector services. For London boroughs the focus is increasingly on management plans and community engagement activities. A substantial impact of spending cuts has already been felt due to previous cuts. The planned 10% spending cut by local government for 2015-16 is likely to have further implications for biodiversity conservation delivery. Half the boroughs responding to a survey reported a reduction in biodiversity funding between 2007-12; financial constraints and loss of staff were the most common challenges encountered. Alternative sources of funding are being sought to offset financial cuts.

13. Hundreds of 'friends' groups of local parks and spaces are now active in various ways across London. Many are involved in to biodiversity conservation – and others want to more in this respect. These groups could have a significant role in meeting strategic conservation priorities but expectations may be unrealistic, especially without support from local authorities.

14. Delivery of geological conservation is significantly behind that of biodiversity conservation. London contains 7 geological SSSIs, 2 designated Regionally Important Geological sites (RIG) and 1 Locally Important Geological site (LIG). An additional 26 RIGs and 15 LIGs have been recommended for designation by the London Geodiversity Partnership.

London Assembly Environment Committee - 10th Dec 2015

London Sustainable Development Commission Written Input

Background - LSDC

Greg Barker was appointed the new chair of the LSDC in Nov 2014 – the LSDC are the independent advisors to the mayor on his SD duty. The new LSDC's mandate from the Mayor, includes:

- Advancing progress on making London a clean tech centre (to match London's reputation as the world leader in low carbon finance)

- Supporting progress on the infrastructure plan as a member of the Mayor's Infrastructure Delivery Board. This will help ensure London delivers its infrastructure in an integrated and sustainable way, and that the city makes the most of the green investment opportunities this brings.

- The LSDC have been working over the last year to develop priorities and a work programme for the commission. This of course includes the Circular Economy.

Circular Economy

From the London 2012 Olympics and Paralympics, lessons can be drawn from the re-use and minimisation of waste in construction circles but also in other areas and the Commission's sense is that CE thinking can be broadened for wider business and societal benefit including how London uses resources efficiently and continues to position itself as a lead example of action on the benefits of sustainability.

The aim of the work the LSDC is doing is to champion and facilitate the drive to a CE for London by 2050 in support of the London Infrastructure Investment Plan (LIP). We think a circular economy is one in which:

- Natural resources - including energy, water and raw materials - circulate in their highest value use;
- Waste is eliminated through reuse, refurbishment, remanufacture and recycling; and
- Toxic chemicals are minimised
- It will also help reduce London's greenhouse gas footprint, and increase its resilience

The circular economy is a fantastic opportunity for London, not only because the capital has the skills necessary to really establish itself as a leader in this regard, but also because we see hundreds of examples of it in action already alive and kicking in the capital and the capital has the potential to grow this area and become a world leader.

What is a 'circular economy'?

A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extracting the maximum value from them whilst in use, then recovering and reusing products and materials. It includes a hierarchy

of options, starting with the most simple and low value option of recycling waste to recover materials, and moving to the redirection of unwanted goods for reuse by new owners in second- hand markets, to remanufacturing and replacing components of a product for resale. These may require companies to create new business models or processes, with take back schemes, and redesigning products for disassembly and remanufacturing or recovery. Ultimately products may also be offered on a leased rather than an owned basis, in something known as 'servitisation', so that single assets can be used by more people, reducing the pressure on resources, embodied carbon and embodied water entailed in the materials and processes required to manufacture them.

The CE subgroup is chaired by Paul Turner (Lloyds Bank and Deputy Chair of LSDC).

Progress to date
The priority areas the CE sub group are currently looking at are:

i. **Developing a Route map:** Inputting and advising on the CE route map being produced by LWARB as part of the LIP. The group are also exploring ideas around developing a potential Business Commitment around the Mayor's Circular Economy Commitment (similar to the GLA's Business Energy Challenge programme) and exploring the potential for public and private procurement to drive the CE.

ii. Potential Business CE Commitment - Background

- Business accounts for an estimated 4.28m tonnes of waste per year, or c. 20% more than all municipal waste
- London's economy is dominated by service sectors, especially the financial services sector, which contributes the lion's share of GVA with large numbers of employees Professional, scientific and technical services as the largest employers of all. In addition, construction is very significant, whilst London's manufacturing sector – although modest – is focussed on food and drinks, wood, paper and printing, and textiles and apparel, all of which are focus areas for the circular economy.
- LSDC are currently exploring the potential for a 'Mayor of London's Circular Economy Commitment' to raise awareness of the Mayor's circular economy vision, and London's C&I waste targets.

iii. **Research and Evidence Base:**

Employment and the Circular Economy – job creation through resource efficiency in London
The Commission has launched a report (9th Dec) looking at the potential for job creation in London based on three scenarios - the most desirable being a re-using, remanufacturing, repair and rental revolution, which the report finds could create up to 40,000 new jobs in London by 2030. The report has been authored by Peter Mitchell, Head of Economics at WRAP and in partnership with the London Waste and Recycling Board and the Greater London Authority.

Read the report in full here: Employment and the circular economy - job creation through resource efficiency in London

At the request of the Mayor LWARB will also spell out in more detail how these jobs will be created and the types of investment required to bring about this transformation by 2036, in a route map document – Towards a Circular Economy.

Initial focus for the route map will be on the built environment, electricals, textiles, food and plastics. These areas have been chosen because of their high environmental impact, their retained financial value and potential for re-use.

In the advance introductory section of this report – Context and Opportunities – also released on the 9th Dec, LWARB predicts that moving to a circular economy could bring significant financial benefits to London.

In addition to creating thousands of new jobs for Londoners, a circular economy in London could be worth at least £7 billion every year by 2036 in the built environment, food, textiles, electricals and plastics sectors alone. In early 2016 LWARB will be approaching businesses and organisations working in these 'focus areas' to identify what collaboration can take place to accelerate London's transition to a more circular economy, and realise these benefits.

The London Sustainable Development Commission welcomes the development of a circular economy route map for London and looks forward to actively engaging with LWARB as the route map is developed in order to ensure that London becomes recognised as a leading circular economy city.

Read the context and opportunities document here: Towards a circular economy - context and opportunities

iv. **Funding the Transition:** the sub group will be looking to explore what financing may be needed to support the transition to a CE. This may include:
- A potential windfall tax
- Working with the finance sector to explore how financing mechanisms may need to change as we move to a more servitisation model.

v. **Showcasing Examples:**
- LSDC will be looking to work with London and Partners and others to market London as a CE centre.
- The LSDC is working with the GLA via the London Leaders programme to identify, champion and support suitable circular economy SMEs to benefit from the Ellen MacArthur Foundation's CE100 programme support.

Potential questions and issues for the Assembly to explore further:

- London's approach to materials and waste needs a shot in the arm
- Household recycling has stalled and the approach to waste collection and management is chaotic and inefficient (London has fallen way behind other comparable world cities in this regard)
- Commercial and Industrial waste management is a blind spot - little data and an untapped resource
- But CE represents a huge opportunity for London both in waste management and upstream changes to materials, offering jobs (see report), leadership and inward investment as it builds on London's recognised capabilities in entrepreneurship, design, and finance.

Key changes required:

- Harmonisation of municipal waste collection, potentially with new governance, if required - this would save millions, clean up London's streets and significantly advance recycling and reuse.
- Removal of barriers to progress
- Long term vision of how London's infrastructure will enable CE: space for re-manufacturing, for reuse and recycling, some limited incineration; exemplars of industrial symbiosis; mechanisms (tenders to consortia for Opp Areas?) for innovation
- New, step change in public sector procurement to drive the transition and demonstrate CE principle in action
- Action to become the leading city in terms of supporting the finance required for CE - building on our financial sector prowess
- London's visible commitment to deliver on targets and direction in the EU package that came out recently - energising programme

Site Visits:

The Assembly have asked about site visits. Bridget Jackson (LSDC Commissioner) would be happy to host them in PwC to show them how business can take multiple small steps to transition the capital towards 100% reuse and recycling so feel free to offer that, and if it helps link them to our Lessons Learned doc: http://www.pwc.co.uk/assets/pdf/pwc-going-circular-2015.pdf

The LSDC suggests they visit a few other places that show the CE in action:

- Veolia's MRF in Southwark is impressive
- Environcom reuse centre - whitegoods
- NUS headquarters – Phillips Lux model
- Proper Oil – Southwark

There are many exemplars of the CE that the LSDC would be happy to provide further details on for potential site visits.

NEW WEST END COMPANY

Bond Street | Oxford Street | Regent Street

Ian Williamson,
Scrutiny Manager
London Assembly,
City Hall,
The Queen's Walk,
London SE1 2AA

By email environmentcommittee@london.gov.uk

Friday, September 18, 2015

Dear Sir/Madam,

NEW WEST END COMPANY'S RESPONSE TO THE LONDON ASSEMBLY CONSULTATION ON THE ENVIRONMENTAL PRESSURES OF LONDON'S GROWTH

I am writing on behalf of the New West End Company in response to your call for written evidence to the London Assembly consultation on the environmental pressures of London's growth. The New West End Company is the UK's largest retail Business Improvement District (BID) representing 600 businesses in the retail heartland of London's West End: Bond Street, Oxford Street, Regent Street, and 22 surrounding streets. London is the powerhouse of the UK's economy, and Bond Street, Oxford Street and Regent Street are all major contributors to London's economy, attracting over 200 million visits a year, generating over £8.8 billion in annual sales, and employing 65,000 people.

However, in order to ensure that growth and development across London is sustainable, politicians and decision makers must ensure that the environmental impact of London's growth is suitably managed. Consequently, as the voice of the West End and its retailers, we welcome the chance to respond to this consultation. Given this context, the New West End Company consider air pollution, increased traffic, and increased congestion of public and green spaces as having the most significant environmental implications of London's growth over the coming decades.

At the New West End Company we recognise the tough decisions the London Assembly and The Mayor will have to take in these matters, but we would firstly suggest that improving air quality throughout the West End is a high priority for businesses and shoppers. The proposed introduction of the Ultra-Low Emission Zone (ULEZ) in Central London will help address these issues, and we would support the early introduction of these regulations from January 2018, if not earlier. We believe that dirty vehicles should be priced off our streets, and waste and freight traffic should be consolidated and reduced in partnership with business.

Morley House, 320 Regent Street, London W1B 3BE
Tel: +44 (0)20 7462 0680 Web: newwestend.com

BOND ST LONDON | Est. 1686 OX ST. IT ALL STARTS HERE REGENT STREET

Registered Office: Morley House, 320 Regent Street, London W1B 3BE
Registered No. 04039488

Secondly, radical action to reduce traffic in London, especially on Oxford Street and Regent Street, is now essential. Specifically, we would like to see local boroughs and councils trial more regular traffic free days (especially at weekends), as well as institute a ban on unregulated pedicabs. Additionally, the New West End Company would like to see action by public authorities and businesses to reduce day time delivery and refuse collection traffic, as well as a major shift to electric vehicles. Other policy options that we feel would be effective in addressing these traffic issues include a move to 20mph speed limits in key areas of zone 1, and more space for responsible cycling.

Finally, NWEC would like to see a reinvention of London as a place for people, with more pedestrianised spaces by 2020, together with consideration of a dedicated tram, guided bus etc. for Oxford Street. Furthermore, we would like to see the development of a robust management plan to deal with the 60m more visitors London can expect with the arrival of Crossrail, and potential match funding for property developers providing new green spaces and public places to increase dwell time and quality of life for visitors, workers and residents. Such actions we hope will deliver streetscapes that are envied across the globe, and will help us to compete with other comparable world cities such as New York and Paris, as well as Asian cities such as Shanghai and Singapore.

Furthermore, all levels of Government should now come together with business to prioritise the West End as an Air Quality improvement zone further to the recent publication of the Government's strategy. This dedicated plan would take these and others' ideas forward in a coherent way under the West End Partnership and provide a benchmark for other cities to follow.

We believe that if these proposals are enacted they will go a long way in addressing the environmental pressures expected to result from the growth of London over the coming decades, and as the voice of the West End we offer our full support to the addressing this issue.

Yours sincerely,

Richard Dickinson
Chief Executive
New West End Company

Call:http://www.london.gov.uk/mayor-assembly/london-assembly/investigations/environmental-pressures-of-londons-growth

Urbanisation result in many environmental challenges including increased flood risk from impervious surfaces, the urban heat island effect, air quality, and deterioration of other urban ecosystem services. London's growth will add to the demand for interlinked water, energy and food services. Fortunately, London has set itself ambitious targets that aim to reduce its environmental impact despite its population increase. The use of Green Infrastructure (GI) combined with localised and integrated water management has the ability to address several of these issues. The coming decades should use the full potential of this integration known as Smart Blue Green Assets (SBGA).

One of the greatest challenges that we are facing is to achieve simultaneous reduction in demand, both for energy as well as water. As London does not posses large renewable energy schemes, and as the climate change mitigation targets it has adopted are more stringent than the national goals, it will have to do much more than the UK in its entirety to reduce water and energy demands. SMBA have an important role to play in reducing the demand for energy by reducing the urban heat island effect and therefore the cooling load on air-conditioning systems. Additionally, they can bring down the energy input required to keep the interior of buildings warm in cold seasons, e.g. through the insulating properties of green roofs. Also, the seasonal cycle of vegetation can be utilised by choosing plants which have leaves in the summer, thus providing shade, and are bare in the winter allowing heat from the sun to act on the building. This has the potential to substantially reduce energy demand, particularly of office buildings. Energy savings have the potential to translate to reduced demand for fresh water by diminishing the need for cooling processes at electricity generating stations. This is important as the withdrawal allowances from traditional sources are reaching their limits, prompting energy-intensive expansions of the water sector such as the creation of desalination plants.

SBGA also contribute significantly to both water supply and flood protection. Such infrastructure can be utilised as a decentralised system of rainwater collection that will reduce flood risk by increasing the infiltration capacity of the urban environment. Furthermore, harvested rainwater is a valuable source that can be reused locally and significantly reduce the residential and commercial water (and hence energy) demand. Combined with a set of rules for rainwater storage operation based on the weather forecasting, the SBGA can maximise the flood mitigation, runoff reduction and water reuse potentials. The implementation of the Green Grid scheme is a positive step, however, the risk from pluvial flooding is present regardless of distance from a water body and therefore requires dispersed solutions outside of what would be thought of as parkland. Due to the size of London the implementation of these dispersed measures will need to be completed in a piecemeal fashion as dictated by planning regulations. However this is likely to be met with resistance from developers due to insufficient evidence for green infrastructure long-term performance and operational and maintenance costs.

Beyond environmental issues, SBGA have the ability to improve the wellbeing of citizens across London by improving mental health, physical health, and the city's liveability. Urban green spaces incentive citizens to walk and bike, thus reducing the pressures on transport networks. London is failing to meet several EU regulations on air and water quality standards. As studies have demonstrated vegetation's ability to absorb pollutants from the air and runoff, if designed in such a way that water is

Westminster City Council welcomes the London Assembly Environment Committee investigating the environmental pressures expected to result from the growth of London over the coming decades.

We are exceptionally committed to supporting the GLA's agenda on ensuring that key infrastructure and investment needs are identified, planned for and supported in the short term to enable this growth to happen sustainably and not result in negative environmental or social consequences.

We will be launching a Greener City Action Plan (GCAP) for Westminster on 19th October. The GCAP sets out our long term vision for a sustainable Westminster against a backdrop of economic and population growth. It also develops a road map for action in a number of sectors including energy, water and green infrastructure.

We feel that increasing energy demands and air pollution are the key issues facing central London over the next few decades.

Specifically, we would ask the GLA to continue to provide leadership to Borough's on energy policy within the London Plan. The Government is making significant policy interventions which will hamper our collective efforts to deal with the London energy trilemma (secure, affordable and low-carbon energy). Specifically, we would currently welcome an early intervention scheme whereby the GLA provides a strong policy basis for a local energy requirements to ensure that new developments place as little extra demand on the energy network as possible, countering the abolishment of the Government's zero carbon homes policy.

We have attached a draft copy of our GCAP which gives details of what we consider to be our main environmental issues, policy solutions and key actions for the next decade. Your feedback is welcomed.

We would also specifically welcome the opportunity to work closely with you to ensure that GLA policies are applicable on the ground.

Heather Acton

Westminster City Councillor, Hyde Park Ward

Cabinet Member Sustainability and Parking

provided to plants during critical periods for their growth cycle, SBGA could prove to be very beneficial to providing aforementioned ecosystem services crucial for human wellbeing in cities.

The goals currently set out by the Mayor of London are more ambitious than those by the national government. These goals have been set even in the face of high levels of population growth. These objectives galvanise the need for swift action.

National building standards and regulations, such as the discontinued Code for Sustainable Homes and Green Deal, would be beneficial, however these are unlikely to come into effect quickly enough to meet the environmental goals set by the Mayor. Therefore local intervention and guidance on planning regulations is necessary in order for SBGA to be implemented on a wider scale. It is unlikely that this strategy could be funded entirely by government, and a large portion of the cost will be passed onto private developers. It is therefore critical that the benefits of green infrastructure to developers and other potential stakeholders such as infrastructure owners, in terms of attractiveness and multifunctional benefits, are clear.

