

# AGENDA

**Meeting Environment Committee**

**Date Tuesday 3 March 2015**

**Time 10.00 am**

**Place Chamber, City Hall, The Queen's Walk, London, SE1 2AA**

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## Members of the Committee

Stephen Knight AM (Chair)

Murad Qureshi AM (Deputy Chair)

James Cleverly AM

Len Duvall AM

Nicky Gavron AM

Jenny Jones AM

Kit Malthouse AM

A meeting of the Committee has been called by the Chair of the Committee to deal with the business listed below.

Mark Roberts, Executive Director of Secretariat  
Monday 23 February 2015

## Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: David Pealing, Committee Officer; Telephone: 020 7983 5525; Email: [david.pealing@london.gov.uk](mailto:david.pealing@london.gov.uk).

For media enquiries please contact Mary Dolan, Telephone 020 7983 4603; Email: [mary.dolan@london.gov.uk](mailto:mary.dolan@london.gov.uk). If you have any questions about individual items please contact the author whose details are at the end of the report.

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Certificate Number: FS 80233

**Agenda  
Environment Committee  
Tuesday 3 March 2015**

**1 Apologies for Absence and Chair's Announcements**

To receive any apologies for absence and any announcements from the Chair.

**2 Declarations of Interests** (Pages 1 - 4)

Report of the Executive Director of Secretariat

Contact: David Pealing, [david.pealing@london.gov.uk](mailto:david.pealing@london.gov.uk), 020 7983 5525

**The Committee is recommended to:**

- (a) Note the list of offices held by Assembly Members, as set out in the table at Agenda Item 2, as disclosable pecuniary interests;**
- (b) Note the declaration by any Member(s) of any disclosable pecuniary interests in specific items listed on the agenda and the necessary action taken by the Member(s) regarding withdrawal following such declaration(s); and**
- (c) Note the declaration by any Member(s) of any other interests deemed to be relevant (including any interests arising from gifts and hospitality received which are not at the time of the meeting reflected on the Authority's register of gifts and hospitality, and noting also the advice from the GLA's Monitoring Officer set out at Agenda Item 2) and to note any necessary action taken by the Member(s) following such declaration(s).**

**3 Minutes** (Pages 5 - 42)

**The Committee is recommended to confirm the minutes of the meeting of the Committee held on 4 February 2015 to be signed by the Chair as a correct record.**

The appendix to the minutes set out on pages 9 to 42 is attached for Members and officers only but is available from the following area of the GLA's website:

[www.london.gov.uk/mayor-assembly/london-assembly/environment](http://www.london.gov.uk/mayor-assembly/london-assembly/environment)

#### **4 Summary List of Actions** (Pages 43 - 48)

Report of the Executive Director of Secretariat

Contact: David Pealing; [david.pealing@london.gov.uk](mailto:david.pealing@london.gov.uk); 020 7983 5525

**The Committee is recommended to note the completed and outstanding actions arising from previous meetings of the Committee.**

#### **5 The Mayor's Biodiversity Strategy Update** (Pages 49 - 92)

Report of the Executive Director of Secretariat

Contact: Alexandra Beer, [scrutiny@london.gov.uk](mailto:scrutiny@london.gov.uk); 020 7983 4947

**The Committee is recommended to note the report as background to putting questions to invited guests on the Mayor's Biodiversity Strategy update, and note the subsequent discussion.**

The appendix to the report set out on pages 53 to 91 is attached for Members and officers only but is available from the following area of the GLA's website:

[www.london.gov.uk/mayor-assembly/london-assembly/environment](http://www.london.gov.uk/mayor-assembly/london-assembly/environment)

#### **6 Bag it or Bin it?** (Pages 93 - 140)

Report of the Executive Director of Secretariat

Contact: Alexandra Beer, [scrutiny@london.gov.uk](mailto:scrutiny@london.gov.uk); 020 7983 4947

**The Committee is recommended to agree its report *Bag it or bin it? Managing London's domestic food waste*, as set out at Appendix 1 to the report.**

The appendix to the report set out on pages 97 to 139 is attached for Members and officers only but is available from the following area of the GLA's website:

[www.london.gov.uk/mayor-assembly/london-assembly/environment](http://www.london.gov.uk/mayor-assembly/london-assembly/environment)

#### **7 Environment Committee Work Programme** (Pages 141 - 142)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, [scrutiny@london.gov.uk](mailto:scrutiny@london.gov.uk); 020 7983 6541

**The Committee is recommended to:**

- (a) Note its work programme;**
- (b) Delegate authority to the Chair, in consultation with party Group Lead Members, to agree the report on severe weather risks and adaptations;**

- (c) Delegate authority to the Chair, in consultation with party Group Lead Members, to agree the report on diesel emissions;**
- (d) Delegate authority to the Chair, in consultation with party Group Lead Members, to agree any necessary response to a written briefing from GLA officers on plans to consult on changes to the Local Air Quality Management framework; and**
- (e) Note any verbal update from the Chair on initial proposals for the 2015/16 work programme, and delegate authority to the Chair, in consultation with party Group Lead Members, to agree the topic for the June 2015 meeting of the Committee, subject to confirmation at the London Assembly's Annual Meeting scheduled for 13 May 2015.**

## **8 Date of Next Meeting**

Subject to confirmation at the London Assembly's Annual Meeting on the 13 May 2015, the next meeting of the Committee is scheduled for Thursday, 4 June 2015 at 10.00 am in Committee Room 5, City Hall.

## **9 Any Other Business the Chair Considers Urgent**

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# Subject: Declarations of Interests

**Report to: Environment Committee**

**Report of: Executive Director of Secretariat**

**Date: 3 March 2015**

**This report will be considered in public**

## 1. Summary

- 1.1 This report sets out details of offices held by Assembly Members for noting as disclosable pecuniary interests and requires additional relevant declarations relating to disclosable pecuniary interests, and gifts and hospitality to be made.

## 2. Recommendations

- 2.1 **That the list of offices held by Assembly Members, as set out in the table below, be noted as disclosable pecuniary interests<sup>1</sup>;**
- 2.2 **That the declaration by any Member(s) of any disclosable pecuniary interests in specific items listed on the agenda and the necessary action taken by the Member(s) regarding withdrawal following such declaration(s) be noted; and**
- 2.3 **That the declaration by any Member(s) of any other interests deemed to be relevant (including any interests arising from gifts and hospitality received which are not at the time of the meeting reflected on the Authority's register of gifts and hospitality, and noting also the advice from the GLA's Monitoring Officer set out at below) and any necessary action taken by the Member(s) following such declaration(s) be noted.**

## 3. Issues for Consideration

- 3.1 Relevant offices held by Assembly Members are listed in the table overleaf:

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<sup>1</sup> The Monitoring Officer advises that: Paragraph 10 of the Code of Conduct will only preclude a Member from participating in any matter to be considered or being considered at, for example, a meeting of the Assembly, where the Member has a direct Disclosable Pecuniary Interest in that particular matter. The effect of this is that the 'matter to be considered, or being considered' must be about the Member's interest. So, by way of example, if an Assembly Member is also a councillor of London Borough X, that Assembly Member will be precluded from participating in an Assembly meeting where the Assembly is to consider a matter about the Member's role / employment as a councillor of London Borough X; the Member will not be precluded from participating in a meeting where the Assembly is to consider a matter about an activity or decision of London Borough X.

<b>Member</b>	<b>Interest</b>
Tony Arbour AM	Member, LFEPA; Member, LB Richmond
Jennette Arnold OBE AM	Committee of the Regions
Gareth Bacon AM	Member, LFEPA; Member, LB Bexley
John Biggs AM	
Andrew Boff AM	Congress of Local and Regional Authorities (Council of Europe)
Victoria Borwick AM	Member, Royal Borough of Kensington & Chelsea; Deputy Mayor
James Cleverly AM	Chairman of LFEPA; Chairman of the London Local Resilience Forum; substitute member, Local Government Association Fire Services Management Committee
Tom Copley AM	
Andrew Dismore AM	Member, LFEPA
Len Duvall AM	
Roger Evans AM	Committee of the Regions; Trust for London (Trustee)
Nicky Gavron AM	
Darren Johnson AM	Member, LFEPA
Jenny Jones AM	Member, House of Lords
Stephen Knight AM	Member, LFEPA; Member, LB Richmond
Kit Malthouse AM	Deputy Mayor for Business and Enterprise; Deputy Chair, London Enterprise Panel; Chair, Hydrogen London; Chairman, London & Partners; Board Member, TheCityUK
Joanne McCartney AM	
Steve O'Connell AM	Member, LB Croydon; MOPAC Non-Executive Adviser for Neighbourhoods
Caroline Pidgeon MBE AM	
Murad Qureshi AM	Congress of Local and Regional Authorities (Council of Europe)
Dr Onkar Sahota AM	
Navin Shah AM	
Valerie Shawcross CBE AM	Member, LFEPA
Richard Tracey AM	Chairman of the London Waste and Recycling Board; Mayor's Ambassador for River Transport
Fiona Twycross AM	Member, LFEPA

[Note: LB - London Borough; LFEPA - London Fire and Emergency Planning Authority; MOPAC – Mayor's Office for Policing and Crime]

3.2 Paragraph 10 of the GLA's Code of Conduct, which reflects the relevant provisions of the Localism Act 2011, provides that:

- where an Assembly Member has a Disclosable Pecuniary Interest in any matter to be considered or being considered or at
  - (i) a meeting of the Assembly and any of its committees or sub-committees; or
  - (ii) any formal meeting held by the Mayor in connection with the exercise of the Authority's functions
- they must disclose that interest to the meeting (or, if it is a sensitive interest, disclose the fact that they have a sensitive interest to the meeting); and



- must not (i) participate, or participate any further, in any discussion of the matter at the meeting; or (ii) participate in any vote, or further vote, taken on the matter at the meeting

#### UNLESS

- they have obtained a dispensation from the GLA's Monitoring Officer (in accordance with section 2 of the Procedure for registration and declarations of interests, gifts and hospitality – Appendix 5 to the Code).