A unified SBGA strategy that combines several different strands (energy demand, flood risk and food security) would follow other major cities in creating innovative strategies. These include Rotterdam and its Living with Water project; Copenhagen, through Cloudburst; New York, with PlaNYC; and Singapore through the Active, Beautiful, Clean (ABC) strategy. The full scale implementation of smart, multifunctional green infrastructure addresses a spectrum of issues that would be of interest to all mayoral candidates. The issues and proposed solutions discussed above are being explored extensively by the Urban Water Systems and Interactions Research Group at Imperial College London led by Dr Ana Mijic and Prof Cedo Maksimovic and their PhD students Xi Liu, Rui Pina, Simon De Stercke and Filip Babovic (http://www.thirstyfuture.com).

City for All

Greener City Action Plan Summary

2015-2025

City of Westminster

westminster.gov.uk #CityforAll

Executive Summary

Westminster's environment is a vital ingredient in the ambitions for the City and for the quality of life of residents, workers and visitors. Better air quality improves health; a low carbon, locally produced energy supply enables businesses to grow; and sustainable transport systems connect people and jobs.

The Greener City Action Plan (2015-2025) sets out the ten year vision for how we will maintain and improve the environment for our residents, businesses and visitors. Westminster's attractive green spaces and clean environment are often quoted as factors encouraging inward investment, and economic success, through tourism, business location and somewhere people want to live.

The City Council has a reputational and leadership responsibility to protect and improve the environment for future generations. Work will continue to ensure Westminster complies with statutory requirements and also to showcase our ambition to pilot and champion high profile, innovative projects and to share best practice.

The Greener City Action Plan prioritises action across eleven work themes. This is a summary of the vision and sets out where we need your help. The full Greener City Action Plan (*https://www.westminster.gov.uk/greener-city*) details what we intend to do, working with communities and partners to achieve our common goals and objectives.

1. Addressing noise pollution across the City

Did you know?

The top five "noisiest" wards in Westminster show an increase of 30% in complaints in the last 4 years. The main source was from construction sites.

Issue	Westminster's noise pollution is a serious environmental issue. Every year Westminster receives the most noise complaints in London and, in 2014, 17% of residents felt that noise impacted their life in a negative way. Road traffic is the main source alongside plant and machinery, construction work, neighbourhood noise, commercial premises and aircraft.
Challenge	Increasing amounts of development and construction and 24 hour tube extensions will impact on noise in Westminster.

COMMITMENTS	
Top 3 actions for us	• Enforce a 'no unnecessary engine idling' policy for all vehicles within Westminster; • Investigate new road surfaces to reduce the impact of noise from road traffic; • Deliver new noise policy in planning documents, and ensure new homes are constructed to higher noise insulation standards.
What you can do	• Businesses need to be aware of the impacts that the noise they create and vehicles contributing to their business has on their neighbours; • Businesses using loud machinery need to keep it in good working condition and does not add unnecessary noise to the local environment; • Try and be considerate of noise yourself and if there is a noise problem, report it.

2. Addressing Westminster's waste resource

Did you know?

The cost of disposing a tonne of waste is:

£102 if sent to landfill,
£92 if used in energy from waste
£32 if recycled. [1]

Did you know?

The UK hospitality sector (hotel, pubs, restaurants and quick service restaurants) could save £724 million a year through tackling food waste. [2]

Some parts of Westminster have to have a waste collection 3 times a day.

Issue	Westminster produces 180,000 tonnes of municipal waste per year. The City Council manages this volume of waste with over 1 million collections per week, and with over 23,000 households having access to daily waste collection services and some parts of the West End requiring 3 collections a day. 14% of our municipal waste is recycled, with the rest going to energy from waste recovery centres, where 83% of our waste is burnt generating electricity for local use, and 3% is landfilled. As well as domestic waste streams, 10% of our municipal waste comes from street litter through our 1,500 litter bins servicing the million people who come into Westminster every day. Many of Westminster's streets are swept 24 hours a day, requiring 250 street sweepers.
Challenge	Under the London Plan, we are expected to manage more of our waste locally under the proximity principle and will need a waste plan in place on how to achieve this by 2026. Increasing amounts of residential development generates more waste during construction and while occupied, which is a further challenge.

COMMITMENTS	
Top 3 actions for us	• Adopt a new Municipal Waste Strategy and long term waste infrastructure plan; • Use planning policies to work with the development industry to increase recycling and responsible waste management. • Achieve zero growth in household waste, recycle 35% and increase energy created from the waste we throw away to 67%.
What you can do	• Waste reduction is the first step – do you really need plastic shopping bags? • Businesses can work with suppliers to address excess packaging; • If you have the opportunity, buy recycled goods; to close the loop. • Always use bins and recycle waste as much as possible.

[1] (WRAP, 2014)
[2] (WRAP, 2013)

3. Ensuring local energy security and delivering carbon reduction

Did you know?

Westminster's Business Community spent £244,293,000 during 2012 on their electricity consumption.

Westminster City Council spent £4,287,029 in 2012 on its gas and electricity bills.

Did you know?

The Energy Saving Trust calculate that a typical household could save up to £90 per year just by turning off appliances left on standby.
The UK could save £1.7billion if we all did this.

Did you know?

The Pimlico District Heating Undertaking's (PDHU) is the UK's first combined heat and power network and provides heating and hot water services to 3,256 homes, 50 commercial premises and three schools in the area.

The network was the first major initiative to combat London's air pollution, ahead of the Clean Air Act of 1956.

PDHU local generation of electricity reduces transmission losses as its electricity is produced close to the user. It saves up to 11,000 tonnes of carbon emissions per year by displacing coal fired electricity generation. This incredible saving is the equivalent of taking just under 4,000 cars off the road per year.

Issue	Action is needed to address rising energy costs and manage supply and security against of the threat of climate change. The government and the Mayor of London are seeking to change the UK's ageing energy infrastructure and improve energy efficiency. Westminster must lead by example in supporting these ambitions. Improved energy efficiency standards will reduce carbon emissions from heating and lighting. Westminster is amongst the largest power consuming authority areas in the UK with nearly 9,000GWh of energy used annually. The City of Westminster uses more energy (GWh) per year than the City of Newcastle or Liverpool or Cardiff. [3] This is due in part to our heritage, high density living, 675,000 jobs, and 24 hour transport.
Challenge	Energy costs are predicted to rise year on year by 5% for the foreseeable future. Increasing densification in Westminster is also putting considerable pressure on the exiting energy infrastructure network. The City's power demands and carbon emissions mainly come from the built environment, with approximately 75% from commercial buildings. The majority of this power demand and carbon emissions are from offices, hotels and shops. Through strong planning policy and ambitious retrofitting projects within commercial and residential properties we can significantly reduce our power need and carbon emissions, and mitigate against future energy price increases. The level of implementing local energy generation and low carbon technologies must improve significantly if Westminster is to ensure a secure energy supply over the long-term. Demand for growth particularly in the West End is close to outstripping current supply infrastructure. Energy resilience is a growing concern for businesses. In December 2011 a 10 hour power cut forced theatres across Soho to cancel shows and businesses to close, with some restaurants estimating losses of more than £10,000. [4]

[3] DECC - Energy statistics for local authorities (2013)
[4] BBC News - Soho power cut: Shops, bars and restaurants closed

COMMITMENTS	
Top 3 actions for us	• Deliver measures to reduce light pollution, naturally cool the City and reduce reliance on air conditioning which stresses the energy network in summer; • Deliver a district energy masterplan and build a business case that will start the delivery of a community heating network as part of the Church Street regeneration programme; • Introduce green leases for all new lettings in the City Council's investment properties to promote responsible occupancy and ensure our properties are energy efficient.
What you can do	• Minimise energy use at home and at work by switching off lights, computer and stand-by devices when not in use; • Lower thermostat settings, layer up and reduce heating bills; • Make sure vulnerable neighbours are winter-ready and keep an eye out for them during periods of extreme heat or cold.

4. Improving local air quality

Did you know?

The National Air Quality Strategy estimated that the health impact of particulate pollution cost the UK between £8.5 billion and £20.2 billion a year in 2005. This is almost twice that of physical inactivity, and is comparable to the cost of alcohol misuse.

Issue	Air pollution in Westminster is a result of chemicals and dust pollution from heating boilers and other plants and from the millions of vehicles that travel through the City. Poor air quality increases the demand on health and care services as it affects lung development in young people and increases risk of early death, lung cancer, strokes, and respiratory conditions; especially in older people. The London Air Quality Strategy stated that the number of premature deaths due to air pollution in London was estimated to be 4,267 in 2008 and this number can only have risen. Public Health England research states that 8.3% of all deaths in 2010 in Westminster were attributed to long term exposure to air pollution - the highest percentage in London.
Challenge	Our actions to improve air quality have helped reduce pollution levels but, given predicted increases in population and associated urban densification, including pressure on the transport network, more needs to be done to meet the EU air quality objectives. The EU has started legal proceedings against the UK government, which could lead to annual fines of £300m for its failure to cut levels of nitrogen dioxide (NO_2). Emissions from buildings are set nationally through Building Regulations and transport issues such as buses, taxis, and major road management is delivered through Transport for London and the London Mayor. Westminster needs to work with these parties to reduce the high levels of emissions in the City.

COMMITMENTS	
Top 3 actions for us	• Where appropriate, strengthen links between public health interventions to improve air quality to improve health and well-being; • Work with TfL and property owners in air quality hot spots e.g. Oxford Street to reduce vehicle numbers and emissions from vehicles which service the area; • Complete the delivery of our 2013 AQAP and deliver an Ultra Low Emission Zone.
What you can do	• When walking take less busy side roads; • Walk and cycle around Westminster to avoid adding to the problem; • Protect existing gardens and when possible plant living walls or roofs.

5. Supporting a sustainable transport system for Westminster

Did you know?

The shortest distance between two stations on the underground network is only 260 metres. The journey between Leicester Square and Covent Garden on the Piccadilly Line takes about 20 seconds, costs £2.30 and is the most popular journey with tourists.

Did you know?

The Council's Parking Service is the largest in the UK, our on-street parking facilities include 33,000 residents' parking bays, 4,150 Visitor Pay by Phone bays, 2,600 other Paid visitor bays, 3,250 Shared use residents' bays, 6,150 Pay by Phone bays for motorcycles, 220 White Badge disabled bays, 480 Blue Badge bays, 185 Car Club bays, 154 taxi ranks, 55 Coach bays, over 50 Electric recharging bays and specialist bays such as Diplomatic bays.

Issue	Westminster is one of the best served locations by public transport in the world. There are four main rail stations, three with direct connections to London's principal airports; new Crossrail stations are due to open in 2018; 32 underground stations with 10 of the 12 tube lines running through the City; 4 river bus piers; 157 daytime bus routes and several 24 hour bus routes; and national and international coach services. Given the numbers of people in Westminster the transport network and public realm can struggle to cope with the demands. With this intensity of use, there are issues such as overcrowding, poor air quality, social isolation, noise and road safety.
Challenge	As the population rises in Westminster there will be increasing pressure on the safe and efficient movement of people. The City must adopt appropriate technologies to maintain its competitive edge. New technologies such as electric and hydrogen fuelled vehicles will require new infrastructure as they increase in popularity. With increasing levels of childhood obesity in London schools, the City Council will need to work with students to encourage sustainable transport options for students, teachers and parents.

COMMITMENTS	
Top 3 actions for us	• Finalise School Travel Plans in all schools of Westminster by the end of 2016; • Work with TfL to deliver a central London cycle grid and improve safety at a number of key junctions and gyratories, particularly for pedestrians and cyclists such as Marble Arch, Great Portland Street/Marylebone Road, Vauxhall Bridge roundabout. • Ensure that by 2020 the required infrastructure for taxi and freight electric recharging is in place and extend residential schemes.
What you can do	• Think about the form of transport you need to get to your destination. Can you walk or cycle there, and get fit while you travel? • Have you thought about joining the Westminster car club? • Consider car sharing on essential car journeys or switch to a hybrid/EV?

6. Making the best use of our open and green spaces

Did you know?

In the last 5 years, 58 living roofs have been granted planning permission and constructed in Westminster.

Did you know?

In an assessment of London house prices by the GLA Economics in 2010, it was found that property prices were boosted by quality green spaces. The study estimated that property located less than a kilometre from quality urban park added up to 3% to the total property value.

Issue	Westminster has an impressive open space and green infrastructure network. The Royal Parks and Westminster's green spaces form the setting for world famous landmarks such as the Palace of Westminster and Buckingham Palace. Over half of the City's open spaces have a heritage designation, with 85 London Squares and 21 English Heritage listed parks and gardens, including the five Royal Parks. These unique landscapes are assets that can reinforce a sense of place and of identity, improve health and well-being, boost environmental resilience and make the City a more attractive and prosperous place.
Challenge	Maximising greening opportunities within new development helps to cool ambient temperature, improve air quality, reduce the risk of surface water flooding, provide habitat for a diverse range of species and improve attractiveness of the urban environment. The provision, protection and improvement of sport and play facilities, and use of these facilities in parks and green spaces, are central to encouraging active lifestyles. Green spaces are known to contribute to the psychological and social wellbeing of communities, having a positive effect on stress levels, mental health and community cohesion. There will be challenges in ensuring that our public spaces are maintained to this high standard during a time of reduced resources and with increasing population.

COMMITMENTS	
Top 3 actions for us	• Update and adopt our Biodiversity and Open Spaces Strategy; • Deliver a "green spine" within the regeneration of Church Street; • By 2020 plant an extra 1,000 new trees.
What you can do	• Support biodiversity by hanging a bird feeder and planting bee-friendly flowers; • Water communal plants and street trees with your waste water during drought; • Encourage your workplace or school to include a living roof, wall or vegetable growing; • Buy locally produced honey; • Educate yourself on Westminster's wildlife by visiting open spaces such as the parks

7-8. Ensuring that sustainability is delivered through economic development

Did you know?

Leading global cities recognise climate change as a threat to business. 76% of them report that climate change will impact on business. The sectors affected range from food services to tourism. [5]

Issue	Westminster is a powerhouse for the UK economy. Environmental sustainability also provides an opportunity for economic growth. London's green economy continued to grow between 2008 and 2013 in contrast to national growth trends. Over 9,200 green businesses in London (18% of the national total) now employ over 163,500 people. This sector was worth approximately £25.4bn to London's economy in 2011/12, and has grown by more than 5 per cent over each of the last two years,[6] one of the quickest growing sectors in London. The same study shows that this growth is predicted to continue to the end of the decade by approximately 6% per year. Within London this sector includes financial institutions trading on carbon, consultancies, small start-up energy efficiency companies. It is a high value sector which requires a range of skills.
Challenge	The growth of the environmental sector will bring opportunities and there will be competition as to where the "environmental sector" will be based. Attempts have been made to base the sector in east London, but it has tended to be industrial processes rather than the high tech end of the sector. Westminster can offer space for the City to create such a cluster. Westminster's location in the heart of London, together with world class universities and partnerships mean that Westminster is already the world leading location for an "Enviro-City". The City's heritage is an economic threat as commercial properties cannot be rented out if they fail to deliver energy standards after 2018. This challenge provides opportunities for a local workforce to deliver retrofitting but requires legislative changes to simplify this. A changing climate will bring change to the economic growth of the City. Warmer summers will increase the number of visitors to our attractions, and to on-street cafés. Risks include an urban heat island effect which will impact on air quality, and increased electricity demand for air conditioning. Westminster City Council will have to manage these effects.

[5] Protecting our Capital, 2014

[6] London's Low Carbon Snapshot' Report, GLA 2013

COMMITMENTS	
Top 3 actions for us	• Undertake a business case to develop an "Enviro-Hub" in Westminster, to be a centre of excellence for new environmental start up companies; • Work with business to develop two freight consolidation schemes; • Work with the national grid to deliver new sites for energy generation and new sub-stations.
Challenge	• We need to work with organisations to ensure that rented commercial units achieve the minimum energy standards required by law, which could deliver local employment opportunities; • We will work closely with the local business community to help them undertake their Corporate Social Responsibilities projects in Westminster. One way of doing this is to work with the Business Improvement Districts to deliver their environmental needs as set out in their business plans; • We will support businesses in delivering shared objectives around issues such as air quality and transportation.
What you can do	• Businesses can join BIDs to share best practice and resources; • As a business, close doors to keep heat during winter and cool air in summer; • Use your purchasing choices to buy responsible goods and services.

9-10. Managing water use and addressing flood risk

Did you know?

By law restaurants/cafes have to be able to supply you with tap water, so you can ask for it rather than pay for bottled.

Issue	The Environment Agency and Thames Water recognise that London is an area where demand for water exceeds supply. They highlight the South East of England as 'seriously' water stressed, meaning that the demand for water is having a negative impact on the environment. Londoners use more water than the national average (167 litres per person per day in 2010 compared to 146 litres per person per day nationally), largely because we live in small households, which are not water efficient. Westminster has modelled flood risk in the City and is investigating possible options to manage that risk in the future. The City Council supports development and infrastructure which incorporates sustainable drainage systems, and will continue, in its role as Lead Local Flood Authority, to ensure that surface water drainage flow routes, and the City's gullies are managed properly.
Challenge	With Westminster's population expected to rise from 225,000 in 2014 to 254,600 in 2030, so will our demand for water.[6] A changing climate will increase the need to be efficient with water usage. Westminster will lobby Thames Water to ensure that water leaks are minimised and water efficiency is improved and promoted. The introduction of Sustainable Drainage Systems (SUDs) will become increasingly important in the management of surface water flood risk in the future. SUDs help reduce peak water runoff from a site, which allows time for water to percolate into the ground, reducing the amount of surface water entering the drainage network. SUDs in Westminster could include: green roofs, 'rain gardens' (planted areas designed to capture water), permeable paving, and rainwater harvesting.