- 3.3 Failure to comply with the above requirements, without reasonable excuse, is a criminal offence; as is knowingly or recklessly providing information about your interests that is false or misleading.
- 3.4 In addition, the Monitoring Officer has advised Assembly Members to continue to apply the test that was previously applied to help determine whether a pecuniary / prejudicial interest was arising - namely, that Members rely on a reasonable estimation of whether a member of the public, with knowledge of the relevant facts, could, with justification, regard the matter as so significant that it would be likely to prejudice the Member's judgement of the public interest.
- 3.5 Members should then exercise their judgement as to whether or not, in view of their interests and the interests of others close to them, they should participate in any given discussions and/or decisions business of within and by the GLA. It remains the responsibility of individual Members to make further declarations about their actual or apparent interests at formal meetings noting also that a Member's failure to disclose relevant interest(s) has become a potential criminal offence.
- 3.6 Members are also required, where considering a matter which relates to or is likely to affect a person from whom they have received a gift or hospitality with an estimated value of at least £25 within the previous three years or from the date of election to the London Assembly, whichever is the later, to disclose the existence and nature of that interest at any meeting of the Authority which they attend at which that business is considered.
- 3.7 The obligation to declare any gift or hospitality at a meeting is discharged, subject to the proviso set out below, by registering gifts and hospitality received on the Authority's on-line database. The on-line database may be viewed here:  
<http://www.london.gov.uk/mayor-assembly/gifts-and-hospitality>.
- 3.8 If any gift or hospitality received by a Member is not set out on the on-line database at the time of the meeting, and under consideration is a matter which relates to or is likely to affect a person from whom a Member has received a gift or hospitality with an estimated value of at least £25, Members are asked to disclose these at the meeting, either at the declarations of interest agenda item or when the interest becomes apparent.
- 3.9 It is for Members to decide, in light of the particular circumstances, whether their receipt of a gift or hospitality, could, on a reasonable estimation of a member of the public with knowledge of the relevant facts, with justification, be regarded as so significant that it would be likely to prejudice the Member's judgement of the public interest. Where receipt of a gift or hospitality could be so regarded, the Member must exercise their judgement as to whether or not, they should participate in any given discussions and/or decisions business of within and by the GLA.

## **4. Legal Implications**

- 4.1 The legal implications are as set out in the body of this report.

## 5. Financial Implications

5.1 There are no financial implications arising directly from this report.

<b>Local Government (Access to Information) Act 1985</b>
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List of Background Papers: None
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Contact Officer: David Pealing, Committee Officer
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Telephone: 020 7983 5525
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E-mail: <a href="mailto:david.pealing@london.gov.uk">david.pealing@london.gov.uk</a>
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# MINUTES

**Meeting: Environment Committee**  
**Date: Wednesday 4 February 2015**  
**Time: 10.30 am**  
**Place: Chamber, City Hall, The Queen's Walk, London, SE1 2AA**

Copies of the minutes may be found at:

[www.london.gov.uk/mayor-assembly/london-assembly/environment](http://www.london.gov.uk/mayor-assembly/london-assembly/environment)

**Present:**

Stephen Knight AM (Chair)  
Murad Qureshi AM (Deputy Chair)  
James Cleverly AM  
Len Duvall AM  
Nicky Gavron AM  
Jenny Jones AM  
Kit Malthouse AM

**1 Apologies for Absence and Chair's Announcements (Item 1)**

1.1 There were no apologies for absence.

**2 Declarations of Interests (Item 2)**

2.1 The Committee received the report of the Executive Director of Secretariat.

**2.2 Resolved:**

**That the list of offices held by Assembly Members, as set out in the table at Agenda Item 2, be noted as disclosable pecuniary interests.**

### **3 Minutes (Item 3)**

#### **3.1 Resolved:**

**That the minutes of the meeting held on 4 December 2014 be signed by the Chair as a correct record.**

### **4 Summary List of Actions (Item 4)**

4.1 The Committee received the report of the Executive Director of Secretariat.

#### **4.2 Resolved:**

**That the outstanding actions arising from previous meetings of the Committee be noted.**

### **5 Thames Water (Item 5)**

5.1 The Committee received the report of the Executive Director of Secretariat as background to putting questions on the work and policies of Thames Water to the following invited guests:

- Richard Aylard CVO, External Affairs and Sustainability Director, Thames Water;
- Alex Nickson, Policy & Programmes Manager, GLA;
- Sir Tony Redmond, Chair, London and South East Region, Consumer Council for Water; and
- Kevin Reid, Principal Policy Manager, GLA.

5.2 A transcript of the discussion is attached at **Appendix 1**.

5.3 During the course of the discussion, Thames Water committed to provide the Committee with the following additional information:

- The breakdown of expenditure on sustainable drainage across Thames Water's business plan, particularly in London if possible;
- A copy of the presentation given to the Mayor's Office on methods used to identify potential leaks in the trunk main network;
- The initial position taken by Thames Water in the negotiations with the water regulator on leakage targets; and
- A copy of the forward programme setting out the potential expansion of the smarter homes visits beyond the current pilot in Bexley and Greenwich.

5.4 Thames Water further committed to write directly to the Deputy Chair with further information on the issue he raised in Northumberland Avenue, WC2.

5.5 **Resolved:**

**That the report and discussion be noted.**

## **6 Environment Committee Work Programme (Item 6)**

6.1 The Committee received the report of the Executive Director of Secretariat.

6.2 **Resolved:**

**That the work programme be noted.**

## **7 Date of Next Meeting (Item 7)**

7.1 The date of the next meeting of the Committee was confirmed as Tuesday 3 March 2015 at 10.00 am in the Chamber, City Hall.

## **8 Any Other Business the Chair Considers Urgent (Item 8)**

8.1 There were no items of business that the Chair considered to be urgent.

## **9 Close of Meeting**

9.1 The meeting ended at 12.30 pm.

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Chair

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Date

**Contact Officer:** David Pealing, Committee Officer  
Telephone: 020 7983 5525; email: david.pealing@london.gov.uk

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**Environment Committee – 4 February 2015**  
**Transcript of Item 5: Thames Water**

**Stephen Knight AM (Chair):** Item 5 is our substantive item for this morning on water supply and demand in London. Can I welcome the three guests we have before us so far? Alex Nickson from the Greater London Authority (GLA). We will shortly be joined by Richard Aylard, who is just coming down from the public gallery. He is External Affairs and Sustainability Director at Thames Water. Welcome, Richard. We will give you a moment or two to settle in. Our final guest this morning is Sir Tony Redmond, who is Chair of the London and South East Region, Consumer Council for Water (CCWater). Welcome to our meeting.

We have a series of questions on a whole range of issues affecting water in London, but I will start and direct my first question to colleagues from the GLA. Can you please provide a short overview of the Mayor's role regarding water issues and his policies and key objectives? We have a lot to get through and so perhaps a fairly short answer, if you can.

**Alex Nickson (Policy & Programmes Manager, GLA):** Let me kick off with that one. The Mayor has no formal responsibility for water resources or flood risk management. However, they are two very key pressing issues to the safety and security of London, the quality of lives of Londoners and the affordability of Londoners' bills. We have published a number of strategies that look at these issues and we take a very keen interest in it.

**Stephen Knight AM (Chair):** OK. Thank you very much and thank you in particular for the brevity of your response. That was very helpful.

Turning to Thames Water, can you just give a brief outline of your part in implementing the Water Strategy for London?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We are responsible for supplying clean water to 9 million people in the south and east of England, going right up the Thames Valley, but of course the majority of those are in London. We are also responsible for treating waste water, over a larger area, which amounts to 5,000 square miles. It is 9 million people on clean water and 15 million on waste water. There are other London water companies, but we do the sewerage for their customers. We have a larger number of sewerage customers than we do on clean.

We actually seconded a member of staff to work with the Mayor's team when this Strategy was originally written. We work very closely with GLA colleagues and we provide regular updates on our business plan and water resource plan so that they are aware of what is coming and, of course, they challenge us very robustly on that. Alex Nickson was a member of the Customer Challenge Group during the recent price review process and Sir Tony [Redmond] on my left was the Vice Chair and so there is no shortage of challenge coming in. We are trying to make sure that all the numbers really do add up for the benefit of Londoners in the long term.

**Stephen Knight AM (Chair):** Thank you very much. We are now going to turn to the subject of drainage and my colleague Murad is going to lead off the questioning.

**Murad Qureshi AM (Deputy Chair):** I will address it to the GLA. Could you outline the current Drain London programme? Kevin, I think you are the Programme Manager for it.

**Kevin Reid (Principal Programme Manager, GLA):** That is right. Thank you. The Drain London programme has been running for five years now. Obviously, we are quite a substantial way through that. I can set out some of the things that the programme has achieved so far, if that helps.

**Murad Qureshi AM (Deputy Chair):** That would be useful.

**Kevin Reid (Principal Programme Manager, GLA):** First of all, we have established a Londonwide forum of all of the key flood risk agencies involved in managing surface water: the 33 local authorities as lead local flood authorities and then organisations like the Environment Agency, Transport for London, Thames Water and the London Councils group as well. That forum has been ongoing for five years and is set to continue.

We have also established seven borough partnerships where the boroughs themselves get into geographical groups based around London and co-ordinate and share experiences, ideas and information about how best to manage flood risk.

Of course, perhaps the main bulk of work has been through Drain London actually procuring and delivering surface water, flood risk and management information for those 33 lead local flood authorities. Over the years, we have produced surface water risk maps for each of the boroughs; surface water hazard maps, which show just how hazardous any surface water flooding would be; a surface water management plan for each of those authorities; and a document called a preliminary flood risk assessment, which was a requirement under the European Union (EU) Floods Directive. Those have all been produced and handed over to boroughs about three years ago now.

Since then, we have invited boroughs effectively to bid to us as the Drain London programme for funding to investigate the high-risk areas within their local authority areas. Under that programme, we have undertaken 25 more detailed flood risk assessments to look at just what the nature of that risk is. That is spread variously between a number of the boroughs. About 12 of the boroughs have investigated one or more of their high-risk areas. If it is helpful, I do have a list here to remind me of which boroughs.

**Murad Qureshi AM (Deputy Chair):** We are going into that later on, particularly sewage flooding, which is a particular west London problem, if I remember rightly. Could you just highlight the extent to which you are working with Thames Water on this front and funding issues possibly in the future?

**Kevin Reid (Principal Programme Manager, GLA):** Thames Water is on the Drain London Board and has a role in terms of advising on the surface water risks. It has provided a considerable amount of information on drainage capacity and sewerage issues and indeed has been the liaison between some of Thames Water's officers and the borough officers.

In terms of direct funding, we have not had direct funding from Thames Water in terms of this particular programme, but Thames Water has funded or is in the process of funding some other initiatives which broadly the Drain London programme is supporting and broadening out. That includes trial projects for the likes of sustainable drainage techniques. That has been ongoing.

We have also through the Drain London programme investigated the risks to some of London's important infrastructure: things like hospital sites; secondary schools; and police, fire and emergency stations. Those facilities have been examined in broad terms across London and then the ones that have been flagged up as at higher risk have had some more detailed work going on to investigate what those risks are. That work is not quite finished yet. It should be finished at about Easter time of this year. I can say that broadly, from that sort of work, most of this important infrastructure is actually at pretty low risk. There are one or two sites that have some higher risks, but the vast majority of it is at pretty low risk.



**Murad Qureshi AM (Deputy Chair):** Richard, is that your understanding of the Drain London programme that Kevin has articulated?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes. We regard Drain London as a really important body. It was ahead of its time. We were on it from the start and it has delivered a lot already and there is a prospect of doing a lot more. We also work with the Environment Agency Regional Flood and Coastal Committee. Those two bodies are the strategic level at which we work. It is very helpful not to have to deal individually with 33 London boroughs all the time and Drain London gives us an opportunity to deal collectively with the boroughs. It also provides a bit of informal benchmarking so that those boroughs that have actually been a bit slower to pick this up can see what the really good boroughs are doing. Again, we work with everyone.

There are lots of schemes we are developing now, particularly working on what we can actually get out of sustainable drainage schemes. It is very easy to spend money dealing with flooding but, if you are not careful, either you move the problem somewhere else or else you do not spend the money efficiently. It is only by having these sorts of discussions, getting proper modelling, proper mapping and proper prioritisation that we can spend money as efficiently as possible.

**Alex Nickson (Policy & Programmes Manager, GLA):** I just wanted to say that when we set up Drain London it had three key roles: to understand and prioritise where the risks were highest; to build capacity across London to make sure that the people best in a position to own and act on those risks are acting on those risks but to have a collaborative approach to it; and to provide thought leadership and demonstration projects on how to manage risks in an innovative way that is cost-effective. Of those three aims, we are doing a pretty good job.

**Murad Qureshi AM (Deputy Chair):** That is something that the Environment Committee has been quite keen to support in all the time I have been here.

Can I just move on the discussion on the London drainage programme? Do you believe the Government's approach to managing surface water flooding works in London? How does this fit into the plans and responsibilities of the programme you are currently undertaking?

**Kevin Reid (Principal Programme Manager, GLA):** The Government has set about some changes to how it envisages surface water being managed over the last couple of years.

However, if we look back to the 2010 Flood and Water Management Act, it was a really significant step forward in terms of clarifying roles and responsibilities. For London, it was pretty clear: each of the 33 boroughs would be a lead local flood authority. That is, I would say, probably quite a good position compared to the county areas of England which have the county council as the lead local flood authority and then the district councils which obviously have quite a lot of other responsibilities, notably in planning terms as planning authorities. To have the lead local flood authority and the planning authority as the same organisation essentially is quite a good step from that Flood and Water Management Act.

The intention in that Act, clearly, was to set up something called sustainable drainage approval bodies, which would take a very hands-on role to giving detailed approval to sustainable drainage. Last year, the Government's consultations and then actions actually decided that that was not going to go forward. To be honest, that is a step which will focus less attention on sustainable drainage than would otherwise have been the case. However, the Government has been clear about the delivery of sustainable drainage through beefing

up the planning system and adding requirements to the National Planning Framework. It is saying very much the right things about just how important sustainable drainage is to incorporate into new development.

Really, London has been ahead of the game nationally for over ten years now with its London Plan policy. It is generally very well adhered to, certainly on the sorts of planning applications that come to the Mayor. In fact, I struggle to remember planning proposals which were not achieving at least a 50% reduction through the redevelopment on the current level of surface water discharge. Some developments in the outer parts of boroughs or perhaps ones that are at a less dense level are achieving greenfield runoff rates. For a city like London, some years ago people would have suggested that that was unlikely, if not impossible. That is a good story.

**Murad Qureshi AM (Deputy Chair):** Kevin, you have given many reasons why the programme is working well and Richard has also highlighted how convenient it is for Thames Water to be dealing with something that deals with Greater London rather than 33 boroughs. Is there a place for possibly the Mayor having some statutory responsibilities rather than at the moment this kind of voluntary opt-in on this?

**Kevin Reid (Principal Programme Manager, GLA):** You are quite right. On the whole, it is a voluntary approach. I suppose the one thing that we have identified through the Drain London programme that has not been delivered in any great sense thus far - not to say nothing has been done because there are some good examples - is to say, "The planning system is all very well and that will churn through over the years, but we have the other 99% of London that does not get redeveloped each year. What are we doing about trying to make sure that those buildings, roads, schools, hospitals, etc, manage their drainage more sustainably?" The planning system on the whole will not really affect that.

That is why we have started work drafting something called the London Sustainable Drainage Action Plan. It is a plan of actions and activities that will help to, again, on a voluntary and persuasive basis, persuade and inform the owners of housing estates, roads, hospitals, as I say - and quite a good target would be things like large-format supermarkets, warehouse stores, etc - through their regular improvements, updating and repairs to their real estate to manage their surface water more sustainably. For example, if a car park for a supermarket was being resurfaced, there is an opportunity to redirect that rainwater and do something more beneficial with it. Maybe a housing estate needs a new roof. That may well be an opportunity as well. It is not about saying, "You have to go out and spend a lot of money on new drainage". It is about saying, "When and if these opportunities for these repairs and renovations come forward, let us think about how you can manage and adapt those to perform much more sustainably in their drainage". It should not really add any significant costs.

**Nicky Gavron AM:** Could you tell us, Richard, how much in the five-year plan Thames Water is spending on sustainable urban drainage, first of all over your whole catchment, which is not just London, and then on London?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have £20 million earmarked with which we want to disconnect at least 20 hectares of currently impermeable surface that drains into the network by 2020. That is an aspiration. We think we can probably do more than that with the help of Drain London and others, but there is certainly --

**Nicky Gavron AM:** Sorry. That is in London or across your whole catchment?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That is across the whole catchment, but the biggest problems are in London. There is no proportion that has to be spent

anywhere. We will spend it where we can get the most effect for it. However, if you look at the moment at where the cost-benefit is highest, most of that is likely to be in London.

**Nicky Gavron AM:** What is your turnover?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Turnover is £1.6 billion, but most of that is going on operating the system for both clean and waste water. Besides the £20 million I mentioned earlier, there is an awful lot of other money in the programme which will deal with a whole range of drainage problems, including making sure that we get less flooding from the sewers from hydraulic incapacity. There is well over £200 million being spent to deal with sewer flooding in the Counters Creek catchment in west London --

**Nicky Gavron AM:** In addition to the £20 million?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Absolutely. The £20 million is purely earmarked for innovative sustainable urban drainage systems (SuDS) projects to see what we can learn and how we can do more by working with local authorities. Rather than try to carve out a proportion of the rest that is specifically earmarked for sustainable drainage, it will be spent in whatever way is most effective in achieving the objective, whether that be reducing sewer flooding or dealing with surface water. I can give you a better breakdown in writing of all the drainage elements in the business plan.