6 GLA figures 2014

COMMITMENTS	
Top 3 actions for us	• Put in place higher standards for water efficiency in new developments, recognising that Westminster is an area of water stress due to high demand; • Promote water efficiency on building and construction site, through our Code of Construction Practice; • Work with Thames Water to promote their campaigns to reduce water use and ensure that waste products are disposed of responsibly. Work with Thames Water to roll out their water meter programme to all.
What you can do	• Order and install your free water saving devices from Thames Water *http://freebies.thameswater.co.uk/*; • Don't buy bottled water but use re-usable containers to drink tap water; • Install a water butt at home to water plants with collected water; • Only fill your kettle with the water you need; • Report leaks.
Top 3 actions for us	• Publish our Local Flood Risk Management Strategy and risk maps, working in partnership to ensure flood risk management objectives are in the Environment Agency's Flood Risk Management Plan; • Investigate possible options for surface water flood risk management for north west, central and south Westminster through externally funded studies; • Support implementation of the Thames Tideway Tunnel Development Consent Order, and ensure that impact on Westminster is managed and minimised.
What you can do	• Don't pour materials including waste oils and fats down drains, recycle it. • Report any blocked drains to the Council; • Don't cover gardens with water resistant hard surfaces; • Plant areas for water absorption.

11. Communicating and encouraging people into environmental action

Issue	Effective communications plays a vital role in helping to achieve the Council's vision for a sustainable Westminster. It demonstrates the Council taking the lead, and strengthens the Council's position when lobbying central government. Our communications encourage those in Westminster to adopt more environmentally-friendly behaviours and take steps to protect and improve their health, and everyone's environment.
Challenge	It is vital that the Council promotes a clear vision for City in delivering the environmental agenda. This vision will be delivered not just by the Council, but also by the wider Westminster community. We need to show leadership when required, and support the community to take ownership and deliver action when needed. Westminster City Council must ensure that the Council's messages are reaching the right audiences and make best use of digital technology and social media in order to achieve this. Market analysis and targeted communications campaigns will save time and effort and deliver better outcomes.

COMMITMENTS	
Top 3 actions for us	• Work with our businesses to ensure they have access and deliver their electric vehicles needs following the introduction of the ultra low emission zone; • Switch the paper publications produced to 100% recycled paper content; • Work with the rental market to ensure that they are aware of their responsibilities to deliver energy efficient buildings.
What you can do	• Talk to people in your community about the local areas and its environment; • Take part in environmental schemes and initiatives run by local businesses and the Council; • Report issues such as fly tipping and antisocial behavior to the Council; • Suggest improvement ideas in your neighbourhood to your ward councillors.

City of Westminster

westminster.gov.uk #CityforAll

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City for All

Greener City Action Plan

2015-2025

City of Westminster

westminster.gov.uk #CityforAll

Introduction
by Cllr Heather Acton

Cllr Heather Acton
Cabinet Member for Sustainability and Parking
June 2015

Foreword by Cllr Heather Acton – Cabinet Member for Sustainability and Parking

One of my primary motivations to stand as a Westminster City Councillor was to strive for a healthy, safe and sustainable environment for my own family, for future generations and for the local neighbourhood. Now as the Cabinet Member for Sustainability and Parking I want to put steps in place to improve the city's environmental performance, ensuring our limited resources are used in an optimal way to sustain and improve the quality of life in our city.

Air and noise pollution must be addressed in the city if it is to support a healthy population. Our green, open spaces must be protected and managed for the same reasons and also to encourage residents and businesses to invest in the city. Westminster's energy provision must be secure, efficient and low carbon to support sustainable economic growth. Efficient, non-polluting transport systems are needed to provide connections across communities and businesses. We cannot afford to waste resources and Westminster's residents and businesses are the key participants to help ensure the strategy outlined here can be implemented.

Westminster City Council, in drawing up the objectives described, will try to lead by example. This strategy is presented as a living document which will change, as new ideas are incorporated from our partners. We all need to take responsibility for minimising our environmental impact, maximising new opportunities and sharing best practice. I hope that this document provides a starting point for us to work towards improving our own living environment and protecting it for the future.

The strategy has been produced with significant help from colleagues across the Council and from a range of individuals and organisations who will partner with us in its implementation. Particular thanks are due to the Sustainability Task Force, chaired by Cllr Ian Adams, and thanks to everyone who has contributed so far.

Greener City Action Plan

Westminster's environment is a vital ingredient in the ambitions for the city and for the quality of life expected by residents, workers and visitors. Better air quality improves health; low carbon, locally produced energy enables businesses to grow; and sustainable transport systems connect people and jobs.

Through this action plan we will deliver sustainable and improved economic growth by ensuring that we have high environmental standards.

We will create an environment in Westminster that befits our world class city status.

THE STRUCTURE OF THIS ACTION PLAN

This ambitious Greener City Action Plan for Westminster builds on what has already been achieved, reviews the City Council's existing environmental policy, and plans further steps needed to protect the future.

The Action Plan is set around nine priorities and our success will be judged on delivery and how we adapt to the challenges of a changing climate and increased population.

For each priority we highlight the importance of the issues, current performance, future targets, and what must be done to achieve the vision. The City Council will focus on these nine key areas and will measure success against the targets set. Each priority has cross cutting issues and we will need partnership and community support to succeed.

We acknowledge there are other environmental sustainability issues, but our eleven policy priorities for our ten year strategy are:

1 Addressing noise pollution across the city
2 Making better use of the city's waste resources
3 Delivering affordable, secure and low-carbon energy supplies
4 Improving our local air quality
5 Supporting a sustainable transport system for Westminster
6 Making the best use of our open and green spaces
7 Ensuring that sustainability is delivered through economic development
8 Supporting sustainable growth
9 Managing water use
10 Addressing flood risk
11 Communicating and encouraging people into environmental action

Delivery of our vision

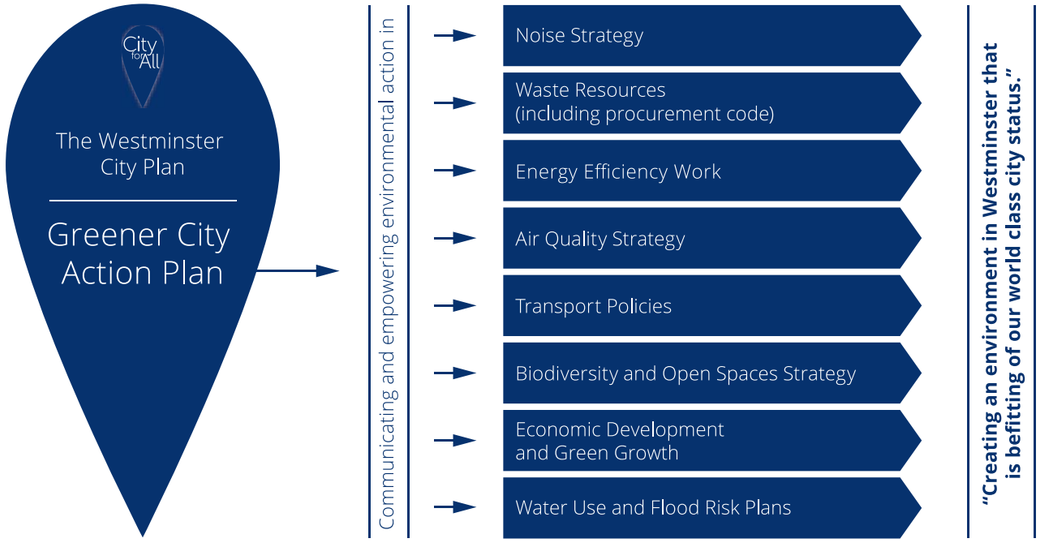


Figure 1 Relationship between Greener City Action Plan and other environmental policies.

The Greener City Action Plan (2015 – 2025) and the key policy areas listed, all support the delivery of the objectives and aspirations of City for All and the Westminster City Plan.

MONITORING AND PERFORMANCE

The City Council will use its Authority's Monitoring Report (AMR) to report progress on our environmental performance from a range of indicators. Results will be published on the Westminster web site.

We will continue to monitor the views of residents through the city survey, which will help steer and inform our decisions and monitor our performance. The city survey continues to highlight that services and issues such as open spaces, air quality and noise are areas that residents have strong views on, and expect a high level of performance.

Successful delivery of the projects and programmes will be delivered in partnership and will be cost neutral to the City Council. We will secure external funding to deliver schemes and review working practices to deliver improvements to our environment and demonstrate that benefits are environmental and financial.

1. Addressing noise pollution across the city

Westminster's sound environment is complex, and noise pollution is a serious environmental issue. Every year Westminster receives the highest number of noise complaints in London and our population highlights noise as one of the biggest causes for concern. Road traffic is the main source closely followed by plant and machinery, construction work, neighbourhood noise, commercial premises and aircraft. In our 2014 resident's survey, 17% of our residents feel that noise from bars, street entertainers and construction sites impacted on their life in a negative way.

Noise affects health, productivity and the natural environment. Health impacts of noise pollution include sleep disturbance, stress, anxiety, high blood pressure, poor mental health, poor school performance, and cognitive impairment in children. Noise can have an impact on the natural environment, affecting the ability of animals to find habitats, locate food and breed.

Under the Environmental Protection Act 1990 and the Control of Pollution Act 1974 local authorities are required to protect communities from noise nuisance. Westminster's 24-hour Noise Team deals with a whole range of noise complaints related to, for example, alarms, air conditioning, parties and construction outside permitted hours. The City Council has also seen an increasing number of noise complaints made regarding Pedi-cabs, and will take appropriate measures to ensure that Pedi-cabs do not increase noise pollution. The City Council will issue noise abatement notices and will take persistent noise offenders to Court.

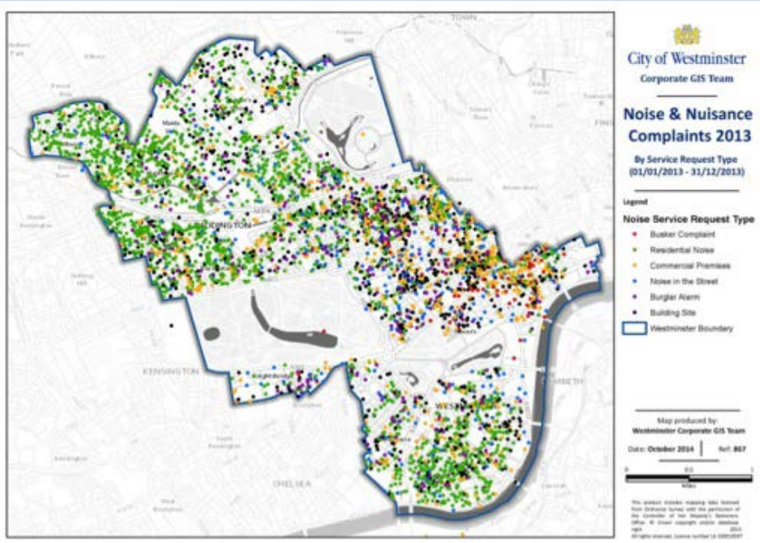


Figure 2 Numbers and sources of noise complaints during 2013 in Westminster

OUR PERFORMANCE

Several City Council departments have responsibility for noise-related enforcement issues. Noise can be addressed through City Council Planning, Licensing, Environmental Health and Housing functions.

To deliver noise improvements, the City Council published a Noise Strategy in 2009, the first of its kind in the UK. It has four objectives:

- reducing average noise levels in the city;
- reducing noise incidents;
- minimising the impact of noise; and,
- protecting and enhancing tranquil areas.

The City Council also adopted planning policies to reduce noise pollution.

Until 2006/7 the City Council received up to 21,000 noise complaints a year, the equivalent of 58 a day. Following the publication of the City Council's Noise Strategy, noise service requests decreased by around 21% due to greater education and awareness. The number of complaints remains a higher percentage per head of population compared with other inner London boroughs, and Westminster City Council deals with more noise complaints than the Royal Borough of Kensington and Chelsea, and Hammersmith and Fulham Council combined.

Did you know?

The top five "noisiest" wards in Westminster show an increase of 30% for complaints in the last 4 years. The main source is from construction sites. ***Westminster Noise Team***

FUTURE CHALLENGES

Westminster's actions have helped reduce noise levels and complaints, but predicted increases in population will prove a challenge in managing a healthy living environment. Increased numbers using open spaces will reduce options for tranquillity. Pressures on accommodation will mean that people will be closer to noise. The challenge of 24 hour transportation services will also increase the impact of noise in Westminster.

In 2010, the government published a noise policy statement for England which sets a framework to assess and manage environmental noise, in particular road and rail vehicles. Local authorities must work with the Department for Environment, Food and Rural Affairs (DEFRA) to implement the Government's Noise Actions Plan and carry out 'Noise Mapping'. The noise mapping has shown exposure to environmental noise including transport sources. The City Council will work to target noise in problematic areas to improve the quality of life.

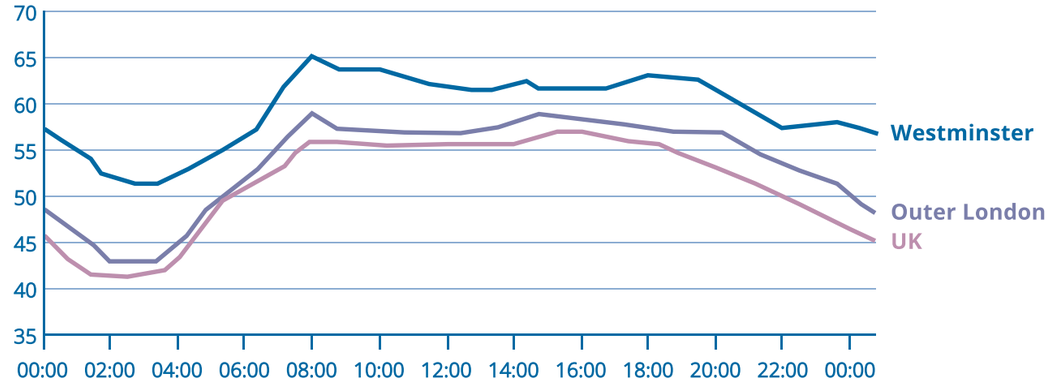


Figure 3 Average noise levels (dB). 2008 data from Westminster City Council.

THE FUTURE PLAN

Next 3 years	Continue to manage the delivery of actions adopted in the 2009 Noise Strategy; Work with the business community to help deliver noise improvements through their operational practices; Work with the Council's contractors to identify noise reduction measures including noise from waste vehicles and operations; Work with TfL and Defra to help deliver noise improvements in problematic areas; Revise and adopt a Noise Strategy and adopt detailed noise policies in the City Plan.
3-6 years	Continue to lobby Government to update legislation and powers to deal with noise pollution issues; Investigate new road surfaces to reduce the impact of Noise from road traffic; Deliver new noise policy in planning documents, and ensure new homes are constructed to higher noise insulation standards.
Beyond next 6 years	Continue action to monitor noise across the City and seek to reduce problematic noise.
What you can do	Businesses need to be aware of the impacts that vehicles have on their neighbours; Ensure that all machinery is kept in good working condition and does not add noise to the local environment; If there is a noise problem, record it and report it.

Case Study: Noise Team

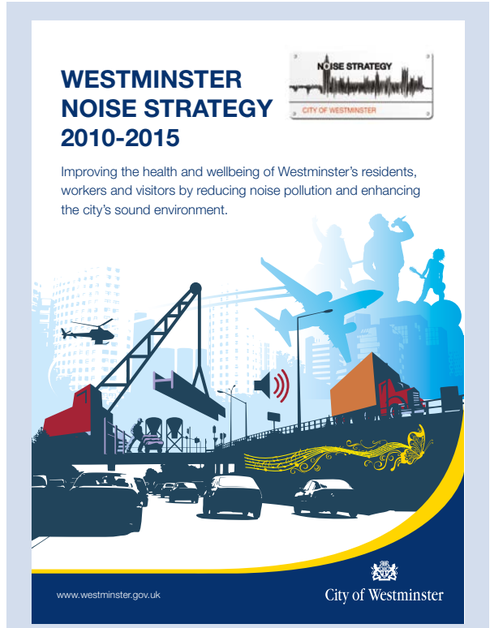
Westminster is home to a large residential population and a concentration of commercial activities, entertainment and leisure activities and political, cultural and educational institutions. This combines to create an intense urban environment; with an accompanying complex sound environment.

The Council's 24 Hour Noise Team is important for the investigation and abatement of noise nuisance. The Noise Team provides a rapid response service on issues where it has effective enforcement powers, such as: loud noise from parties, construction sites, broken alarms, and licensed premises.

Westminster is the only council in the UK to have a team specifically dealing with complaints 24 hours a day, 365 days a year. The service responds to 99% of complaints within 45 minutes.

A resident was experiencing continuous banging, drilling and knocking from building work next to her flat. "It was a living nightmare. I work as a pub manager and my husband has to be up at 3am for work. The noise would continue day and night, it just never stopped."