**Nicky Gavron AM:** That would be very helpful.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** I am very happy to provide that. It is all in our plan and I will just have to get it boxed up in one place for you.

**Nicky Gavron AM:** On the surface of it - or on the face of it, anyway - £20 million does not sound like very much for something we have been talking about for such a long time and is always seen as the disappearing cutting edge.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That is £20 million for innovative projects to see what we can learn and what we can do differently. At the same time, as I said, we will spend more than £200 million on Counters Creek, which will relieve at least 1,800 properties from the threat of sewer flooding. That is all drainage as well. It just has a different label on it. Within the Counters Creek project, we are also doing SuDS trial projects in three streets, which are quite well advanced at the moment. We are putting in monitoring equipment not just in the three trial streets but in three comparable streets so that we can work out how much water we are keeping out of the sewer and at what cost. That is something that the rest of Drain London is watching with great interest. If we can prove there is a cost-benefit there, lots of boroughs will want to do similar retrofitting across their own densely populated areas.

**Nicky Gavron AM:** Understood. Is the Counters Creek three streets part of the £20 million?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** No, that is already happening.

**Nicky Gavron AM:** Which is your first innovative project?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The first innovative project would be the attempted retrofit of SuDS in three streets: two in Hammersmith and Fulham and one in Kensington and Chelsea.

**Nicky Gavron AM:** Yes, but where are the £20 million innovative projects coming on?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The £20 million will be spent from April this year onwards and it is --

**Nicky Gavron AM:** What is your first innovative project?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is likely to be doing something at Old Oak Common. What we want to do is to try to actually design and build SuDS for the developers to then come in and adopt. It will not be a question of saying to the developers, "You have to do SuDS". We will say, "We have this all worked out and this is what you have to do to connect up to it and this is what it will cost". That is the first project that we are working on. It is a long way from being approved yet, but it is something that we think is a way of getting ahead of the problem rather than constantly trying to play catch-up once developers have something designed, as they have in Battersea. There have been some problems there where they have designed their development thinking they could automatically connect to the sewers and actually that is the last thing we want them to do. We have had to go back and, with Alex's [Nickson] help, we have been pushing back on that. The idea at Old Oak Common is to get right in at the ground floor, start with SuDS and then think how the development works around it.

That is likely to be the first innovative project but, as I said, that money is earmarked for April 2015 to April 2020. So it is going to take us some time to work out how we choose to spend it and where we can get the best bang for our buck.

**Nicky Gavron AM:** Alex, is the GLA very involved in that?

**Alex Nickson (Policy & Programmes Manager, GLA):** Yes. Our game plan - I do not think it will come as any surprise to Richard - is to try to get as much of that £20 million for London as possible. We think the Drain London partnership and the Sustainable Drainage Action Plan are our key ways to justify that we can spend that money well and extrapolate, share and disseminate the lessons learned from it in order to enable a quantum step-change in how we do drainage.

**Stephen Knight AM (Chair):** Can I ask that when you put that in writing you share it with the whole Committee?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, of course. I will send it via the clerk.

**Jenny Jones AM:** Forgive me if I just hop back slightly. The Mayor has talked in his Water Strategy about decreasing summer rainfall, increasing numbers of people and so on. With current trends, when are we likely to experience shortages of water or is this now going to be an annual event?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have a 25-year water resources plan, which aims to make sure that we do not have water shortages and that we put --

**Jenny Jones AM:** We are coming to that. I really meant the immediate future.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** In the immediate future, we have groundwater levels high across the whole catchment and so there are not going to be any problems with water supply, unless we get truly extraordinary weather, this year. If this summer is dry and next

winter is dry, it is possible we could start to have problems in 2016. However, the whole basis of our 25-year plan is to make sure that we do not get to that point. Clearly, with London's population growing, we need to get the latest population forecasts properly reflected in our plans, which will be done at the annual update. That may change the rate at which we need to develop schemes to make sure there is enough water. It is a rolling programme to always try to stay well ahead of the problem.

**Jenny Jones AM:** "Well ahead"? That sounds great. I wanted to ask under question two as well about fracking. I understand that at the moment water companies are not statutory consultees when local authorities start to look at planning permissions for shale gas extraction. What is your view on that?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We would like to be consulted. We think that the biggest single safeguard is the Environment Agency. We work very closely with it and we know how seriously it looks at everything to do with water resources, both quantity and quality. That is a real reassurance.

However, we would like to be consulted. The Government, although it has said that it thinks the current arrangements are fine, has actually conceded that under secondary legislation water companies will be formally consulted before fracking goes ahead. That will give us an opportunity on behalf of customers to register concerns.

**Jenny Jones AM:** You will take a view based on research from other places and --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, research from other places. We will look at the geology of the area, where we abstract water from and what the consequences might be. There are two things, really. One is whether the fracking process is going to require large quantities of water and, if so, whether it is available. In our area, it is quite likely the answer is going to be no. Then there is also the question of whether there is any possible risk of contamination to the groundwater we rely on. We and the Environment Agency will want very clear assurances on that because this is our raw material and the stuff of life that we are talking about. We do not think it is difficult to do, but we are reassured that we are going to be part of the consultation process going forward.

**Jenny Jones AM:** I wonder if you could outline your leakage reduction plans for London?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The first thing is that we have brought leakage down by a third in the last ten years and we are going to get it down by another 11% in the current five-year period. We have further reductions planned after that. The problem is that as you get leakage down, the unit cost of each further bit goes up and so there is a point at which it becomes uneconomic. On the basis of the consultation process around our draft business plan, we are going beyond the economic level of leakage now.

The big thing that is going to make a difference is bringing in progressive metering of all our customers because between around 30% of our leakage is actually on customers' pipes: the small pipes between the streets and the customers' homes. As soon as you put a meter in, you can find that. Even before we connect the meter up, we will be doing the measurements and we now offer free repairs, but the problem is finding these leaks. They are often quite small, under somebody's front garden. The grass looks a bit green and nobody asks why.

**Jenny Jones AM:** Not my garden, no.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Not your garden, Jenny, but you can see how the problem exists. For instance, in Bexley where we are starting this progressive metering programme, about half of the gain in water will be from customers using less and the other half is from just identifying where these leaks are. Therefore, customer-side leakage we can get down a lot.

The other thing is that where we have full metering we can do what we call a 'water balance' based on water in equals water out plus leakage. If we can do a whole area, we can then work out where the leakage is at its worst and we can target it most effectively. Of course, once you get down to these things, there are all sorts of problems with illegal connections and pipes that had not been capped off properly 50 years ago etc. However, until you have a proper sum to do, you cannot work out where to target the money best. We think we can probably get leakage down further as we start to get the results through from the progressive metering programme.

The key there is that we are going to meter as many individual properties as we sensibly can, but the big problem is blocks of flats. Some older flats have all the kitchens connected at one side and all the bathrooms connected at the other. Unless you fit two meters into the flats, you cannot actually work out what they are using. What we are saying is that we think we can get to between 70% and 75% of properties in London individually metered, but for the rest we are going to meter the block and we will know exactly where the water is being used. This approach of metering blocks of flats, as a block, has worked very well. We found one recently that was leaking 33 litres per minute. We found others where the seals on the toilet cisterns had all perished and nobody had noticed. It is not just a question of metering each individual household. We will do that where we can. Where we cannot, we will meter the building because then you will get the water balance. That is when you can really work out where you need to target the leakage to get the best possible value out of your spend.

**Jenny Jones AM:** This Authority is actually advocating a long-term aim of improving leakage rates to the equivalent of 80 litres per property per day. Is that something you recognise as achievable?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, we do recognise it. It is not achievable in the short term. It is a very reasonable, very long-term aspiration, but it would mean really very considerable reductions in leakage. We have got it down a lot. We are going to get it down a lot more. However, we have to go step-by-step with this, firstly, because there is a limit to how much you can do at any one time - and we all know about the disruption that the leakage work causes - and, secondly, because we want to get the information back from the metering programme so that we can then target the spend as effectively as possible. Until we have that information, we cannot give you an accurate figure of how low we think we could get leakage. There is this problem that the curve for leakage-per-pound goes almost straight up once you get to a certain point. Therefore, it is fine to have an aspirational target, but it is going to take a long time to get there. It will be 11% in the next five years.

**Jenny Jones AM:** Thank you. The recent incident at Farringdon highlights a problem that could happen at any time, presumably, anywhere. Are you actually prioritising such pipework in your overall plan?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The burst at Farringdon was on a 16-inch main. We call anything of that size a 'trunk main'. They are very thick and they are under very high pressure and they last, normally, a very long time. But if they do burst, the consequences can be very considerable.

What we have done is we have risk-assessed all of our trunk mains and we have worked out which ones would have the highest consequence if they burst. If there is a burst in a particular area, are we going to flood a bit

of waste ground or are we going to flood Regent Street? They are the most extreme examples. Based on that, we have targeted our replacement programme for the mains that we think are at most risk.

The other thing that we have is three different ways of monitoring the condition of the pipes. Two of them work on monitoring the pressure. A very small change in pressure on a pipe could mean that you have a small leak developing which could suddenly cause a big bang and you can get in and target your investigations to try to find out where it is. We have others that listen to the pipe because, before a pipe bursts, the acoustic signal from it tends to change. Again, if you have a change in the noise: "Why? What is going on? Let us get in there and look at it".