"I called the Council Noise Team when the noise was happening and they were fantastic, each time coming out within an hour to get the builders to stop. With help and guidance from the Council, the matter went to court and the company pleaded guilty of working outside permitted working hours. The day I got the call from the Council with the good news was one of the happiest days of my life – It was like a massive weight had been lifted."



2. Making better use of the City's waste resources

Around 177 million tonnes of waste is generated every year in England. It costs businesses and households significant amounts of money to deal with its transport and disposal, and causes long term environmental damage, especially when put into landfill. Reducing the amount of waste produced and reusing waste delivers economic and environmental benefits for Westminster and the UK. Efficient waste management is important for quality of life, the environment and for economic growth.

Westminster produces 180,000 tonnes of municipal waste per year. The City Council manages this volume of waste with over 1 million collections per week, including over 23,000 households having access to daily waste collection services.

The City Council prioritises reducing the amount of waste produced, before looking to reuse, recycle and recover energy from waste.

Along with reducing waste volumes, all businesses can make better use of resources and use their procurement powers to create a market place for recycled goods. Buying recycled products helps ensure valuable materials don't go to waste. From paper used for information to residents, through to the resurfacing of highways, the City Council aims to increase recycled goods in the supply chain. Research shows that UK businesses can save up to £23bn through efficient use of resources [1] with organisations underestimating how much waste costs them. [2]

MOST FAVOURED OPTION

- **Reduce** | lowering the amount of waste produced
- **Reuse** | using materials repeatedly
- **Recycle** | using materials to make new products
- **Recovery** | recovering energy from waste
- **Landfill** | safe disposal of waste to landfill

LEAST FAVOURED OPTION

Figure 4 The Waste Hierarchy

OUR PERFORMANCE

14% of our municipal waste is recycled, with the rest going to energy from waste recovery centres, where 83% of our waste is burnt generating electricity for local use, and 3% is landfilled.

As well as domestic waste streams, 10% of our municipal waste comes from street litter through our 1,500 litter bins. Many of Westminster's streets are swept 24 hours a day, requiring 250 street sweepers.

Over the last 14 years, the amount of waste collected by the City Council has reduced from over 250,000 tonnes to over 180,000 tonnes. This is primarily the result of commercial skip services, the economy, packaging reduction, and loss of commercial waste market share.

[1] Resource Efficient Europe (DEFRA, 2011)
[2] Finding Cost Savings: Resource Efficiency (WRAP, 2013)

The City Council uses its influence to increase the use of reused and recycled goods within the supply chain and to develop a "circular economy". One example is the donation to the charity BBF of 270 chairs which were refurbished for re-use. This reduced the environmental resources needed for new chairs and the carbon emissions associated with manufacture. The City Council works closely with charities such as Scope with recycling clothes banks, and with commercial organisations such as Marks and Spencer to support their national campaigns on clothes reuse.

To increase recycling the City Council manages 160 recycling bring bank sites across the City plus two mobile recycling centres to collect waste goods. It also promotes recycling and good waste management to residents and businesses.

The City Council developed "Duo-bins" designed to separate waste into recyclable and non-recyclable waste. This has helped recycle 30% of street litter to date, with a target of 70% by 2020.

Our Parks Service currently recycles approximately 500 tonnes of green waste per year. This is turned into high quality mulch that is then reused on landscaping schemes. Transportation costs are saved and the environmental impact of waste is reduced.

The Council's schools food contract, which is managed by Chartwells, includes the requirement for collection and responsible disposal of food waste. The schools food waste is increasingly sent for anaerobic digestion or composted. Together the City Council and Chartwells are also working towards a reduction in food waste and packaging waste by 5% by the end of 2015.

Did you know?

The cost of disposing a tonne of waste is:
£102 if sent to landfill,
£92 if used in energy from waste
£32 if recycled.
(WRAP, 2014)

CIRCULAR ECONOMY

LINEAR ECONOMY

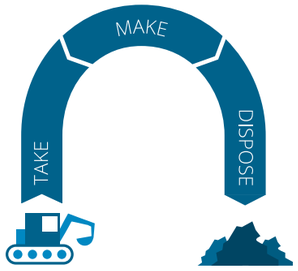


Figure 5 The Waste "circular economy" vs "linear economy".

FUTURE CHALLENGES

The City cannot increase recycling without help from residents, visitors and businesses. To achieve this and reduce costs we need improved use of litter bins, less dropped waste, and increased recycling. To support the circular economy, more people need to consider purchasing recycled goods. The City Council will seek ways to encourage positive behaviours to achieve a better environmental outcome.

Many waste materials collected have a value if collected separately from other waste. A tonne of aluminium cans is worth £800 and a tonne of textiles worth £400. The City Council needs to communicate that separating recyclables will reduce disposal costs and can help achieve higher recycling rates.

The City Council is in the process of reviewing its Code of Construction Practice which, together with Westminster's planning policy, will require responsible construction waste management and encourage reuse of materials.

Building design can also help deliver a higher rate of recycling. Westminster insists that there is space in new developments for waste separation and recycling.

Local businesses need to adapt to minimise wastage. The City Council is already working in partnership with the Business Improvement Districts to increase recycling rates.

THE FUTURE PLAN

Next 3 years	Adopt a new responsible buying policy when procuring goods and services; Adopt a new Municipal Waste Strategy; With partners, continue to support recycling in its main offices and engage with staff on the benefits; Through the planning policies the City Council will work with the development industry to increase recycling and responsible waste management.
3-6 years	Roll out its Waste Action Plan to reduce waste collected; Achieve the amount of waste used to create energy to 67%; Have integrated waste management to deal with parks waste when contracting with a maintenance company; Further investigate waste management capacity both within the city and through our duty to cooperate with other authorities.
Beyond next 6 years	Achieve zero growth in household waste (against a 2014 baseline); Recycle 35% of waste by 2020; Continue to reuse and recycle equipment; Continue to work with the business community on waste management.
What you can do	Waste reduction is the first step – do you really need plastic shopping bags? Businesses can work with suppliers to address excess packaging; If you have the opportunity: buy recycled goods ; Always use bins and recycle waste as much as possible.

Case Study: Baker Street Quarter Partnership – Consolidation Study

In November 2013 the Baker Street Quarter Partnership (BSQP) launched its area wide waste and recycling programme. From a survey of members the partnership found that for 45 businesses, there were 19 different waste companies collecting waste, with many using different waste companies for individual waste streams. With waste vehicles generally being large HGVs this was a great concern to local businesses with regard to air quality, noise, pedestrian and cyclist safety.

The partnership agreed that a service collecting a range of waste streams including dry mixed recycling, general waste, food, furniture, and hazardous waste should be set up. This would deliver environmental improvement and financial savings through efficiency. To date, 40 businesses are using the service, with a further 20 in the process of signing up. The combined annual savings for those using the service is over £20,000. Recycling rates have been increasing since the start of the service, resulting in carbon savings.

SMARTER DELIVERIES

Office buildings have been shown to generate more delivery movements than retail. This, alongside the move towards multi-tenanted buildings is interesting as there tends to be a lack of any consolidation of suppliers. This leads to an increase in vehicles in the local area and increased work for reception staff.

BSQP is working with the University of Westminster and recently completed a study of multi-tenanted offices and hotels. The offices studied generate between 100-900 vehicle deliveries and collections per week, while the hotels generate between 80-120 trips per week. A pilot project for offices and hotels will include:

- Off-site storage and co-ordination facility and a last mile delivery operated by a logistics provider.
- Joint procurement by tenants to reduce costs and vehicle trips.
- Use environmentally-friendly vehicles such as electric vans and cycles to make deliveries.
- Further use of the existing BSQP waste collection scheme
- Review on-street loading and unloading facilities.

3. Delivering affordable, secure and sustainable energy

Action is needed to address rising energy costs and manage supply and security against of the threat of climate change. The Government and the Mayor of London are seeking to change the UK's ageing energy infrastructure and improve energy efficiency. Westminster must lead by example in supporting these ambitions. Improved energy efficiency standards will reduce carbon emissionsand heating costs from heating and lighting and also reduce running costs. It is also essential for growth to address high energy costs in poor quality housing. The City Council can take some action such as improving the energy efficiency of its properties. It can also play an influential role, such as lobbying to secure a fair deal for energy efficiency funding.
A Department of Energy and Climate Change public poll showed that 73% of people felt that leaders must tackle climate change and emissions from energy generation. An equal number agreed that there is benefit to taking action now whilst only 20% felt that things could be delayed a few years.[3]

Did you know?

Westminster's Business Community spent £244,293,000 during 2012 on their electricity consumption.

Westminster City Council spent £4,287,029 in 2012 on its gas and electricity bills.

Energy is a major factor in the production of goods and the delivery of services. Efficient use of energy contributes positively to economic growth, through reducing production costs; helping to create new economic opportunities; the generation of energy and the development of the smart grid and networks; and the growth of the retrofitting sector offers job creation opportunities. Efficient non-polluting energy is needed to meet government expectations and for the growth of the City as new housing, commercial opportunities, and high tech industries increase electrical needs.

Did you know?

The Energy Savings Trust calculate that a typical household could save up to £90 per year just by turning off appliances left on standby. And the UK could save £1.7billion if we all did this.

Westminster City Council is committed to work with partners to identify opportunities to improve energy efficiency and deliver sustainable energy generation. Our local situation is set in a global context of a changing climate and resource reduction, but increasing demand for heat and power, with increasing global energy costs. Our electricity infrastructure must become more efficient. Local energy and heat networks can contribute to electricity capacity, alongside emerging technologies such as energy storage and the development of the 'smart grid' to manage the peak demands for power.

OUR PERFORMANCE

Westminster has amongst the highest energy consumption of all local authorities in the UK with nearly 9,000GWh of energy used annually. The City of Westminster uses more energy (GWh) per year than any of the cities of Newcastle or Liverpool or Cardiff. [4] This is due in part to our heritage, high density living, 675,000 jobs, and 24 hour transport.

The nature of our City's power demands mainly come from the built environment, with approximately 75% from commercial buildings. The majority of this power demand and associated carbon emissions comes from offices, hotels and shops. Through strong planning policy and ambitious retrofitting projects we can significantly reduce our power needs, carbon emissions, and mitigate against future energy price increases.

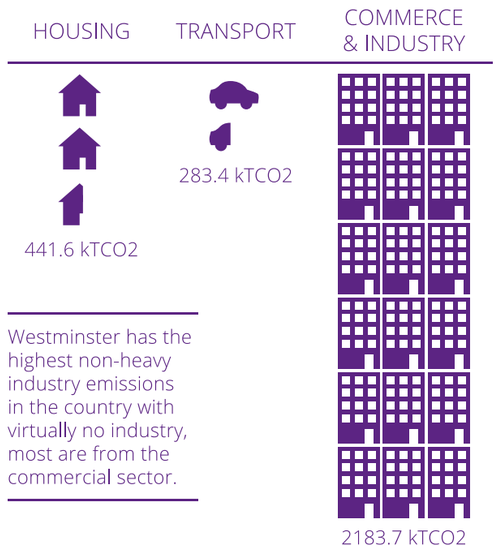
National carbon emissions have fallen by approximately 20% since 1990, partly as a result of changing electricity generation and moving away from coal-based power. In Westminster, carbon emissions have been virtually static, standing at 3220kt for 2010 [5] compared to 3199kt in 1990. So Westminster has made no progress over this 20 year period towards meeting the Mayor of London's target of reducing emissions by 60% by 2025 (relative to 1990 levels) or supporting national targets set out in the Climate Change Act 2008.

Of the households in Westminster an estimated 8.4% of households are fuel poor,[6] lower than the London average of 12.1%. [7] Improving the warmth of people's homes reduces health inequalities and as such this work is supported by the public health and NHS as a local priority.

Set up in 1950's, Pimlico District Heating Undertaking (PDHU) was the UK's first combined heat and power network and provides services to 3,256 homes, 50 commercial premises and three schools in the area. In Westminster the number of developments delivering onsite combined heat and power is increasing. Our long term aspiration is to link these developments together via a larger heat network to create a city-wide scheme to increase self-sufficiency.

Artificial light is a requirement in modern society and has many important and positive uses, including the illumination of areas for security, increasing the hours of usage for outdoor facilities and enhancing the appearance of buildings. Increased use of lighting can, however, cause problems. Light pollution is defined as any form of artificial light which shines outside the area it needs to illuminate, including light that creates a "sky glow" (which impedes our views of the stars). Light pollution can cause health effects such as frequent headaches, fatigue, stress, decrease of libido and anxiety.[8]
The Campaign for Dark Skies estimate that wasted lighting costs the UK economy over £1billion per year.

CARBON EMISSIONS IN WESTMINSTER



Westminster has the highest non-heavy industry emissions in the country with virtually no industry, most are from the commercial sector.

Did you know?

PDHU's local generation of electricity reduces transmission losses as its electricity is produced close to the user. It saves up to 11,000 tonnes of carbon emissions per year by displacing coal fired electricity generation. This incredible saving is the equivalent of taking just under 4,000 cars off the road per year.

FUTURE CHALLENGES

Uptake of renewables and low carbon technologies needs to increase significantly if Westminster is to ensure a secure energy supply over the long-term.

[3] DECC – Populus Survey 2014
[4] DECC - Energy statistics for local authorities (2013)
[5] DECC - Local authority carbon dioxide emissions (2014)
[6] DECC – Sub-regional Fuel Poverty England 2012LIHC definition (2014)
[7] DECC - Annual Fuel Poverty Statistics Report, (2014)
[8] Light Pollution and Impact of Light Pollution, International Journal of Science and Research (IJSR) 2014

Demand for growth, particularly in the West End, is close to outstripping current supply infrastructure. Energy resilience is a growing concern for businesses. In December 2011 a 10 hour power cut forced theatres across Soho to cancel shows and businesses to close, with some restaurants estimating losses of more than £10,000. [9] The City Council is working with the National Grid to minimise the risk of outages, and working on the delivery of local power generation. Projects offering innovative means of delivering locally generated power will be supported where possible.

The demand for a more resilient energy supply requires the City Council to identify and implement local, low carbon energy and smart grid networks. Demand will intensify as the City operates more at night, including the opening of the 24 hour tube.

Approximately 7% of our domestic and 28% of non-domestic energy bills are collected for social schemes and environmental taxes. These levies and taxes fund programmes which provide in excess of £2bn in subsidies to energy efficiency and renewable energy schemes across the UK. Westminster City Council estimates that less than 10% comes back to the City. This is because the national energy schemes have not been designed to support the types of projects needed in the heart of London. For example, Westminster is 378th out of 379 local authorities in terms of the percentage of homes improved by the Carbon Emissions Reduction Target scheme and 380th out of 380 authorities in terms of the number of solar panels installed per dwelling funded by Feed-In-Tariffs. This is predominantly due to the hard-to-treat nature of our building stock, much of which consists of traditional heritage buildings. This can increase costs. The City Council will work with Government to overcome barriers to delivery to ensure we receive a fair share of energy funding.

Westminster will work to deliver Government regulations on the energy efficiency standards aiming to improve conditions in the private rented sector, the City's worst performing tenure. This challenge offers an opportunity for retrofitting companies to develop, potentially represents a new potential market, providing jobs.

Westminster is particularly rich in historic buildings. It has over 11,000 listed buildings and 56 Conservation Areas, which together cover 76% of the City. These older properties are often sought after for their exceptional aesthetic, cultural and economic value. With rising fuel prices, increasing occupier expectations, and new obligations on landlords, there is a drive to ensure that historic properties are refurbished to a higher energy standard, without losing their special features and this will be a key area for retrofitting companies.

Westminster has large land and estate owners who deliver energy efficiency schemes as part of their longer-standing strategies for stewardship of their holdings. One of the key challenges facing owners, as with the City Council, is delivering energy improvement measures in buildings under different ownership structures. Building in mixed ownership and mixed tenure present a particular challenge Mixed uses, common in Westminster also adds to the complexity of approvals and consents needed prior to commencing on site.

The City Council will work to improve climate change resilience. Steps will be taken to improve the quality and management of the public realm, including planting schemes, improved gully cleaning schedules and sustainable urban drainage measures to combat heat stress and overheating during periods of warm weather and to reduce instances of surface water pooling and flooding. Planning policies will encourage natural ventilation rather than the use of air conditioning which is noisy and puts further demand on the electricity network. Such measures are essential to ensure the long-term sustainability of commercial activities and resident well-being in the city.

[9] BBC News - Soho power cut: Shops, bars and restaurants closed

THE FUTURE PLAN

Next 3 years	Deliver a local offset fund of £1m to enable carbon reductial projects developments; Engage with all staff to become more aware of environmental impact; Adopt a city-wide District Energy Masterplan and work with developers on its delivery; Work with the Westminster Property Association to deliver a campaign addressing light pollution; Deliver measures to cool the city and reduce reliance on air conditioning; Deliver a business case that will start the delivery of a community heating network as part of the Church Street regeneration programme; Work with the NHS to assess the links between health needs and fuel poverty.
3-6 years	Ensure that by 2019, there will be no City Council investment or operational properties that fall below an Energy performance Certificate of "E" rating; Introduce green leases for all new lettings in the City Council's investment properties to promote responsible occupancy; Work with the private sector to ensure that private rented homes and commercial units achieve the energy standards required by law; Subject to the business case, start on the construction of a Church Street District Heating network; Work with our long term leaseholders to improve building energy performance, and reward positive action with benefits.
Beyond next 6 years	Work with the development industry in Westminster to ensure that more developments meet strict carbon targets; Ensure that CityWest Homes have delivered a Zero Energy House on one of its properties as a case study.
What you can do	Minimise energy use at home and at work through switching off lights, computer and stand-by devices when not in use; Lower thermostat settings, layer up and reduce heating bills; Make sure vulnerable neighbours are winter-ready and keep an eye out for them during periods of extreme heat or cold Buy the most energy efficient appliances you can. Businesses – encourage employees to be more energy efficient and, therefore, more competitive.

Case Study: Energy Efficient Street Lights

SMART Lights is a City Council led project whose aim was:

- to reduce the energy demand in the City's public and street lighting;
- lower the City Councils associated carbon footprint; and
- improve the service level for our users.

To deliver this the City Council invested in equipment to achieve maintenance efficiencies, service improvements, and energy and carbon savings combining to achieve annual budget savings. A £3.2 million investment over a four year period is now delivering revenue savings each year and will return on its investment within eight years.

SMART Lights enabled a dynamic lighting solution to meet the requirements of Westminster's environment at any given time. The lighting upgrade and new technologies now illuminate the streets to the required level. SMART Lights has the ability to dim lights when not needed, and continuously monitor energy consumption. As a result, the City Council has delivered an average energy saving of 20%

Outputs from the project have included:

- Improved environmental performance: this range of technology is saving the City Council £420,000 per year and reduces the associated carbon emissions by more than 1.5million kg or 20%.
- Workforce Health and Safety: The new units require far less maintenance as there is no electrical testing or lamp change requirement and cleaning is significantly quicker therefore saving maintenance costs.
- Creation of new technology: the Westminster Street bollards employ a LED lighting system powered by a battery unit on continuous charge from a solar panel mounted on the top of each unit.
- Improvements in new street lights: The installations of around 15,000 street lights that can dim. Small computer systems inside the street lights provide a daily maintenance report, and identify lights which are about to fail.
- Reactive Street lighting: Directly linked to CCTV control centre which enables all lights to be turned on at once to help support individual incidents.

4. Improving our local air quality

Did you know?

The National Air Quality Strategy estimated that the health impact of particulate pollution cost the UK between £8.5 billion and £20.2 billion a year in 2005. This is almost twice that of physical inactivity, and is comparable to the cost of alcohol misuse.

Air pollution in Westminster is a result of chemicals and dust pollution generated from boilers and other plant, and from the millions of vehicles that travel through the City. The highest levels of pollution are along the busiest roads and at major junctions. The 2014 residents' survey shows that air quality is perceived as an increaseing problem by a quarter of residents.

Poor air quality increases the demand on health and care services as it affects lung development in young people and increases risk of early death, lung cancer, strokes, and respiratory conditions; especially in older people. The London Air Quality Strategy suggest that the number of premature deaths due to air pollution in London was estimated to be 4,267 in 2008.

Under the Environment Act 1995, local authorities are required to assess air quality and take action to reduce pollution where it is in excess of EU standards. Westminster's most recent Air Quality Action Plan was adopted in 2013 and is designed to protect health, ecosystems and buildings; reduce pollution to below national air quality objectives; and comply with air quality legislation.

To deliver air quality improvements the City Council works with partners including the Cross River Partnership, Transport for London, the Mayor of London and Business Improvement Districts. Together we focus action on tackling emissions from transport; tackling emissions from buildings and development and increasing awareness of air pollution.

OUR PERFORMANCE

The City Council has led the way on addressing air quality, we were the first local authority to develop and adopt an Air Quality Action Plan in 2001; installed the first public electric vehicle recharging points; and lobbied for an emission zone for London.

Air quality data from the last decade shows a decrease in particulate matter (PM_{10}) levels, and Westminster now achieves the EU standard for this pollutant. For nitrogen dioxide (NO_2), EU standards are exceeded in Westminster. In Oxford Street levels are three times the annual target and 80 times the hourly target - the worst pollution levels measured in London in 2013.

The City Council continues to develop transportation and planning policies and deliver projects that will help improve local air quality, including actions such as enforcing against unnecessary vehicle idling, installing electric vehicle infrastructure and cycling routes. Also, the City Council planted living walls in school playgrounds to help reduce pollution. We continue to push for better legislation to address air quality issues.

FUTURE CHALLENGES

Our actions to improve air quality have helped reduce pollution levels, but given projected increases in population, and associated urban densification, including pressure on the transport network, more needs to be done to meet the EU air quality objectives for nitrogen dioxide.

The EU has started legal proceedings against the UK government, which could lead to annual fines of £300m for its failure to cut levels of nitrogen dioxide (NO_2). A recent ruling from the Supreme Court has ordered the Government to draw up a plan to meet the EU rules by the end of 2015. Emissions standards for buildings are set nationally through Building Regulations, and transport issues such as buses, taxis, and management of strategic roads are led by the Major and Transport for London. Westminster needs to work with these parties, to reduce the high levels of emissions in the City.

The Government has promoted the use of diesel vehicles in the UK to deliver the carbon reduction, but these vehicles have negative impacts on air pollution. Considering air quality issues alongside the carbon agenda is vital and the City Council will promote this.

The London wide Ultra Low Emission Zone (ULEZ) is aimed at reducing pollution from vehicles in central London and will have considerable economic and social impact. We will work with the Mayor and TfL to see that the ULEZ achieves the EU air quality standards and would like to see it come into operation as soon as possible.

Buses and taxis make up a significant percentage of Westminster's traffic with over 157 bus routes passing through the borough every day and over 22,000 taxis.[10] The Mayor of London has taken action to reduce emissions from buses and taxis but more needs to be done. We want to see the proposed diesel measures to be implemented earlier than planned, and will look at steps within our control to increase electric and reduce diesel vehicles.

The Clean Air Act, enacted in 1956 to manage smoke emissions, is not appropriate for today's pollution. Local authorities need up-to-date legislation and powers to deal with air pollution. The City Council will continue to lobby for a more effective statutory framework.

Inappropriatly located wood-burning stoves have implications for local air quality. The installation of these is unlikely to require planning permission and the City Council has limited control over installation. We have powers under the Clean Air Act to enforce against smoke and odour from wood burning stoves, and will do so if required. In 2013 we received 3 complaints relating to wood-burning.

[10] Taxi and private hire vehicle statistics: England and Wales 2013, DfT

THE FUTURE PLAN

Next 3 years	Continue to manage the delivery of the actions adopted in the 2013 AQAP; Raise awareness among more vulnerable groups about poor air quality; Work with the local NHS to embed measures to reduce the risk of air pollution for at-risk patients; Where appropriate, strengthen links between interventions to improve air quality to improve health and well-being; Work with the business community to help deliver air quality improvements through their operational practices; Work with TfL and property owners in Oxford Street to reduce vehicle numbers and emissions from vehicles which service the area, benefiting the health of the 220 million pedestrians that visit Oxford Street per year; Review our parking policies to encourage the adoption of less polluting vehicles.
3-6 years	Complete the delivery of our 2013 AQAP and revise and adopt a new AQAP. Work with Transport for London to deliver an Ultra Low Emission Zone; Lobby government to up-date legislation to deal with pollution issues; Ensure that that the issue of air quality is addressed through actions within the Westminster Health and Wellbeing strategy; Lobby the government to manage the impacts of wood burning stoves.
Beyond next 6 years	Continue to monitor air quality across the City through our monitoring stations; Ensure that we work to address emissions from diesel engines.
What you can do	When walking take less busy roads; Walk and cycle around Westminster; Protect existing gardens and when possible plant living walls or roofs.

Case Study: Air Quality Business Engagement in Victoria

A significant amount of land use within Westminster is devoted to the commercial, retail and hospitality sector. There are measures in place to deal with emissions from new commercial developments, but, to date, only limited opportunities for helping existing activities to reduce emissions. The City Council wanted to reach out to the business community to raise the profile of air quality and seek help in meeting air quality objectives.

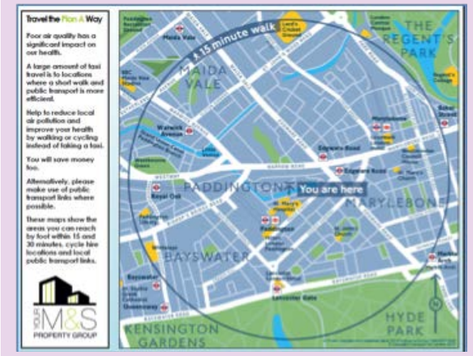
The City Council worked in partnership with Victoria Business Improvement District and representatives from businesses to find solutions to improve local air quality.

Four organisations in Victoria have developed best practice case studies. 14 organisations have signed pledge documents and committed to on-going measurement for review of performance. Examples of measures undertaken by businesses include:

- Briefing staff on the impact of air quality and air quality concerns factored into decision making.
- Use and promotion of Legible London mapping, to encourage low emission journeys
- Installation of air quality monitoring equipment.
- Installation of green 'living walls'.
- Supply chain consolidation.
- Installation of building control measures to maximise efficiency of low polluting boilers.

All organisations were positive about the approach being taken by Westminster and a well-attended lunchtime event was held to celebrate success, share best practice and generate new ideas.

The most rewarding element of the process was that so many companies wanted to be engaged and once the issue was explained, all wanted to support the objective of improving air quality.



42.3%

A simple question was asked of all that took part in the project, to ascertain the initial 'business' perception of the problem of poor air quality. 42.3% initially had no perception of the impact of poor air quality.

5. Providing a sustainable transport system for Westminster

Westminster is one of the best served locations by public transport in the world. There are four main rail stations, two with direct connections to London's principal airports; and new Crossrail stations are due to open in 2018. We have 32 underground stations with 10 of the 12 tube lines running through the city; 4 river bus piers; 157 daytime bus routes and several 24 hour bus routes; national, international and airport destination coach services.

Given the numbers of people in Westminster (residents, visitors and workers) the transport network and public realm can struggle to cope with the demands. With this intensity of use, there are issues such as overcrowding, poor air quality, social isolation, noise and road safety.

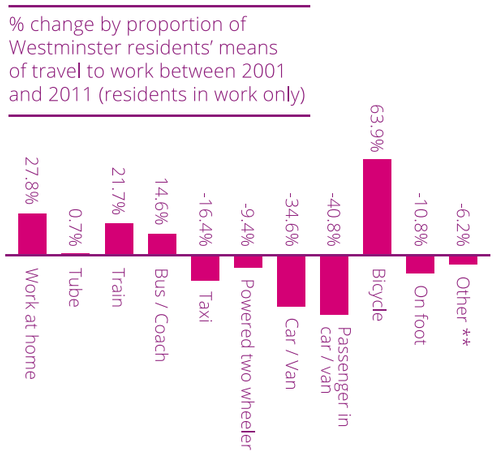
The City Council has a key role to play in tackling these issues, and helping in the delivery of transport improvement schemes. Sustainable transport can bring local air quality improvements with benefits for health and wellbeing; efficient street management can cut congestion and support business performance. Our transport network connects communities, employment, goods, services and amenities. Walking and cycling are important modes of travel and Transport for London (TfL) see active travel as the leading option for increasing the physical activity levels across London's whole population.[11] These are needed to improve health and reduce costs of health care.

Did you know?

The Council's Parking Service is the largest in the UK, our on-street parking facilities include 33,000 residents' parking bays, 4,150 Visitor Pay by Phone bays, 2,600 other Paid visitor bays, 3,250 Shared use residents' bays, 6,150 Pay by Phone bays for motorcycles, 220 White Badge disabled bays, 480 Blue Badge bays, 185 Car Club bays, 154 taxi ranks, 55 Coach bays, over 50 Electric recharging bays and specialist bays such as Diplomatic and Doctor bays.

OUR PERFORMANCE

Since 2001 the City Council and Transport for London have recorded a shift in people's transport patterns, away from the private cars and taxis, with an increase in the use of cycling and public transport. The City Council will continue to support this modal shift to meet the needs of residents and businesses.



11 Improving the health of Londoners, TfL, 2014

The City Council has also delivered a safer and more pleasant public realm to encourage pedestrians to walk and enjoy the sights and the shops of Westminster, with schemes such as the Oxford Circus Crossing.

Did you know?

The shortest distance between two stations on the underground network is only 260 metres. The journey between Leicester Square and Covent Garden on the Piccadilly Line takes about 20 seconds, costs £2.30 and is the most popular journey with tourists.

We have been a strong supporter of the Mayor's London Cycle Hire, and Source London Electric Vehicle schemes. We will continue to work with businesses to deliver staff training on efficient driving, and deliver freight consolidation improvements with major landowners and BIDs in Westminster (also see the Resources case study) to reduce the amount of vehicles on the road.

Legible London is the pedestrian signage system for London, with the City of Westminster being at the forefront of its development, installing 440 Legible London signs. Transport for London research shows that use of Legible London signs is highest in central London, and the sign outside Leicester Square station averages over 300 users per hour at weekends. Across London nine out of ten respondents were keen to see more Legible London signs.

FUTURE CHALLENGES

As the population rises and economy grows in Westminster there will be increasing pressure on the safe and efficient movement of people. During the London Olympics Westminster had to deal with a major influx of visitors to the City. To keep the city functioning smoothly and users safe, businesses were encouraged to use different freight delivery regimes, pavements were temporarily widened and some streets closed.

School travel plans can deliver multiple benefits – addressing levels of childhood obesity; congestion reduction; road safety. The City Council will be working with all schools to encourage sustainable transport options for students, teachers and parents.

New technologies such as electric and hydrogen fuelled vehicles will require new infrastructure as they increase in popularity. The City Council will work with vehicle and infrastructure providers to ensure that residents and business are able to benefit from these technologies. The City must adopt appropriate technologies to maintain its competitive edge.

The Ultra Low Emissions Zone (also see Air Quality, Section 5) aims to reduce emissions from road vehicles in 2020. This defined area of the city will be similar to the Congestion Charge Zone, but with higher environmental standards. A report by Transport for London in 2004 clearly demonstrated the benefits of the Congestion Charge Zone both environmentally but also economically, with the productivity and profitability up for businesses.

THE FUTURE PLAN

Next 3 years	Review our parking policies to encourage the adoption of less polluting vehicles; Increase the number of residents and businesses using the Car Club and increase the number of hybrid vehicles in the fleet; Finalise School Travel Plans in all schools of Westminster by the end of 2016; Deliver 2 play street projects in Westminster; Deliver staff travel plans in the Council's own building refurbishments to improve its facilities and enable greater sustainable transport options; Install an extra 20 electric vehicle recharging points and implement an electric charging point scheme for residents; Continue to update the Legible London maps on street signs to improve walking; Work with TfL to deliver pedestrian countdown facilities at crossings; Deliver a network of Central London Cycle Grid routes in partnership with TfL; Host two cycling promotions events every year, and 50 smaller events to give cycling information, cycle security and basic mechanics to cyclists; Deliver actions to support the childhood obesity initiative; Develop a pedestrian strategy for the City.
3-6 years	Deliver public realm improvements and transport options at Crossrail Stations; Double the number of on-street electric vehicle recharging bays; Work with The Garden Bridge Trust; Complete the Cycle Grid network within Westminster; Work with TfL to improve safety at a number of key junctions and gyratories, particularly for pedestrians and cyclists such as Marble Arch, Great Portland Street/Marylebone Road, and Vauxhall Bridge roundabout; Work with the GLA to deliver the Ultra Low Emission Zone; Ensure that by 2020 the required infrastructure for taxi and freight electric recharging is in place.
Beyond next 6 years	Manage the transport needs for businesses, visitors and residents.
What you can do	Think about the form of transport you need to get to your destination. Can you walk there? Have you thought about joining the Westminster car club? Could you car share on journeys? Can you cycle there?

Case Study: Electric vehicles in Westminster

The electric vehicle (EV) recharging network was developed to address concerns about air quality and noise from road transport. The City Council pioneered public electric vehicle re-charging in the UK and now has the largest number of re-charging points in London. We currently have 63 re-charging points on-street and over 200 in private car parks across the City. This is the highest number by any authority in the UK.

An increasing number of people want to switch to a cheaper and less polluting form of private transport and are requesting more infrastructure. The City Council introduced the UK's first public electric vehicle recharging point in 1999 in the car park at Harley Street, and in 2006 introduced the UK's first on street recharging point on Exeter Street, Covent Garden.

Before Westminster joined Source London, there were nearly 200 members of the City Council's recharging network. All of the on-street recharging points are used daily, and several are continuously in use during the day, seven days a week. Each user is allowed a maximum of 4 hours recharging.

In 2012 Westminster joined the Source London network, a convenient and accessible way of charging an EV vehicle across London. Through an annual membership fee and card, members have access to nearly 1,400 recharging points across London within shopping centres, stations and airports.

Owners of electric vehicles (including electric motorbikes) in Westminster currently benefit from a range of incentives including:

- free parking (for solely electric powered and plug-in hybrid vehicles; in paid-for and electric vehicle recharging bays only; for the maximum prescribed period on the parking bay);
- no congestion charge;
- access to the largest on-street recharging service for electric vehicles in the UK;
- access to the largest off street recharging bay service;
- free parking permits for residents with low emission or electric vehicles.