I do have a presentation on this which in fact the Mayor's Office has seen, but I am very happy to supply it to the Committee. It talks about these three. There is 'Syrinx', 'Hydroguard' and 'Sahara'. They are all slightly different systems and they are all ways in which we monitor what is going on with the trunk mains.

The other thing they do is, if we do have a burst, they can tell us exactly which pipe it is on and where. Under some of London's streets, you have two or three mains going down in parallel. Until you know which one has burst, you do not know which one to switch off. It is not only a question of stopping the flooding, but you have to be very careful about cutting customers and businesses off water at the same time.

There is a lot of complexity to this, but it is about risk-assessing to work out where the consequences are highest and then monitoring and then replacing where necessary. At Farringdon, for instance, we are going to replace 400 metres of main alongside the station. We are still working out exactly what happened and what caused the burst, but we are clear that the consequences of another burst there are such that we should replace it.

**Kit Malthouse AM:** I just wanted to ask quickly about the incentives that you have to tackle leakage. You said that you are now bumping up against it becoming uneconomic. I understand that where you put in the meters, obviously, I as a customer would be able to detect from my bill or you would detect from my --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We will detect it for you, yes.

**Kit Malthouse AM:** You would say, "You are using more than the average. Either you have double the number of people in the house or there is a leak". Beyond that, what incentive do you have?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have a target set by the water regulator (Ofwat) in the business plan and that has incentives and, more importantly, disincentives attached to it. If we outperform, there is a small incentive available to us. If we do not get there, there is a pretty large penalty. I do not know whether Tony wants to come in on this because he helped to design this framework.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** The key question for me in terms of the way in which this plays out is that the customer has to actually understand and appreciate the benefits of using water differently. What we have done in CCWater is to try to introduce a process of improving their knowledge and understanding of what our most effective use of water is domestically. That is bearing some fruit. However, as Richard said, we are very keen to see that Thames Water actually performs at the level now set out in its plan because there are penalties attached for falling short of that.

**Kit Malthouse AM:** I understand that. What I am trying to get at, I guess, is that the target figure is a negotiated one.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Yes, it is.

**Kit Malthouse AM:** It is an arbitrary figure. If you look at any other business, if a percentage of my stock from my warehouse was disappearing, I would have a financial incentive to do something about it. In this situation, what you are saying is, "Actually, our incentive to do this is artificial. It is created by this target that Ofwat set and penalties are attached to it and it, fundamentally, is a negotiated figure".

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, it is a negotiated figure. We put a figure in our draft business plan for consultation. We had feedback from the GLA, from the Environment Agency, from lots of environment groups and from CCWater and they said, "You are not going far enough", and so we amended the plan to go further.

**Kit Malthouse AM:** I understand that, but when you then say that it is now starting to become uneconomic because the curve is flattening off on return --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It becomes uneconomic in the sense that it would be cheaper to develop a new source of water. We do not want to do that --

**Kit Malthouse AM:** No, I understand that, but what therefore I imagine will happen is that in your next round of negotiation with Ofwat you will say, "It is not economic for us to do this leakage anymore and we need to negotiate our target down. Let us put in some other stuff like finding new sources of water". However, presumably all of that extra capital spend on that new source of water versus the leakage attracts the fixed return that you get, does it not?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** No, it does not --

**Kit Malthouse AM:** What I am trying to get at - and sorry if I am slightly elongating it - is that you have more of an incentive to invest on capital infrastructure than you do on leaks.

**Nicky Gavron AM:** Yes.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Not anymore because Ofwat has moved entirely to what it calls 'totex', which is a total expenditure menu. There is now no incentive to prioritise capital schemes at all. Where the cost of leakage comes up against other schemes is in our Water Resources Management Plan, which needs to be approved by the Secretary of State. What we have to show there is that we are meeting the projected needs for water across our catchment for the next 25 years at the lowest overall cost, where cost is environmental, social and economic. That is where the trading-off is done between leakage and other schemes.

However, there are two reasons for replacing water mains. One is because it is the most effective way, initially, of getting leakage down on top of the find-and-fix programme that rolls on every year. Also, it is because, clearly, the pipes are not going to last forever. You have to replace a certain number just to keep up, as well as getting leakage down further, in order to cope with population growth and climate change.

**Kit Malthouse AM:** I understand that, but you said there is an 11% target on leakage that you have put in, which is a negotiated figure. Where did you start and where did Ofwat start to get to 11%?



**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** I cannot remember the exact figure but we started probably somewhere between 9.5% and 10% or somewhere around there. I do not have the numbers, but I could write to you about it. In fact, it was our revised plan that went in with the higher figure and Ofwat approved that on the basis that we had gone beyond what was economically the starting point because we had such strong support from customers and stakeholders for doing it. Therefore, this was not imposed by Ofwat; it sanctioned what we had negotiated with our stakeholders.

**Kit Malthouse AM:** I guess that is where I have a slight issue, really, because fundamentally Ofwat is taking a view on what is economically sustainable for you rather than saying, "This is an acceptable figure. Whether you make a profit or a loss, we want you to hit this". Obviously, you have a monopoly. There is nothing we can do about that. It is not like the franchise is up every few years and there is somebody who could perform better or have a bigger target and all the rest of it. Therefore, to me, it does not feel like a real negotiation.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The bit that you are missing there is the fact that Ofwat actually sets price limits, also.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Also, there is a very, very strong belief amongst customers that leakage must be reduced and the economics are actually put to one side in their eyes. Psychologically, they believe this is a big issue about water use that has to be tackled, and that is a pressure that is being brought to bear on Thames Water.

**Kit Malthouse AM:** I totally agree with that, but look at these large companies like BT. There is a huge customer view that BT should be doing a lot more on broadband, but it does not. I guess my problem is that it is a slightly artificial situation in which an arbitrary figure has been chosen of 11%. I do not know whether actually you could shoot the light out and do 20%, but it would mean that your return to your shareholders was nil. For me as a customer, I would say, "That is a better deal for me as a customer".

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** If you were to set impossible targets for shareholders, they would then price that risk into the capital that they make available and the borrowing to the company. That ultimately would feed through into the cost of capital that Ofwat sets for the industry and that would feed through into higher bills. There is a circular element to this.

**Kit Malthouse AM:** You said there are price limits.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Ofwat sets the price limits for us.

**Kit Malthouse AM:** It could set the price limits and force you into making less money?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It could, but it also has a duty to enable us to finance our functions as a company. Otherwise, you would not have any private sector investment in the companies. That has to be set at a level the companies can deliver for customers and for shareholders. It is a balance and it is a balance that Ofwat ultimately presides over but in which organisations like CCWater have quite a big say.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** We have pressed very hard on this balance between customer and shareholder interests and we always try to press the point that you are actually making and try to give the customer more of a say in that.

**Kit Malthouse AM:** I guess this is the problem we are always going to have with a monopoly, which is like, “Cough up or the baby gets it”.

**Murad Qureshi AM (Deputy Chair):** Yes, on Farringdon: it was interesting, Richard, yesterday when some of us on the Regeneration Committee went down to Smithfield Market and were told that you have not only the Underground and Thameslink going under it but Crossrail as well. When such investment is being put in place, to what extent is flood risk taken on board and the movements of water in places like Farringdon, given that the City of London will tell us quite clearly that there has always been a surface water flood risk there?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is factored in at a very early stage. We have been working with Crossrail for the best part of a decade on planning which services we would need to move and which ones we would need to reinforce in order to allow them to build Crossrail safely and efficiently. On the building side, it is absolutely fine. The same is going on with the Thames Tideway Tunnel. Where the Thames Tideway Tunnel goes in some places, we have to move some services and that work is all taking place. We have made sure we can do it in good time.

With the work that we are doing now with London Underground, we have what we call a ‘seepage protocol’. If we or they spot any kind of signs of ingress into a Tube tunnel - and this follows a very high-profile burst just before the Olympics that the Committee may remember - we now have a protocol for all that to get investigated. There was a lot of work done at Baker Street recently when we were worried water was coming in and could not find it. We worked with London Underground to do that.

As a result of discussions yesterday at Network Rail’s operations headquarters in Derby, we are going to have a very similar ‘seepage protocol’ - it may not be called that, but it will have the same principle - with Network Rail because, clearly, we need it.

**Murad Qureshi AM (Deputy Chair):** That is one of the things you have learned from this incident at Farringdon, which you have done in London and you are going to do --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes. The good work with London Underground has to be matched by equally good work with Network Rail.

**Murad Qureshi AM (Deputy Chair):** OK. I am glad to hear that. It was interesting that the City of London was also suggesting that it may be that the River Fleet is seeping through in the case of Farringdon, but my knowledge of underground rivers is not terribly extensive.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** No, I think you will find that the River Fleet is actually deeper and so it will not be seeping. What does happen is that there is a pumping station at Vine Street, which is operated by London Underground. That takes water from the tracks at Farringdon and pumps it into our Fleet sewer. It was that system that was blocked, as we discovered fairly late in the day when we sent our own engineers in to investigate. As soon as they unblocked the grille, the system started functioning properly and the water disappeared very quickly. That was another learning point. If it is an operational incident, we will have Thames Water people in the Network Rail control room and they will have operational people in our control room.

**Murad Qureshi AM (Deputy Chair):** There is another one that is potentially coming up that officers of the Westminster Council have told me about on Northumberland Avenue. To what extent are you actually going to limit the impact that is going to have on surface road transport?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That one I do not know about, Murad. I am sorry. I will have to write to you on that. We will let you know.