6. Making the best use of our open and green spaces

Westminster has an impressive open space and green infrastructure network. The Royal Parks and Westminster's green spaces form the setting for world famous landmarks such as the Palace of Westminster and Buckingham Palace. Over half of the City's open spaces have a heritage designation, with 85 London Squares and 21 English Heritage listed parks and gardens, including the five Royal Parks. These unique landscapes are assets that can reinforce a sense of place and identity, improve health and well-being, boost environmental resilience and make the city a more attractive and prosperous place.

As well as being a valuable asset for residents, open space is shared with the many workers and visitors who come to the City. Many of our green spaces in Westminster represent a small piece of tranquillity and countryside in the heart of London. They offer a valuable ecological resource, helping to sustain urban wildlife; a beautiful backdrop for the heritage sights, the arts and music events; and an area of calm.

A study of London visitors in 2008 showed that 80% of overseas tourists, 74% of UK staying visitors, 70% of UK day visitors and 77% of London residents ranked "parks and gardens" as "important" or "very important" in their decision to visit or take a day trip to London. Visitors also ranked "parks and gardens" as more important than other options such as "theatre/music/ arts performances" or "shopping/markets".[12]

The size and characteristics of our parks and green spaces vary from large parks such as Hyde Park to the 'pocket parks' such as Soho Square. There are also areas of public green space that surround housing estates such as Churchill Gardens and the communal green space managed by private landowners such as Belgrave Square.

Figure 13 The Green Spaces in Westminster

Green spaces within Westminster can serve many different functions including educational roles and local food production spaces. Research shows that schools growing food achieve significant learning, skills, health and well-being outcomes for children and young people, and there is a wider positive impact on the schools, communities, and businesses involved.[13]

Beyond maintaining existing Green Spaces, Westminster City Council is a supporter of the Mayor of London's All London Green Grid.[14] It aims to increase access to open space; improve access to nature; make links to sustainable travel; encourage healthy living; promote food growing; enhance visitor destinations and visitor economy; and promotes green skills for design, management and maintenance.

Did you know?

In an assessment of London house prices by the GLA Economics in 2010, it was found that property prices were boosted by quality green spaces. The study estimated that property located less than a kilometre from quality urban park added up to 3% to the total property value.

[12] TNS Travel and Tourism (2008)
[13] Food Growing in Schools taskforce report (2012)
[14] All London Green Grid (GLA) 2012

OUR PERFORMANCE

The City of Westminster is home to 172 open spaces, 87 of which have public access. The total area of parks and green space is estimated at 527ha, equal to 24% of Westminster. Of this at least 15.5 ha surround housing estates with additional green space managed by registered social landlords.

Notting Hill Housing Group and Peabody Trust have been implementing a "Neighbourhood Greens" project which aims to improve the design and management of green spaces around social housing. These principles are supported by the national government.

Did you know?

A 2007 survey of the UK public, found that 83% of respondents believed that parks and green spaces provided a focal point for their local communities. The University of Sheffield research revealed that many of the focus group participants identified green spaces as "the hub or the spirit of their community".

The Green Flag Awards provide a national benchmark standard for the sustainable management of Council parks. Biodiversity, access and maintenance are key components of the award scheme and have become an integral part of park-management plans. Westminster manages 24 green open spaces that have been awarded the green flag standard. This makes Westminster one of the highest performing local authorities in the UK.

In 2012 the City won a Silver Award in the Royal Horticultural Society's City in Bloom category. In 2013 the City was given Gold for Borough of the Year Award and also for its management of Embankment Gardens by the London in Bloom group,[15] and in 2014 the East Finchley Cemetery, which is owned and managed by the City Council, was awarded best in class for open space management.[16]

The Royal Parks include biodiversity in their landscape maintenance contracts; this highlights its importance for all involved in land management.

Westminster City Council has also incorporated biodiversity into its grounds maintenance contract, facilitating a wildlife-friendly approach to parks management. Wildflower meadows have been created along with planting schemes that favour native species. Bird and bat boxes have been erected and standing deadwood has been retained where possible. A drive to improve people's access to nature is at the heart of development projects. For example, a new wildlife area was created in Queen's Park Gardens and many different habitats have been created in Paddington Recreation Ground. A series of ponds are fed from a borehole and a set of classrooms areas enables school groups to visit and learn about the natural environment including a woodland habitat, stag beetle loggery and one of the largest bluebell meadows in London.

To enjoy our open spaces, Westminster has over 900 benches, of which just under half are donated to the City Council by residents, visitors and local businesses. This helps reduce the City's costs, and encourages the recognition of our City's space being owned and supported by many.

Some of the Business Improvement Districts (BIDs) in Westminster have conducted green space audits and are now incorporating green infrastructure into their areas. The Victoria BID has produced award winning guidance on how to deliver green infrastructure, recognising its contribution to creating a positive environment for businesses with increased dwelling times for retailers and delivering wider objectives around air quality, biodiversity and wellbeing.

[15] *www.londoninbloom.co.uk*
[16] *www.rhs.org.uk/communities/campaigns/britain-in-bloom*

FUTURE CHALLENGES

Increasing the vegetated cover of the Central Activities Zone by 5% by 2030 is one of the Mayor of London's targets for adapting to the challenge of climate change. Westminster fully supports this and aims to deliver beyond this target. Maximising greening opportunities within new development helps to cool ambient temperature, improve air quality, reduce the risk of surface water flooding, provide habitat for a diverse range of species and improve attractiveness of the urban environment. It can assist with design objectives by increasing energy efficiency and reducing the need for artificial cooling. Green infrastructure will need to be designed into development schemes to ensure that environmental and economic objectives are achieved and new developments are attractive destinations for enjoying leisure facilities and generating economic opportunity.

The provision, protection and improvement of sport and play facilities, and use of these facilities in parks and green spaces, are central to encouraging active lifestyles. Green spaces are known to contribute to the psychological and social wellbeing of communities by reducing stress levels and improving mental health and community cohesion. There will be challenges in ensuring that our public spaces are maintained to this high standard during a time of reduced resources and with increased populations.

The trend towards warmer, wetter and stormier winters with hotter and drier summers brings increasing pressures on green spaces.

Did you know?

In the last 5 years, 58 living roofs have been granted planning permission and constructed in Westminster.

There is a requirement to make adaptations, such as harvesting rainwater and introducing planting schemes that tolerate periods of drought and provide shade for visitors, with a dual objective of enhancing the ecological value.

There is approximately 1.86 ha of publicly accessible open green space to every 1,000 residents in Westminster. The position changes dramatically with the additional demands of the daytime population of 1 million visitors and workers. The loss of green space to leisure facilities with a general increase in artificial lighting, noise and disturbance and urbanisation can have a significant, detrimental effect on wildlife and the sense of calm.

Local government faces increased funding pressures, which impacts on new projects and ongoing maintenance. Westminster must work with partners such as BIDs and private landowners to ensure the benefits of green infrastructure and open space are embedded in new schemes. One positive partnership is with Continental Landscape (maintenance contractor managing green spaces) which undertakes new and innovative projects in partnership with the City Council.

The changing climate also threatens existing plants and trees with new diseases and pests, increased water pressures, and ground subsidence affecting plants and buildings. The City Council will lobby government for research into new diseases and pests, to ensure that the tree stock of Westminster is protected. We will also continue to monitor the impacts that a changing climate has on the 15,000 trees managed by the City Council and new schemes will be designed with climate resilience in mind.

Large mature trees take a long time to reach their full potential, and require space to thrive to offer the maximum benefit to the city (such as shade, urban cooling, and biodiversity gain). New development will increase pressure on our existing tree stock, and new trees will require the right amount of space to reach their full potential. Garden space or tree pits must be incorporated in projects to reflect this need when development is being proposed.

THE FUTURE PLAN

Next 3 years	Undertake new audits of open spaces and biodiversity levels before 2016; Update and adopt our Biodiversity and Open Spaces Strategy; Complete the woodland area at Paddington Recreational Ground; Adopt policy on living roofs and green infrastructure in development; Continue to support the Business Improvement Districts and landowners to deliver Green Infrastructure; Renew our Grounds Maintenance Contract, which will include measures for biodiversity and environmental improvement; Ensure that when key services are being procured, they take on board the biodiversity impacts; Develop planning policy on basement development to protect garden space; Map all registered bee hives and signpost local groups to help support them.
3-6 years	Work with partner organisations and deliver 10 new green infrastructure projects within housing estates and private developments; Increase the rate of implementation of Green Infrastructure with schemes such as the Garden Bridge, through partnership working deliver new green infrastructure as part of the Church Street regeneration.
Beyond next 6 years	Increase the number of local bee hives on the estates, with partners such as CityWest Homes and the major landowners; Deliver a "green spine" within the regeneration of Church Street; By 2020 plant an extra 1,000 new trees.
What you can do	Support biodiversity by hanging a bird feeder and planting bee-friendly flowers; Water communal plants and street trees with your waste water during drought; Encourage your workplace or school to include a living roof, wall or vegetable growing; Buy locally produced honey; Educate yourself on Westminster's wildlife by visiting open spaces such as the parks.

Case Study: Green Infrastructure and the Victoria Business Improvement Districts

Green Infrastructure is a term to describe a network of high quality green and blue spaces. Green Infrastructure includes parks, open spaces, playing fields, woodlands, private gardens, allotments and blue spaces include wetlands, river and canal corridors.

In 2010, the Victoria Business Improvement District (BID) mapped green and grey spaces in Victoria to identify space for installing new green space and enhancing existing areas. This work was started as a result of businesses highlighting the limited opportunity to relax and enjoy working in central London. The ground-breaking document, the "Green Infrastructure Audit" was the first ever completed by a BID.

Victoria faces several environmental challenges; there is a risk of flooding during periods of heavy rain. Overheating is a problem in summer, due to the density of buildings and large areas of hard surfaces that absorb and trap heat. Green infrastructure (trees, rain gardens, green roofs, and living walls, etc.) helps ease flooding and reduces temperatures by slowing the rate at which water runs off hard surfaces into the drains and offering natural cooling. Green infrastructure also improves air quality by trapping pollutants and helps increase the health and wellbeing of local communities.

As a result of this work, one of London's largest living walls now exists at the Rubens Palace Hotel in Victoria Covering 350M^2 the wall comprises of pollinator-friendly plant species including buttercups, crocuses, strawberries, spring bulbs and winter geraniums. Rainwater harvesting tanks have been integrated into the scheme and store rainwater collected from the hotel's roof which is used to irrigate the plants, topping-up the mains water supply.

Unforeseen benefits for the living wall include:

- The wall has become a photo hotspot for visitors
- Hotel guests learn more about the scheme through an afternoon tea menu that is inspired by the wall's plants, such as wild strawberries and lavender and the hotel has been able to promote their environmental credentials which are increasingly expected by world visitors.

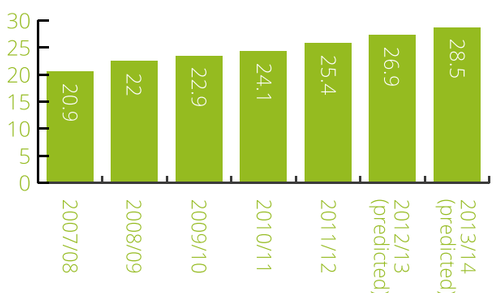
© Red Carnation Hotels

7. Ensuring that sustainability is delivered through economic development

Westminster is a powerhouse for the UK economy. We want to deliver economic growth, and we want this to deliver improvements in the City's environment. The City Council wants businesses to address wasteful use of resources and reduce pollution, as this will support sustained growth and retain Westminster as a destination of choice.

Environmental sustainability also provides an opportunity for economic growth. London's green economy continued to grow between 2008 and 2013 in contrast to national growth trends. Over 9,200 green businesses in London (18% of the national total) now employ over 163,500 people. This sector was worth approximately £25.4bn to London's economy in 2011/12, and has grown by more than 5% over each of the last two years,[17] one of the quickest growing sectors in London. The same study shows that this growth is predicted to continue to the end of the decade by approximately 6% per year. Within London this sector includes financial institutions trading on carbon, consultancies and small start-up energy efficiency companies. It is a high value sector which requires a range of skills.

Value of the Green Sector in London (Billions of £s)
Taken from London Low Carbon Snapshot (2013)



OUR PERFORMANCE

The City Council has created economic hubs which support the business community. "Hub Westminster" on Haymarket, is a locally managed working space in central London which has supported people and businesses with positive social, economic and environmental impact, including small architecture firms, health start-up companies and information technology companies. Having seen the successful development of "Tech-City" and "Medi-City" in London, the City Council is investigating the opportunity to develop the Hub Westminster model further by creating an "Enviro-Hub" cluster. This cluster of clean-tech start-ups and businesses could become a leading focus of environmental activity in Westminster and London. Delivering a location for environmental best practice could lead to Westminster to being the UK's first "Enviro-Hub".

FUTURE CHALLENGES

The growth of the environmental sector will bring opportunities and there will be competition as to where the "environmental sector" will be based. Attempts have been made to base the sector in east London, but it has tended to be industrial processes rather than the high tech end of the sector. Westminster can offer space for the City to create such a cluster. Westminster's location in the heart of London, together with world class universities and partnerships mean that Westminster is already the world leading location for an "Enviro-Hub".

[17] London's Low Carbon Snapshot' Report, GLA 2013

DEVELOPING THE GREEN SECTOR - THE FUTURE PLAN

Next 3 years	Work with universities to develop research projects that can support the delivery of environmental objectives; Map the environmental sector and develop an action plan to support business; Undertake a business case to develop an "Enviro-Hub" in Westminster, to be a centre of excellence for new environmental start up companies.
3-6 years	Review the business case for an "Enviro-Hub" and if a clear positive case is made, begin delivery; Work with organisations to ensure that commercial units achieve the required energy standards; Deliver policy and work with funding opportunities to encourage the development of environment companies.
Beyond next 6 years	Support local environmental businesses; Develop innovative ideas for green businesses and promote these; Get involved with the environment sector.

8. Supporting sustainable growth

Sustainable growth means that existing businesses must improve their supply chain, become more efficient with their resources, and pollute less. Competitive, efficient business and a pleasant environment make the city a more attractive investment opportunity.

OUR PERFORMANCE

All eight Business Improvement Districts (BIDs) in Westminster include environmental objectives in their strategy, and are delivering environmental projects. Projects being delivered with the support of the City Council include business recycling, freight consolidation, green infrastructure, cycling and sustainable transport, air quality and public realm improvements. 91% of fund managers and investors believe sustainability issues are of some importance to their occupiers, compared to just two thirds in 2010. [18]

With only 13% of businesses being confident that they have the skills to compete in a sustainable economy, [19] Westminster City Council was a lead partner in the Cross River Partnership project "Smart Green Business" [20] which ran till 2014. This project supported over 200 central London SME's to improve their environmental performance, market themselves, save money and position the business for the future.

The Council uses its procurement powers to help drive business towards environmental responsibility, and to stimulate a market for environmental goods. As a responsible authority environmental sustainability is a key aspect of good quality procurement decisions. In the council's RPS it is required that companies tendering for work to deliver environmental improvement.

The City Council has planning policy which requires new development to be constructed, operated and maintained in an environmentally responsible manner. This includes careful sourcing of materials, reducing energy demand, and improving local air quality. These policies have resulted in developments including renewable energy, and green infrastructure into the development of schemes. London now has around 700 green roofs in the Central Activities Zone. [21]

62 Buckingham Gate, Victoria Street includes solar PV panels on the southern slope of the roof, and living roof on the northern slope.

[18] GVA – Green to Gold, 2014
[19] Preparing for the Perfect Storm, IEMA 2014
[20] *http://www.smartgreenbusiness.co.uk/*
[21] GLA Green Roof Map (2014)

FUTURE CHALLENGES

Securing sustainable and resilient energy supply is a major issue for business and the environment. An affordable, low carbon and locally secure power supply is vital for Westminster's existing and future economy growth. Through the planning system the City Council already works to ensure that new buildings incorporate high environmental standards – 83% of new office buildings in central London deliver high internationally recognised environmental standards. [22] Westminster needs to deliver new energy infrastructure to maintain this and continue to reduce energy demand in existing buildings.

A report on the growth of the West End, [23] highlights that the City Council must address several environmental issues in order to realise the city's full economic potential. These issues are: the West End's poor air quality; combating and adapting to the effects of climate change; and energy security and efficiency. Growth can only be supported with the provision of sustainable resources. An increase in population, density and transport demands means higher energy and resource consumption, with increased pressures on Westminster's electrical grid and supporting infrastructure. Growth offers an opportunity to deliver environmental improvements to the City. New infrastructure such as green space improvements, new energy centres including renewable technologies and more sustainable buildings and transport infrastructure to deliver air quality improvements.

The City's heritage is an economic challenge as commercial properties cannot be rented out if they fail to deliver energy standards after 2018. This challenge provides opportunities for a local workforce to deliver retrofitting but requires legislative changes to simplify this.

Did you know?

Leading global cities recognise climate change threats to business. 76% of them report that climate change will impact on business. The sectors affected range from food services to tourism.

(Protecting our Capital, 2014).

A changing climate will bring change to the economic growth of the City. Warmer summers will increase the number of visitors to our attractions, and to on-street cafés. Risks include an urban heat island effect which will impact on health and quality of life, and increased electricity demand for air conditioning. With increases in stormy weather and surface water flooding, business may face increase insurance premiums and will have to manage these effects.

The majority of businesses in Westminster are small and medium sized enterprises (SMEs) for which environmental considerations are low priority and they have limited resources to implement change. The Council will have to engage with SMEs to enable them to improve. Engagement with SMEs can be an intensive process, but will deliver reduced costs and improve environmental performance.

Superfast broadband will deliver environmental benefits to the City and reduce the need to travel. The rolling out of the government's superfast broadband project will also deliver 24,000 jobs nationally by 2024 [24]. Alongside this, more efficient working practices delivered through superfast broadband will give an extra 10 million more hours nationally for individuals to spend on leisure activities.

[22] London Office Survey 2014, Deloitte
[23] West End Commission Report, 2013
[24] UK Broadband Impact Study, 2013

THE FUTURE PLAN

Next 3 years	Promote and support SMEs in achieving a better environmental performance through schemes like the Smart Green Business Programme.[25] Use the Council's procurement process to encourage environmental improvements in SME performance; Work with the national grid to deliver new sites for energy generation and new sub-stations; Deliver and implement new planning policy that will require higher environmental standards in new development; Work with government and suppliers to ensure broadband capacity and speeds are delivered.
3-6 years	Work with organisations to ensure that rented commercial units achieve the minimum energy standards required by law and can deliver local employment opportunities; Work closely with the local business community to help them undertake their Corporate Social Responsibilities projects in Westminster.
Beyond next 6 years	Work with the BIDs to deliver their environmental needs set out in their business plans; Support businesses in delivering shared objectives around issues such as air quality and transportation.
What you can do	Support businesses that operate responsibly; Businesses can join BIDs to share best practice and resources; As a business, close doors to keep heat during winter and cool air in summer; Use your purchasing choices to buy responsible goods and services.

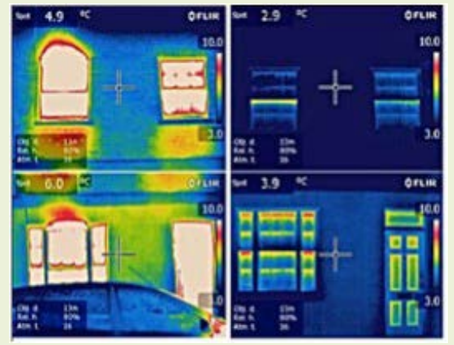
[25] Smart Green Business, was a successful programme run through Cross River Partnership for the benefit of central London businesses.

Case Study: Grosvenor Estates - "A healthy retreat in the heart of London"

In November, Grosvenor will complete their first three properties in Belgravia and Mayfair, that achieve "EnerPhit Passivhaus" standard – a first for London's private rented sector.

Grosvenor's objective is to help their customers get more from their homes – more comfort, more health benefits and a more peaceful way of living. By developing their properties through sustainably retrofitting, Grosvenor are going beyond the standard levels of energy efficiency and ensuring the long-term sustainability of their London estate. The retrofitting programme enables the Grosvenor Estate to future proof their buildings from changes to legislation and create better places for tenants to live.

The refurbishment will deliver "EnerPhit Passivhaus" standard which is the world's leading sustainability standard for refurbishment. It provides a high level of occupant comfort whilst using very little energy. This includes efficient ventilation, triple glazing, insulation and airtightness. The photos (right) shows the Passmore Street properties taken with thermal imaging on the same day. Number 9 (left building) without energy improvements, and number 21 (right) with energy efficiency improvements.



The challenge is to retain the typical feel of a London terrace and deliver environmental improvement. For that reason new technologies and materials were used including:

- ultra-slim, and super-efficient insulation boards;
- breathable and moisture-proof air tightness membrane;
- locally constructed triple-glazed mock-sash windows;
- mechanical heat recovery ventilation units; and
- discrete solar panels.

These technologies have brought energy use for these homes to almost zero for heating, lighting and cooling. This will save occupiers money, improve the local environment and create healthy homes in the heart of London.

9. Water as a resource

In Westminster water is needed for human consumption, dust damping, washing and cleansing, waste removal and watering planting. It is used in landscaping to develop areas of calm, as seen around Paddington Basin development. Water courses are a mechanism to transport goods, people, and waste. In extreme weather events excess water is a risk to property and to human health.

A larger population uses more water than ever before. Our current demand for water is unsustainable, and as the number of Londoners increases and summer rainfall decreases, there are challenges to meeting demand whilst safeguarding the environment.

Most of Westminster's water is from the water courses and groundwater across the South East of England. There need to be plans put in place to cope with a decreasing resource. Wasting less water has multiple benefits, as well as saving money on water bills and energy costs.

Under the EU Water Framework Directive all Councils have a role to play in managing water pollution that runs off hard-standing into water courses. In Westminster, this pollution can be in the form of oils, cigarette butts, and chemicals found in dust. The main water courses monitored are the River Thames and the Regent's Canal, but the city contains other water features, including 6.4 kilometres of canal frontage.
There are also five 'hidden rivers' in the city; the Westbourne, Tyburn, Tyburn Brooke, Kilbourne and Long Ditch which form part of London's Combined Sewer Network which can at times of intense rainfall discharge into the Thames. The canals and water bodies such as the Serpentine and St James's and Regent's Park lakes also provide a haven for wildlife and provide an oasis and tranquil place for residents and workers in the city.

Did you know?

By law restaurants and cafes have to be able to supply you with water, so you can ask for it rather than pay for bottled.

OUR PERFORMANCE

The Environment Agency and Thames Water recognise that London is an area where demand for water exceeds supply. They highlight the South East of England as 'seriously' water stressed, meaning that the demand for water is having a negative impact on the environment.

Londoners use more water than the national average (167 litres per person per day in 2010 compared to 146 litres per person per day nationally), largely because we live in small households, which are not water efficient. Many Londoners have little incentive to save water – only one in four homes has a water meter. [26] New products and fittings use less water in our bathrooms and kitchen appliances and the Council with Thames Water have distributed water saving devices free to households in 2014 to promote a more efficient use of water. In 2008 the City Council reduced its water consumption by £40,000 (approx 11%) through the introduction of water saving measures such as spray taps and low flush toilets in Council buildings. The City Council will also work closely with Thames Water to address leaks and associated works.

The Environment Agency reports that the ecological qualities in the water courses that they monitor in Westminster (the Regent's Canal and Thames River) are "good with potential" and "moderate with potential". This is an improvement over the last few years and shows that the work being undertaken by a range of stakeholders is having a positive outcome.

FUTURE CHALLENGES

With Westminster's population expected to rise from 228,000 in 2014 to 254,600 in 2030, so will our demand for water. [27] A changing climate will increase the need to be sensible with water usage. Westminster City Council will lobby Thames Water to ensure that water leaks are minimised and water efficiency is improved and promoted. Westminster City Council will also work with developers to increase rainwater harvesting and grey water recycling being incorporated into new development.

Water quality will also need to be assured in the future to meet the requirements of the Water Framework Directive (2000) and we will need to ensure pollution from surface water runoff is minimised. This may be achieved by incorporating 'Sustainable Urban Drainage' (SUDs) measures which help minimise water pollutants entering the drainage network in Westminster, and therefore minimise the risk of pollutants discharging into the river Thames via Combined Sewer Overflows.

With an expected increase in restaurants and food outlets in the City, there will be more pressure on these sectors to act responsibly in the disposal of fats, oils and grease and not throw them into the drainage system.
In response Thames Water have developed a FOG (Fats, Oils and Grease) campaign to inform communities not to dispose of such waste through the sewage network. These fats can form blockages within the sewage system which result in general sewage waste not being flushed away.

[26] London Water Strategy (2011)
[27] GLA figures 2014

THE FUTURE PLAN

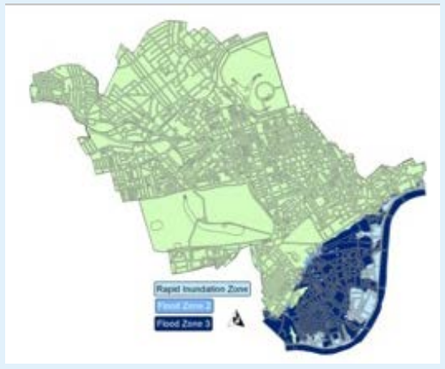
Next 3 years	Improve water efficiency of Council buildings through retrofitting simple cost-effective measures. This will save money and conserve water; Put in place higher standards for water efficiency in new developments, recognising that Westminster is an area of water stress due to high demand; Promote water efficiency on building and construction site, through our Code of Construction Practice; Work with Thames Water to promote their campaigns to reduce water use and ensure that waste products are disposed of responsibly.
3-6 years	Deliver new public drinking fountains in the City in appropriate locations where people can access safe and free water; Adopt new policy that incorporates environmental protection measures to retain and control polluted water.
Beyond next 6 years	Continue to promote water efficiency; Work with Thames Water to roll out their water meter programme to all; Minimise the use of water for irrigation in all new landscaping projects.
What you can do	Order and install your free water saving devices from Thames Water *http://freebies.thameswater.co.uk/*; Don't buy bottled water but use re-usable containers to drink tap water; Install a water butt at home to water plants with collected water; Only fill your kettle with the water you need; Report leaks.

10. Managing Flood Risk

Westminster is most at risk from the tidal Thames and surface water flooding. Predicted increased frequency and intensity of rainfall in the future may increase the risk of flooding, which will be compounded by increased urban intensification. Westminster will need to ensure sustainable flood risk management measures are in place to improve resistance and increase resilience to flood risk.

Surface water flooding is the most likely source of flooding in Westminster. Approximately 22,100 properties are estimated to be at risk from surface water flooding during a rainfall event with a 1 in 200 annual chance of flooding occurring. This risk is increased by the dense built urban character of Westminster, with few surfaces able to absorb rainfall. Increased flood risk could increase the likelyhood of extensive damage to buildings and infrastructure, disrupt transport and businesses, effect peoples stress and cause health problems. It will also increase insurance costs.

Given the nature of flooding and flood risk, Westminster must manage this risk strategically and work with partners to improve flood resistance and increase flood resilience to the predicted effects of climate change, population growth and new development.



OUR PERFORMANCE

The City Council is working in partnership with Drain London, Central North London Flood Risk Partnership, Thames Water, Environment Agency and other Risk Management Authorities to manage flood risk. Westminster has modelled flood risk in the City and is investigating possible options to manage that risk in the future.

The City Council supports development and infrastructure which incorporates sustainable drainage systems. It will continue, in its role as Lead Local Flood Authority, to ensure that surface water drainage flow routes and the City's gullies are managed and maintain to reduce flood risk.

While it is impossible to eliminate the possibility of flooding, we will work with partners to ensure flood preparedness measures, as outlined in the Multiagency Flood Plan, are in place to support an emergency response to flooding, enabling rapid recovery after flood incidents.

CityWest Homes have been trialling fats and oils collections at Lisson Green for residents and businesses. This helps reduce maintenance costs for removing drain blockages, which reduces flood risk, as well as helping create a fuel.

FUTURE CHALLENGES

A changing climate will increase the risk of flash flooding in London, [28] and Westminster must prepare for these events using public realm and development opportunities.

The introduction of Sustainable Drainage Systems (SUDs) will become increasingly important in the management of surface water flood risk in the future. SUDs help reduce peak water runoff from a site, which allows time for water to percolate into the ground, reducing the amount of surface water entering the drainage network, SUDs in Westminster could include: green roofs, 'rain gardens' (planted areas designed to capture water), permeable paving, and rainwater harvesting. In order to ensure surface water flood risk is managed in the long term through the introduction of SUDS, management and maintenance of SUDs must also be agreed.

Flood risk management measures will need to be considered strategically at local, regional and national levels. This will require Westminster City Council to work in partnership across boundaries to ensure that responsibilities to manage flood risk are shared and understood.

[28] Climate Risks for London, Climate UK, 2012

THE FUTURE PLAN

Next 3 years	Implement planning policy to manage flood risk; Register and publish our flood risk management assets; Continue to maintain and manage the city's drainage assets; Update Westminster's Strategic Flood Risk Assessment by 2015; Publish our Local Flood Risk Management Strategy and work in partnership to ensure flood risk management objectives are in the Environment Agency's Flood Risk Management Plan; Publish our flood risk maps; Investigate possible options for surface water flood risk management for north west, central and south Westminster through externally funded studies.
3-6 years	Implement Westminster's Local Flood Risk Management Strategy; Work with Thames Water to inform residents and businesses to collect oil and fats.
Beyond next 6 years	Support implementation of Thames Tideway Tunnel Development Consent Order, and ensured that impact on Westminster is managed and minimised; Review Westminster's Strategic Flood Risk Assessment; Review local flood risk strategy.
What you can do	Don't pour materials including waste oils and fats down drains; Report any blocked drains to the Council.

Case Study: CityWest Homes Fats Collection

Blocked drains from waste fats and oils have been identified by Thames Water and the City Council as an increasing problem. When poured down the drain, cooking fats and oils build up on pipe walls restricting the flow of water.

In 2012 CityWest Homes started an award winning project called 'Don't pour it, store it' with the objective of the campaign to combat the problems with blocked drains and educate residents about the responsible way of getting rid of cooking oil waste. Repair figures showed that in 2012 CityWest Homes were spending £20,000 per year unblocking drains on the Lisson Green estate.

CityWest Homes worked with partners Wates who supplied the oil tanks, Flow3drains, who collect the oil and convert it into biodiesel fuel, and Vital Regeneration who helped promote the scheme.

An oil collection tank was placed next to recycling facilities on the estate to make the new recycling initiative seamless. Young children were invited to create artwork which is displayed by the oil recycling facility and the website, local and quarterly newsletters and social media where used to promote oil recycling.

To ease the oil recycling process CityWest Homes distributed funnels along with leaflets explaining the new oil recycling facility to every home on the estate. CityWest also distributed a DVD of the benefits of oil recycling to the Lisson Green Residents' Association, local schools and community groups.

The oil recycling campaign has contributed to a significant reduction in the cost of fixing blocked communal drains. At the end of 2013, the annual cost for addressing blocked drains had decreased to £8,000 and the collected oil is converted into biodiesel. To date CityWest Homes have recycled 900 litres which equates to 6,000 miles worth of fuel.

11. Communicating and encouraging people into environmental action

Effective communications plays a vital role in helping to achieve the Council's vision for a sustainable Westminster.
It demonstrates the Council taking the lead, and strengthens the Council's position when lobbying central government.

Our communications encourage those in Westminster to adopt more environmentally-friendly behaviours and take steps to protect and improve their health, and everyone's environment.

OUR PERFORMANCE

In 2012 the City council ran a campaign called 'Bin, Scan, Win!' This was a communications initiative funded by DeFRA, designed to encourage the use of on-street litter and recycling bins and reduce littering in the public realm. It was a reward scheme where people could enter a prize draw by scanning QR codes on the sides of recycling bins with their phones.

Surveying the people that took part when asked about the impact of the 'Bin, Scan, Win!' scheme, 43% stated that they already recycled and the scheme has given them extra encouragement to recycle more, while 28% stated that it did not make a difference to how/how much they recycled. The scheme was a first for local authorities and demonstrates the Council's innovative approach to using communications activity to drive positive change in relation to environmental and sustainability issues.

The objectives of the Council's communications campaigns are:

- To highlight existing successes and the progress that has already been made on issues such as: improving sustainable transportation options including our low car ownership; and extensive work with local businesses through Business Improvement Districts
- To empower residents, visitors and businesses to take steps that will improve their health and be aware of their environment
- Choosing to cycle or walk instead of drive
- Notifying people when there are particularly high levels of pollution

- To access hard-to-reach groups who may be particularly vulnerable to poor air quality to provide guidance or reassurance where necessary
- To take a lead in promoting and pursuing the green agenda by demonstrating a clear commitment to sustainability in the communications issued, for example by printing all council publications on recycled paper and holding regular promotional events
- To strengthen relationships and build links with resident groups, environmental campaigning groups and other key stakeholders

Current channels for communication that the Council uses:

- Westminster Reporter – quarterly, 123,000 households, libraries etc
- Families First newsletter – monthly, 7,500 subscribers
- Edit (young people) – each half-term, 9,500 households, schools etc
- Westminster Plus (older people), 3 times a year, 19,100 households, libraries etc
- Business enewsletter, monthly, 1,600 subscribers
- Twitter, 14,300 followers
- Facebook, 1,300 followers
- Website, average 11,000 visitors daily
- Local and national press

FUTURE CHALLENGES

It is vital that the Council promotes a clear vision for City in delivering the environmental agenda. This vision will be delivered not just by the Council, but also by the wider Westminster community. We need to show leadership when required, and support the community to take ownership and deliver action when needed.

Westminster City Council must ensure that the Council's messages are reaching the right audiences and make best use of digital technology and social media in order to achieve this. Market analysis and targeted communications campaigns will save time and effort and deliver better outcomes.