**Murad Qureshi AM (Deputy Chair):** Can I just come back to leakages? There is one point in our briefing that should not be missed. In Manchester, if we were customers there, we would probably get a better deal out of fewer leakages because United Utilities has outperformed its Ofwat leakage targets. Why can we not expect that from you?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have outperformed our Ofwat leakage targets as well.

**Murad Qureshi AM (Deputy Chair):** Not to the same extent.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Eight years in succession, we have outperformed them. If you go back a few years, I do not think you will find that other companies have achieved the same. It is good when any water company outperforms its targets because they are stretching targets and they are set to be. Since a very unfortunate period in the early 2000s, we have hit eight successive leakage targets and outperformed each year. Whether those targets are stretching enough is something that is a matter for discussion and that is why we have targets again for the next five years, but we have been hitting those targets.

The situation with London is that we have some of the oldest pipes in the country: 20% of the water pipes under London are more than 150 years old and 40% are more than 100 years old. We also have those pipes sitting in corrosive clay, which shrinks and expands depending on the weather. Of course, we have high pressures in those pipes because we have to move water around and into high buildings. We also have 24-hour traffic pounding down on some of those mains, many of which are quite shallow because when they were built nobody thought we would be putting huge lorries across them. That is all being dealt with step by step. That is how London's leakage has come down by a third. There is a long way to go.

**Murad Qureshi AM (Deputy Chair):** Tony, a comparison with other cities like Manchester, presumably that is a valid way of looking at this.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** It is a valid way of looking at it in one sense and certainly Thames Water's record in recent years matches those that actually achieved stretching leakage targets elsewhere. CCWater has been pressing this point with Thames Water for a very long time about reducing leakage. We are very conscious of the history of the infrastructure of London and therefore have to take that into account but, yes, we are always saying, "Do more". We are never satisfied with the leakage targets that are set by the company itself.

**Nicky Gavron AM:** Very quickly on metering, but just before that one leakage point, Richard. When I was first in negotiations about leakage, which is going back to 2003/04 [whilst Deputy Mayor of London], it was 750 million we were leaking a day. Your aim - let me just get this right - is to get down to 500-plus million by 2030 and so in 25 years you are going to reduce by 250 million litres a day?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes. We expect to get to 429 million by 2030 and that is 20% down from where we are now. That is a whole-company figure rather than a London figure, but the majority of that leakage is in London.

**Nicky Gavron AM:** I just want us to be aware of how many millions of litres of water we are wasting.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It was not far short of 1,000 million when we first really started getting a grip on this in 2004. In ten years, it has gone down and it is now less than 600 million at the moment. We have made very significant improvements, but it is really expensive. It costs well over £400 a metre to replace water mains in London. Therefore, it has to be a rolling programme and we have to keep going at it.

**Nicky Gavron AM:** On metering: Alex, the Mayor has very ambitious targets for metering, does he not, or had? Did he not want us to meter most households by 2015?

**Alex Nickson (Policy & Programmes Manager, GLA):** By 2025.

**Nicky Gavron AM:** All households?

**Alex Nickson (Policy & Programmes Manager, GLA):** It was all houses and blocks of flats by 2020 and all individual flats by 2025. This was based upon research from 2008/09. We are not going to get there. We still hold the line that Thames Water should be metering all properties as soon as possible. We think its current progressive metering programme is good. We think the idea of talking to customers about how they can save water - in combination with giving them a meter, looking for leaks, retrofitting and giving them more sight of the benefits of water efficiency to both their water and their energy bills - is entirely the right way to go. We are a little frustrated with how slowly the pilots are progressing and our key urgency would be whether we can get this going further and faster.

**Nicky Gavron AM:** Tony Redmond, do you think we could be going faster?

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** There are two things about metering. One is that we are supportive of the concept and principle of metering in terms of the ability of some customers to reduce their bills and in terms of the potential for improved water resource management. On the other hand, we are very concerned about the transition that some customers have to suffer in terms of having to pay a higher bill as a result of moving to a meter. We are looking to see how that can be managed because there is a danger here that very quickly people will move into a situation where they cannot afford to pay their bill and there is no immediate support beyond the social tariff that is hopefully being brought in shortly.

Therefore, we have mixed views, frankly. We have high support for the concept, but we are concerned about its application and how it might affect individuals who will struggle to pay their bills. One in six is struggling to pay their bills now and this could well exacerbate the situation.

**Nicky Gavron AM:** Is there a particular household type that finds it more difficult? I am in a larger household and, since water metering, our bill has gone down.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** It has something to do with the size of the house, but it is mainly to do with the occupation of the house and the behaviour of the individuals within the house. It goes back to the earlier point about water resource use and how we make sure that behaviour is improved to try to make sure that it is effective. Some people will continue with the particular way of behaving and living in their properties and that leads to higher bills than they might have anticipated. A meter is a bit of a check on their usage, which can cause some difficulties.

**Nicky Gavron AM:** Richard, just to confirm, your target for metering all households is when?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The proportion of metered homes in London is currently 31%. We want to get that to 56% by 2020, to 70% by 2025 and to 75% by 2030. However, by that stage, we will also have 100% of connections metered and so we will get the full water balance that I was talking about. Fitting 900,000 meters sounds easy if you say it fast enough, but actually 900,000 engagements with 900,000 customers has to be done carefully.

We are rolling it out borough by borough because then we can target our 'smarter home' visits. We have people working on our behalf who go around and knock on people's doors. This is a programme that is being developed. We are now getting a 70% take-up rate, which for any sort of door-to-door knocking or canvassing is extraordinarily high. The average that those homeowners are saving is 80 litres per property per day. We do not say, "Can we make an appointment?" We do not phone up. We knock on the door and say, "I have all the kit in the van. I can come and do it now, if you want me to", and 70% of people say yes. The average saving is 80 litres per property per day as a result of these 'smarter home' visits. Over a year, that translates to £60 off the water bill and £50 off the energy bill, because of course they are saving hot water. There is a lot of money to be made for customers in this way. The spur of having a meter coming is what has made these visits so effective in Bexley and Greenwich, which are the two boroughs we have targeted so far. That is a really important part of rolling it out. Also, of course, we spot the potential for customer-side leakage and so there is a lot of water being saved by the metering programme. However, if we rush it and get it wrong, we will not get that.

**Nicky Gavron AM:** It is all about capacity, not whether you are rushing or not.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is capacity, but it is also targeting it in a whole area because then we can do advertising, we can work with local papers, we can work with schools --

**Nicky Gavron AM:** I like that. Can I just run on to another part of what I am supposed to ask? It is about how we promote water-saving devices. In your kitbag of metering equipment, are you also carrying efficient showerheads and so on?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, absolutely.

**Nicky Gavron AM:** You are doing it all at once?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That is what people get in the 'smarter home' visit. They get somebody who has a showerhead and who will come in --

**Nicky Gavron AM:** They will get that? Do you mean you are not doing smarter home visits yet?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We are doing them right now and they are succeeding. We are getting 70% of people saying, "Yes, come in and fit that showerhead in my shower now". It is really working very well.

**Nicky Gavron AM:** I see. That really makes a lot of sense.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We also have an app that I would be happy to demonstrate to you that the people take with them. It asks people to say how many times a week they use the shower and how many times the washing machine goes on etc. Alex [Nickson], you have seen the demonstration, I think. It helps to show people how much they can save.

**Nicky Gavron AM:** How long do these visits take? An hour?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Probably about an hour, I would think, yes. I do not know exactly. This is not --

**Nicky Gavron AM:** How many boroughs a year are you doing?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** At the moment, we have just started. The progressive metering programme started in Bexley and is going to go to Greenwich next. Those are the two boroughs where we have been targeting the smarter home visits because we can say, "Your meter is coming. You might want us to come and fit this kit now because when your meter comes you will save money. Here is how much you can save". That is why we are getting such a high take-up rate.

**Nicky Gavron AM:** Yes. Just to get the hang of it, you are going to complete Bexley and Greenwich this year?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have had some initial teething problems in Bexley, as James [Cleverly AM] knows. We had to stop the work there because it was not going well with the contractors. We are now gearing up to restart that programme. Greenwich will be next and there will be a couple more boroughs coming on after that. The aim is not to try to dot it around piecemeal across London but to do it in areas where we can get proper engagement with groups of customers. We want to get people talking about meters and how they can save money.

**Nicky Gavron AM:** Alex, is the pace good enough?

**Alex Nickson (Policy & Programmes Manager, GLA):** I think we could always go further, faster, but it is important that the pilot proves the proof of concept and that Thames Water has a proper approach that it can roll out effectively and efficiently and we do not end up with horror stories appearing in the press. United Utilities had some problems earlier on that have really set back its approach to managing surface water. Therefore, it is right that Thames Water has a good pilot, a good methodology and positive press that builds support as the programme rolls out.

I am very concerned that we have an increasing gap between water supply and demand. We need to be talking about water security with the same urgency as we talk about energy security. Therefore, I will be keeping my foot on Thames Water's pedal on this front. Richard [Aylard] knows I am a professional pain in the posterior on this point, but rushing it is not going to make it happen any better. I will be minutely watching Thames Water's progress on this one and we are constantly comparing what Thames Water is doing with Southern Water and with other water companies to make sure that we think Londoners are getting the best approach here.

**Nicky Gavron AM:** Can you just remind us how many litres a day a household uses?

**Alex Nickson (Policy & Programmes Manager, GLA):** The average in London is about 163 at the moment. It was 167 a couple of years ago. It has dropped to 163. The national average is 155.

**Nicky Gavron AM:** What do you want to get it down to?

**Alex Nickson (Policy & Programmes Manager, GLA):** I want to get it down to at least 125 litres per person per day.

**Nicky Gavron AM:** Is there not some sustainable level of 80 litres a day or something?

**Alex Nickson (Policy & Programmes Manager, GLA):** No, 80 litres per day is a very water-efficient target we set originally in planning, but you would need to have remarkably water-efficient goods and you would need to have a remarkable level of awareness to get to that figure. You also need to have things like greywater recycling and rainwater harvesting to get there. That should be our target. We are working with Thames Water and the Environment Agency at the moment to apply the Thames Estuary 2100 programme's 'flexible pathways' approach to water resources. We are looking at how we can have a sustainable level of water supply meeting a sustainable level of demand, what the best resource options are to get there and what potential water demand has to also balance that off.

**Nicky Gavron AM:** While we are on water demand, just give us a few other cities because we are very high, are we not, at 160 or whatever litres a day?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Certainly in Germany it would be more like 130, but their water costs two-and-a-half times as much and so there is a greater incentive to save water there. In Rome it is a good deal higher than in London. In Paris it is about the same. In Amsterdam it is considerably lower. It does vary.

**Alex Nickson (Policy & Programmes Manager, GLA):** We are mid-table.

**Nicky Gavron AM:** Before I get on to the supply side, just in terms of demand, you were talking about what you were doing in Bexley and Greenwich.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Rolling out from there, yes.

**Nicky Gavron AM:** Presumably, there is going to be some sort of action plan. Could we ask to see your forward programme for boroughs?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes.

**Nicky Gavron AM:** What are you doing in terms of the general climate of awareness about water security and the point that Alex [Nickson] was making? We are aware of saving energy. We do not seem to be aware of saving water. The only time I can remember really it being hammered home in an effective way was when we had a potential drought a couple of years ago and, then, you did a fantastic job of marketing the fact that we had to save water. Where is all this marketing now?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It needs to be targeted, Nicky. In that instance, we had a real and present danger to London and we could justify spending a lot of money on marketing material. It was the right thing to do. If you do that day in and day out, first of all, its effectiveness starts to wane and you do not have it in your locker as an additional thing that you can do when there is a problem.

The other thing is that whenever we do research with customers - and we do a lot of this - they find it very hard to believe that there is a real problem with water resources for London. I have given interviews about water efficiency standing under an umbrella and it is not a good look - because all anybody is ever going to do is laugh. We have to target it at two groups of people; first of all to homeowners, "You can save money like this", particularly if there is a meter coming. The second group is people who are concerned about the environment. We also did a poster campaign talking about where people's water comes from and trying to

explain that it comes from the environment. It is more difficult in London. People absolutely take water for granted and want to take it for granted. Therefore, in London particularly, we do not have the sort of chalk stream-type dimension that you can use in Berkshire and Wiltshire and we have to target it at the potential saving.

The other thing that we do of course is we work with the Mayor to get this into the strategies. We have worked hard with the Government and we are very pleased to see that Ofwat now has a duty to promote resilience, which is new but came in with the Water Act. All these things will help. We are also raising awareness through things like the [Sir John] Armitage Commission on infrastructure, talking about the need for more water resources. We are pushing hard - and, again, the GLA is on the same path - that we think there should be a national policy statement for water, which would help to actually set down what the policy is. We have one on waste water. It is delivering the Thames Tideway Tunnel. We need something comparable on water.

**Nicky Gavron AM:** Tony Redmond, what is your opinion of the lack of marketing?

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** The first thing to say is that water stress is not something that is experienced universally across the country. There are different situations. In London and the southeast, the water resource management plans that have been constructed by the six water companies in this area have been extremely important in trying to identify the medium to long-term consumption.

The metering situation is one that is correct. The phasing of it, from our perspective, is a good one because it gives customers a better opportunity, slowly but surely, to come to terms with the new way of working. Metering in other companies, taking Southern Water as a case in point, which has all but completed its metering programme, does see evidence of reductions in water usage. Therefore, we are supportive of that.

However, we are also conscious of the fact that this area has to pay a great deal of attention to water resource management in a way other parts of the country do not.

**Nicky Gavron AM:** Is there enough marketing and making people aware?

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** On the awareness point, I would come back to what I said earlier. Leakage is a problem. Leakage can actually leave customers believing that there is not an issue that they need to address in terms of their own behaviours.

**Nicky Gavron AM:** Yes, I should think so.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Until such time as that leakage issue comes off the agenda - and it is not top of the agenda - it will be a continuing problem in convincing people in the way you have suggested yourself. People need to see the progress made to actually reduce leakage to enable them to take the matter seriously.

**Nicky Gavron AM:** On infrastructure, can you talk to us about how you are going to approach this? The population is rising and we are trying to get the consumption down, but you have been talking about needing more water supplies. What is Thames Water's approach to those, Richard?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** For the next ten years, we can get the extra water that we think we need to cope with population growth and climate change by managing demand. That is getting leakage down further, it is fitting meters and getting the leakage benefits



from that as well; it is encouraging water efficiency. We are spending twice as much in this five-year period as we did in the previous five-year period on water efficiency and we expect to get more than twice the benefit. That, again, was part of the feedback we had on our business plan.

**Nicky Gavron AM:** Just give us a figure, then. What is the figure for water efficiency?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We spent £15 million on it over the last five years and it is going to double to £31 million and we are going to get 38 million litres a day. We are going to get 100 million from leakage and so that puts it in proportion. The three things - leakage, water efficiency and metering - all go together and metering sits in the middle because metering is giving a benefit of itself because people have a financial incentive to use less. It is also giving information about leakage and it is giving a spur for people to use less on the water efficiency side. The three things go together.

Beyond about 2025, we are going to need a new source of water. We will have gained as much as we sensibly can out of leakage reduction, water efficiency and metering by then. There will be a bit more to get, but we are also going to need something big. There are three main options and we are spending the current five-year planning period examining those three options in great detail.

One is to reuse waste water by taking water that comes out of a sewage works, treating it to a much higher than usual standard, putting it back in the river and re-abstracting it for water treatment. The second one is to bring water from other parts of the country, potentially using the canal network for part of the journey. The third one is to build a big new reservoir southwest of Abingdon, take water out of the Thames in the winter when it otherwise just flows away to the sea, store it and put it back in the Thames in the summer so that it flows down to London and we can abstract it at Kew and Hampton as we do anyway. It would be a river-regulating reservoir.

Those three options all have different costs, different benefits, different concerns and different risks. We are spending this current period, as I said, working with our Water Resources Forum, which again the GLA is represented on with the Environment Agency and CCWater, looking at which of those is going to be the best option for London and the southeast.

**Nicky Gavron AM:** How can we increase, Alex, the water in our aquifers? Apparently, aquifers are 20% of our water.

**Alex Nickson (Policy & Programmes Manager, GLA):** Yes, 20% of our water comes from groundwater supplies. The problem with an aquifer is that if you inject water in it, it is inclined to run away. You can increase the supply into the aquifer only by finding a confined aquifer, somewhere where the water does not run away. Thames Water already has one of those and is investigating a second one. It is part of the plan. The current one you operate one in every seven years. For seven years, it gets topped up and then, when we have a drought, they abstract from it. As I understand it, it is a location-specific opportunity that cannot be used just for the whole of the London aquifer.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is under north London, Enfield and surrounding areas, and the aquifer there is dished that you can actually collect water there. What happens is that every winter when we have filled the Lea Valley reservoirs, if we still have spare water - and we usually will have - we treat it and we inject it underground to top up this aquifer. Every year, it gets a bit of a recharge and hopefully, by the time you get to six, eight and ten years' time when you next have a drought, you have an additional store of water there that can give between 100 million and 200 million litres

a day for London. That plus the desalination plant are our two reserve items to be used only when it is absolutely necessary.

We have also had problems with water resources in southeast London particularly because we are taking water out of the chalk streams, the Darent and the Cray and others. That is an area that is outside the London ring main and so we cannot easily get water there from the north London reservoirs. We are developing aquifer storage and recovery at a place called Horton Kirby. The aim is to try to do the same thing there. However, it is a little bit experimental because until you start putting the water down there, you do not know whether it is going to stay there or run away. You can do your geological investigations and make the best assessments and we think it will work, but that is now going ahead. Potentially, if we could find more places to do it we would, but in most places you put it in and the water quickly becomes five miles wide and one inch deep with nothing you can tap into subsequently.

**Nicky Gavron AM:** Why do people say that forests are very good? Why do they want to plant trees in order to help the water situation?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Planting trees, basically, keeps the water cycle going. I am sorry for getting slightly off-topic. It helps the water cycle. Just take a look at what is happening in São Paulo where deforestation of the Amazon has caused an absolutely devastating drought.

**Nicky Gavron AM:** It is just that there are people now saying that if we want to help London's water problem, we should actually plant many, many more trees on the Green Belt. Part of my question was to ask for sustainable sources of water supply and whether you think that would help.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It will not do any harm, but I doubt we would be able to plant enough trees to make a difference for a city the size of London. That is my initial reaction. I do not know if Alex [Nickson] wants to add to that.