THE FUTURE PLAN

Next 3 years	Review the Council's internal environmental performance and staff engagement; By the end of 2015 refresh and update the City Council's Environmental Policy; Lobby the government on a fairer local deal for Westminster to address our energy needs and address poor air quality; Include a section in the city survey so that residential opinion on how the local environment is measured and services delivered; Develop a digital engagement programme. This will include refreshing the Council web pages and improved ways in which residents can interact with the Council to share ideas; Develop an awards project to reward good environmental behaviour in the City; Include an environmental section into the ward profiles reports; Promote local environmental projects that could be delivered by ward budgets; Work with schools to deliver education packs for schools and colleges to involve young people on the environment.
3-6 years	Work with our businesses to ensure they have access and deliver their electric vehicles needs following the introduction of the ultra low emission zone; Switch the paper publications produced to 100% recycled paper content; Work with the rental market to ensure that they are aware of their responsibilities to deliver energy efficient buildings.
Beyond next 6 years	Reduce the amount of paper based communications that we produce as we move towards internet based communications; Support the longer term aims and objectives of this strategy with targeted lobbying and communications activity; We will start the review of this document and developing its replacement .
What you can do	Talk to people in your community about the local areas and its environment; Take part in environmental schemes and initiatives run by local businesses and the Council; Report issues such as fly tipping and antisocial behavior to the Council; Suggest ideas to improve your neighbourhood to your ward councillors.

Appendix

Other key documents linked to the Westminster Environmental Report and Sustainability Strategy include:

- City for All (2015)
- Better City Better Lives (2014)
- The Westminster City Plan (2013)
- The Unitary Development Plan (2007)
- The London Plan (2011)

Other key documents that are linked to Noise in Westminster include:

- The Westminster Noise Attitudes Survey (2008)
- The Westminster Noise Measurement Survey (2008)
- The Westminster Open Spaces Noise Study (2008)
- The Westminster Aircraft Noise Study (2009)
- Westminster's Noise Strategy (2009)
- Noise Policy Statement for England (2010)
- DEFRA Strategic Noise Maps (2011)
- Noise pollution economic analysis (2013)

Other key documents that are linked to Waste and Resources Management include:

- The London Waste Strategy (2011)
- The Westminster Waste Strategy (2014)
- The Westminster Responsible Procurement Strategy (2014)

Other key documents that are linked to Energy include:

- Delivering London's Energy Future: The Mayor's climate change mitigation and energy strategy (2011)
- The Health Impacts of Cold Homes and Fuel Poverty (2011)
- The 11th annual report of the Fuel Poverty Advisory Group for England (2012)
- Westminster HECA report (2013)
- Westminster Decentralised Energy Masterplan (2014)
- London Infrastructure Plan 2050 (2014)

Other key documents that are linked to Air Quality include:

- Westminster City Council Air Quality Action Plan (2013)
- London's Air Quality Strategy (2010)
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2011)

Other key documents that are linked to Transport include:

- The Local Implementation Plan (2013)
- The Westminster Cycling Strategy (2014)
- The Westminster Walking Strategy (2015)
- The London Transport Strategy (2010)
- The Westminster Sustainable Modes of Travel to School Strategy (2014)

Other key documents that are linked to Biodiversity and Open Spaces include:

- Green Infrastructure & Open Environments: All London Green Grid SPD (2012)
- Making Space for Nature, Department for Environment, Food and Rural Affairs (2010)
- Victoria BID – Green Audit (2010)
- Open Space Strategy, Westminster City Council (2007)
- Natural Environment and Rural Communities Act (2006)
- Biodiversity Action Plan, Westminster City Council (2006)

Other key documents that are linked to this Economic Prosperity and Sustainability include:

- London Economic Development Strategy, GLA (2010)
- Westminster Economic Development Strategy (2015)

Other key documents that are linked to Water Management include:

- Westminster's Strategic Flood Risk Assessment (2010)
- London Water Strategy (2011)
- Thames Water 5 Year Plan (2014)
- WaterWise web pages
- Enhance Surface Water Flood Risk Modelling (2013)
- Environment Agency web pages (only relevant for Tidal Flood Risk)
- London Resilience Flooding web pages

City of Westminster

westminster.gov.uk #CityforAll

Westminster City Council

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City of Westminster

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Cabinet Member for Sustainability and Parking
Ward Member for Hyde Park

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18th September 2015

Dear Mr Williamson

Westminster City Council welcomes the London Assembly Environment Committee investigating the environmental pressures expected to result from the growth of London over the coming decades.

We are exceptionally committed to supporting the GLA's agenda on ensuring that key infrastructure and investment needs are identified, planned for and supported in the short term to enable this growth to happen sustainably and not result in negative environmental or social consequences.

We will be launching a Greener City Action Plan (GCAP) for Westminster on 19th October. The GCAP sets out our long term vision for a sustainable Westminster against a backdrop of economic and population growth. It also develops a road map for action in a number of sectors including energy, water and green infrastructure.

We feel that increasing energy demands and air pollution are the key issues facing central London over the next few decades.

Specifically, we would ask the GLA to continue to provide leadership to Borough's on energy policy within the London Plan. The Government is making significant policy interventions which will hamper our collective efforts to deal with the London energy trilemma (secure, affordable and low-carbon energy). Specifically, we would currently welcome an early intervention scheme whereby the GLA provides a strong policy basis for a local energy requirement to ensure that new developments place as little extra demand on the energy network as possible, countering the abolishment of the Government's zero carbon homes policy.

Westminster City Council

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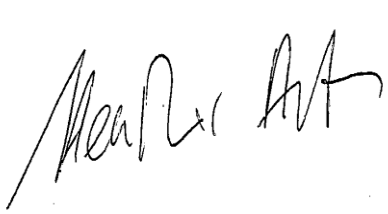
City of Westminster

We have attached a draft copy of our GCAP which gives details of what we consider to be our main environmental issues, policy solutions and key actions for the next decade. Your feedback is welcomed.

We would also specifically welcome the opportunity to work closely with you to ensure that GLA policies are applicable on the ground.

Yours sincerely



Cllr Heather Acton
Cabinet Member for Sustainability and Parking

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6 October 2015

Ian Williamson,
Scrutiny Manager
London Assembly,
City Hall,
The Queen's Walk,
London SE1 2AA

Dear Mr Williamson,

Response to the Environment Committee's investigation into *Environmental pressures of London's growth*

I recognise that this late response was not in time to feed into your October Committee report, but I hope you will find it useful "to inform later stages of the project".

About the Woodland Trust

The Woodland Trust is the UK's leading woodland conservation charity and aims to protect native woods, trees and their wildlife for the future. We do this by restoring and improving woodland biodiversity and increasing people's understanding and enjoyment of woodland. We own over 1,276 sites across UK (including several in London) covering over 23,580ha (from 0.06 to 4,875 ha), including 200 SSSIs, and we have 500,000 members and supporters.

What do you see as the most significant environmental impacts and implications of London's growth over the coming decades?

c. Green infrastructure

As London grows, the need and demand for green infrastructure, and canopy cover and woodland in particular, will increase. However, this infrastructure is itself threatened by the demand for space for housing and employment.

There is now a wealth of evidence on the many benefits of accessible woodland and high canopy cover, including: improving physical and mental health; air quality; water quality; water management (reducing flooding); shading; cooling through evapotranspiration; as well as the more obvious benefit of improving biodiversity.

Most of these issues are summarised, along with the appropriate references for the background research and evidence, in the Trust's publication *Residential Development and*

Trees http://www.woodlandtrust.org.uk/publications/2015/07/residential-developments-and-trees/
I have expanded on some of the topics in *Residential Development and Trees* below.

Woodland Access Standard

The Woodland Trust believes that proximity and access to woodland is an important contributor to creating healthy communities and 'placemaking'. As highlighted in Government policy by the **Public Health White Paper** (Healthy Lives, Healthy People; Nov 2010**),** there are currently tremendous opportunities for native woodland to contribute positively towards delivering improved mental and physical health.

The **White Paper** states that: "*Access to green spaces is associated with better mental and physical health across socioeconomic groups*." and that "*Defra will lead a national campaign to increase tree planting throughout England, particularly in areas where tree cover would help to improve residents' quality of life and reduce the negative effects of deprivation, including health inequalities*."

Recognising these policy linkages, the Woodland Trust has researched and developed the Woodland Access Standard (WASt) for local authorities to aim for, encapsulated in our *Space for People* publication. We believe that the WASt can be an important policy tool complimenting other access standards used in delivering green infrastructure for health benefits. The WASt is complimentary to Natural England's Accessible Natural Greenspace Standard and is endorsed by the Forestry Commission.

The full report can be found at http://www.woodlandtrust.org.uk/en/about-us/publications/key-publications/space-for-people/Pages/space-for-people.aspx but the Trust updates the data periodically. The latest data can be supplied free of charge by the Woodland Trust both in map and in numerical/GIS form.

The Woodland Trust Woodland Access Standard recommends:

- that no person should live more than 500m from at least one area of accessible woodland of no less than 2ha in size

- that there should also be at least one area of accessible woodland of no less than 20ha within 4km (8km round-trip) of people's homes.

Applying this standard in London, gives the following figures (see table below).

Table 1: Accessibility to Woodland in London using the Woodland Trust Woodland Access Standard

Borough	**% population with access to 2ha+ wood within 500m**	**% population with access to 20ha+ wood within 4km**
Barking and Dagenham	0	57.8
Barnet	11.9	95
Bexley	4.6	97.6
Brent	8.4	33.9
Bromley	32.1	100

Camden	6.0	83.2
Croydon	32.7	90.4
Ealing	1.3	41.7
Enfield	10.1	98.9
Greenwich	25.8	100
Hackney	9.9	14.3
Hammersmith and Fulham	0.1	88.9
Haringey	8.8	74
Harrow	6.3	84.8
Havering	14.7	97.1
Hillingdon	6.7	80.1
Hounslow	13.3	46
Islington	0.0	53.8
Kensington and Chelsea	14.4	40.8
Kingston upon Thames	9.9	95.8
Lambeth	11.4	50
Lewisham	12.7	100
Merton	25.1	89.9
Newham	12.1	92.5
Redbridge	24.3	95.7
Richmond upon Thames	19.2	81.3
Southwark	13.4	80.2
Sutton	4.9	96.1
Tower Hamlets	0.5	28.3
Waltham Forest	25.3	100
Wandsworth	24.4	60.1

Westminster	2.8	32

We would be happy if the GLA's Information Unit were able to verify and update these figures.

Flood risk

Trees can reduce the likelihood of surface water flooding in urban situations, when rain water overwhelms the local drainage system, by regulating the rate at which rainfall reaches the ground and contributes to run off. There is a positive role here for the use of trees with SUDS initiatives. Slowing the flow increases the possibility of infiltration and the ability of engineered drains to take away any excess water. This is particularly the case with large crowned trees. Research by the University of Manchester has shown that increasing tree cover in urban areas by 10 % reduces surface water run-off by almost 6%. (*Using green infrastructure to alleviate flood risk, Sustainable Cities - www.sustainablecities.org.uk/water/surface-water/using-gi/).* The Woodland Trust has also produced a policy paper illustrating the benefits of trees for urban flooding – *Trees in Our Towns – the role of trees and woods in managing urban water quality and quantity* (https://www.woodlandtrust.org.uk/mediafile/100083915/Trees-in-our-towns.pdf).

The Woodland Trust believes that trees and woodlands can also deliver a major contribution to resolving a range of water management issues, particularly those resulting from climate change like flooding and the water quality implications caused by extreme weather events. They offer opportunities to make positive water use change whilst also contributing to other objectives, such as biodiversity, timber & green infrastructure - see the Woodland Trust publications *Stemming the flow – the role of trees and woods in flood protection* - https://www.woodlandtrust.org.uk/publications/2014/05/stemming-the-flow/ and *Woodland actions for biodiversity and their role in water management* - https://www.woodlandtrust.org.uk/mediafile/100263208/rr-wt-71014-woodland-actions-for-biodiversity-and-their-role-in-water-management.pdf?cb=001108c3a78944299140a996b2cd7ee8.

In addition, a joint Environment Agency/Forestry Commission publication *Woodland for Water: Woodland measures for meeting Water Framework objectives* states clearly that: *'There is strong evidence to support woodland creation in appropriate locations to achieve water management and water quality objectives'* (Environment Agency, July 2011- http://www.forestry.gov.uk/fr/woodlandforwater).

A landscape with more trees will also help increase the resilience of our rural areas, by reducing soil erosion and soil moisture loss. Improving the condition of existing woodlands, and the creation of a more resilient ecological network of associated habitats, will help wildlife adapt to climate change and other pressures'.

The Woodland Trust has produced a further paper – *Planting Trees to Protect Water – The role of trees and woods on farms in managing water quality and quantity* – that shows how trees and woodland can help mitigate peak flood flows. The report is available at - https://www.woodlandtrust.org.uk/mediafile/100083903/Planting-trees-to-protect-water-RBC-Bluewater-farming-report-evidence.pdf.

Therefore, the Woodland Trust would like to see trees and woodland, which have been proven to have a significant effect on flood amelioration, acknowledged accordingly in the Green Infrastructure Strategy and other new London Plan documents.

Practical guidance and potential SPD

The Woodland Trust is a member of the **Trees and Design Action Group** (TDAG) - a unique multi-disciplinary group of professionals and organisations from both the private and public sectors that is seeking to promote the benefits of trees within the built environment. TDAG published ***Trees in the Townscape*** (TDAG, June 2012) http://www.tdag.org.uk/trees-in-the-townscape.html . This contains 12 principles of best practice aimed at designers, developers and planners to encourage integrated, joined up thinking, strategies, policies and implementation relating to trees in the urban realm.

TDAG have also recently published a practical guide for the retention and planting of trees in urban situations, including new development - *Trees in the Hard Landscape* (TDAG, September 2014). (http://www.tdag.org.uk/trees-in-hard-landscapes.html)

TDAG publications are referenced in the London Plan, but not named.

2. How, and how well, do London's current plans and policies manage the environmental impacts of its growth? What tensions or difficulties are there within or between them?

The current Local Wildlife Sites system in London has, until recently, managed to retain the best sites in London. This sites hierarchy of Metropolitan, Borough Grade and Local Grade is supported by London Plan Policy, but significant damaging developments have recently been allowed, including by the Mayor of London with no reference to biodiversity implications. An example is the approval for an incinerator on a site of Metropolitan Importance (and MOL).

3. How do policies and processes at the national and local levels help to manage these impacts? Again what tensions or difficulties are there?

The NPPF has clear guidance on ancient woodland and veteran trees, in Paragraph 118. However, the Communities and Local Government Committee have recommended that the wording for protection of irreplaceable habitats such as ancient woodland mirrors that for listed building – such that the need for damaging development on such habitat would need to be "wholly exceptional" to be permitted.

At the local level, where a LPA does not have an up-to-date plan with a 5-year housing allocation, the Trust is finding that developers are applying for development on ancient woodland, and testing the current wording of the NPPF.

4. What new or different ideas and approaches could improve London's strategy? Are there examples from other parts of the country or the world?

I suggest that *Space for People* and the WASt is used to inform the development of future London Plan documents. This has been used by other planning authorities in England.

5. What should be the focus for the 2016-20 Mayoral term in improving and taking forward London's environmental plans for the following decades? Consideration could be given to the development of the infrastructure plan, the green infrastructure network, the Environment Strategy and the London Plan.

Real protection for ancient woodland in the London Plan - the Woodland Trust is currently dealing with more than 500 threats to ancient woods across the UK, the highest number in its history. This is likely to soon include threats in London as the population expands as predicted in the Infrastructure Plan, so there should be a commitment to no loss of ancient woodland in the London Plan. The London Plan should clearly state that the need for development on irreplaceable habitats such as ancient woodland, and veteran trees outside of woodland, would have to be wholly exceptional for permission to be considered.

Survey and protect ancient and veteran trees in London.
Although the London Plan has policies on trees, we are already seeing threats to veteran trees in London. Furthermore, we simply don't know the extent and number of ancient and veteran trees in London, so more may be lost than we are aware of. There should be a programme to complete the Ancient Tree Inventory for London, and establish a register of Trees of National Special Interest within London as part of the green infrastructure network.

A delivery programme to increase tree cover in London, and encouragement for Londoners to visit woods - on account of the myriad public health and economic benefits brought by access to woods and trees where people live and work. This should be linked to encouraging more Londoners to get involved in tree-planting initiatives and enjoy their woodland more. The Woodland Trust already provides tree packs to schools and community groups, but the London Wildweb database should be reinstated so that Londoners can search for and visit their local green spaces.

Green infrastructure must be integral to new development.
Existing woodland and veteran trees should be retained and celebrated within new development, making the most of the public benefits this resource can provide to the new residents, and not viewed as an obstacle to development. New trees should be integrated into streets and green space in new development. Our recent publication Residential Development and Trees http://www.woodlandtrust.org.uk/publications/2015/07/residential-developments-and-trees/ , emphasises this approach.

Street trees and hedges should be part of the solution to tackling London's air pollution problem – the multiple benefits trees provide on streets include helping reduce air pollution, as detailed in the Trust publication Urban Air Quality http://www.woodlandtrust.org.uk/publications/2012/04/urban-air-quality/ Yet few road schemes or even urban greening projects appear to take into account how air quality goals can best be achieved.

The detail and clarity of the Mayor's Biodiversity Strategy, and London Tree and Woodland Framework, should be retained, albeit updated, in the proposed new Environment Strategy.
The Woodland Trust has noted a tendency to omit contextual detail and lose clarity when government strategies, policies or advice are combined or reviewed, usually due to a simplistic goal of reducing pages. We hope this isn't repeated in the combined London Environment Strategy proposed to replace the existing suite of environmental strategies.

Please get back to me if you have any queries on this, or require further clarification.

Yours sincerely,

Richard Barnes
Senior Conservation Adviser
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