**Jenny Jones AM:** It might help with flooding.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It might help with other things, yes.

**Jenny Jones AM:** You mentioned three options: cleaning water, bringing it in from elsewhere by canal --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** And then storing it.

**Jenny Jones AM:** -- and a new source. I am just wondering. Presumably, you might have to do all three.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It would probably make more sense to do one on a fairly large scale than to do all three. Each of them would be pretty expensive in their own right to do at a sensible scale. There could be a combination, but we would need to work out which one offers the most.

The point about the reuse of water is that to do it safely, the international advice we have taken - and we have looked at this all around the world - is that we would need to use membrane technology and reverse osmosis. That is the same as we use in the desalination plant and it is very high energy. There is quite a high operating cost in running it. There are also concerns from a small minority of people who just do not like the idea of

recycling water in that way. There is also a problem that if you start to get filters blocked and things, the whole works could go down and you would be in terrible trouble.

The disadvantages for water transfer are that you have to be absolutely certain that there is water at the other end of the pipe when you need it. It is no good having it there most years or most of the time. You only want it in an extreme situation. If London is really, really short of water, what are the chances that at the other end of the pipe we have a supplying area that has enough water for us? Then there are the costs of pumping it across the country. We could do some via canal and some via tunnels. It is really expensive and we are only going to use it in a drought, but you would have to keep what is called a 'sweetening flow' going through it all the time to stop the water quality deteriorating and that is quite expensive. The other thing is that if you are taking water out of the bottom of the River Severn, it has accumulated quite a load of silt and agricultural chemicals and all the rest of it by the time it gets there and you are then going to pump it into the upper reaches of the Thames, which has some problems for biodiversity and water quality issues.

For the reservoir, you are taking a large area of farmland out of action and there are obviously concerns from people who live in the villages around it. There is no simple answer here. If there was, we would be doing it. We are looking very, very carefully at all aspects of all three options.

**Jenny Jones AM:** If I could just go back very briefly to the issue of fracking, when you are talking about diminishing supply, potentially, and increasing population, fracking can take huge amounts of water. Is that going into your calculations?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We are not factoring in any fracking at the moment because no fracking has been approved. However, if at any stage it looked as though it was going to be, it would then need to be factored into our water resource planning. We would need to get the best possible estimates of how much water was needed and when and where. The Environment Agency would be taking an interest at the same time. The water resource plan needs to cover everything.

One of the concerns at the moment is whether we have the population growth numbers right. I was being challenged on this the other day. Alex [Nickson], your figures show 3.1 million extra people by 2045 and ours show 2.3 million. We need to go back and revisit them and make sure we have the right numbers in them because this is a moving target. That is why we have an annual update to the plans.

**Stephen Knight AM (Chair):** Richard, could I just ask if you have identified sites for a potential new reservoir if you were to go down that route?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes. There is a site that has been around since the 1990s, really. We have done a very exhaustive look across our area. If you were going to build a reservoir, clearly, you have to avoid centres of population. You have to have the right geology. It needs to be clay. It needs to be close to the river so that you can take water out and put it back in again. It needs to be close to a railway line so that you can bring in the gravel you need to build the embankment. When we did that process, the only large site was this one between the villages of Steventon, Marcham, East Hanney and Drayton in Oxfordshire.

**Len Duvall AM:** In the five-year plan, Richard, can you just explain, alongside the engineering issues you are looking at, the cost of it? Who pays for this and what is the early thinking around that?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Ultimately, the cost of new water resource infrastructure, if it is approved in our plan, will then feed through into customer

bills. We will have to do it efficiently and there will be challenges on us to get the cost down. However, what we are doing over this period is looking at those three options from certainly the economic costs of both building it and running it for the long term. Secondly, there are the environmental costs, the water quality issues, the disruption to communities while we are building things, the use of the roads and rail and so on, plus of course the social cost.

All of those things are being put together because ultimately our water resource plan has to go to the Secretary of State at the end of 2018 and there may well be an inquiry. We had one in 2009. We were challenged in great detail. Therefore, we have to have a really very thorough look at all the consequences of what we are proposing.

We do think that a national policy statement for water would help because not only would it set out how much water was required and where, but it would also subsequently help to fast-track the planning system so that it would not have to go through a [Heathrow] Terminal 5-type of process. That is why we are pushing for a national policy statement on water.

**Len Duvall AM:** In relation to the question that Jenny Jones raised as well, as that debate about fracking nationally goes on, the Government is almost certainly going to have the final say. Coming back in terms of the players, I want to ask a question of the GLA in a minute. You will be working closely with the Environment Agency as well but, on the investment side, Tony, would that come into your remit and Ofwat's remit about charging and those issues around charging?

It does seem to me that you come to a point with infrastructure costs where I am not sure if it is right to load it back on to customers or whether there is a national subsidy put in place around that. I do not think politicians can have it both ways. There comes a point where you are driving down costs, you are using water metering, you are telling people how to use it sensibly and we have things being loaded on to the bills in terms of the dual issue about Ofwat. Ofwat has to look out for the interests of me, the user, but also it has to look out for the needs of the monopoly provider in terms of making a profit. What gives? Where does that in the next --

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Ultimately, as you are suggesting, it is a balance. If you take fracking, for instance, we are obviously concerned at CCWater as to the potential impact not just on the water resource use but on its impact in terms of the way in which that will affect customers with potential charges that might arise from the additional costs that Thames Water might have to incur.

However, the balance is a big issue because many of the points that are being raised about water resource management and the way in which the water industry is managing that actually becomes a national issue rather than a very local or even regional issue, but there is no evidence at all that any of those costs are going to be borne by central Government. They will continue to be borne by the industry. That brings back into play this tension between the customer and the shareholder interest. We, of course, not surprisingly, are always pressing Thames Water to think about that balance so that the customer does not unduly bear additional burdens of the sort you have described.

**Len Duvall AM:** You are the right professionals to do it, but only in Britain would we do it this way in the sense of working out what our needs are for the future.

Can I just go back? There is a very important point that we first touched on in terms of the Water Strategy. Does it not beg the question of whether our Strategy is a bit out of date or is it a rolling Strategy? When do you revisit it?

Secondly, what was the last bit of lobbying the Mayor has done to Thames Water? I think I can answer for the Government because it would have been the Infrastructure Plan when he would have lobbied in a roundabout way about water use, I presume. I did not quite see it in the document, but when has he ever lobbied on behalf of the consumer and used his office to do that? How would I see that as an ordinary Londoner in terms of the Mayor's lobbying role both to the industry or the consumer bodies? You would have drafted it for him if he had done it. He would not have done it without your knowledge. How does that work?

**Alex Nickson (Policy & Programmes Manager, GLA):** There are three questions there. On a review of the Strategy: we are certainly looking at updating the Strategy. We are assuming that all the environmental strategies are currently rolled into one environmental strategy. We are looking at whether we will be updating all of them or updating them individually as chapters. We are certainly keeping that under review. The Strategy was published in 2011. There have been significant changes both to Government legislation and also to regulatory legislation around that. It is certainly feeling like we are getting towards a time where it would be valuable to do that. Whether that is for this Mayor to do in the last year of his administration or something that would be better held back for another Mayor is something we are assessing.

In terms of lobbying: lobbying can take form in many different shapes. I have drafted many letters that have gone to the Mayor's Office and that have gone to Richard [Aylard] on a whole range of subjects. Yes, we have done that. We are members of the All Party Parliamentary Group on Water and so we lobby through that. I also chair something called the London Water Group, which brings together all the water companies in London and we lobby all the water companies on what they are doing. Also, Thames Water sit on something we have constructed called the Water Advisory Group, which is advising on the infrastructure plan, and so we are lobbying through that. There are numerous ways we are henpecking Richard [Aylard] and other water company providers because Thames Water is not the only water company in London. We are pushing them through that.

I want to just come back on one other point. You asked a question about how all this extra infrastructure is going to be paid for and whether it always lands at the doorstep of the customer. You will be familiar with the Infrastructure Plan that was published last year. That identified that we need about £1.3 trillion worth of new investment up to 2050 and that there was a gap of at least £135 billion of investment that we could not make up through current funding arrangements. Part of the job of the Infrastructure Delivery Board - and Thames Water is represented on that - is to identify innovative ways by which we can start to fund this. Some of it we hope we can close the gap through efficiencies, but we have to find a new funding formula because the current funding formula is not going to deliver the scale of infrastructure upgrades and the new infrastructure we need to support that population.

**Kit Malthouse AM:** About that, on your lobbying: given what we have talked about in terms of the structure of the industry, I do not quite understand what the point of lobbying the companies themselves is. If they are rational operators they will operate within precisely the margins that Ofwat decrees, whether that is capital investment, targets and all the rest of it. There is a bit of incentive on the upside and some penalties on the downside and so they will come in within that corridor. Given that, presumably the only conversation that is really worth having is with Ofwat?

**Alex Nickson (Policy & Programmes Manager, GLA):** I disagree. Certainly we have plenty of discussions with Ofwat, and we met with Cathryn Ross, the new Chief Executive of Ofwat, at the end of last year.

**Kit Malthouse AM:** Are they discussions to say the targets are not high enough, the return is too high, the prices are too high? Is it a consumer --

**Alex Nickson (Policy & Programmes Manager, GLA):** Pretty much.

**Kit Malthouse AM:** -- or is it the standard British, rather civilised, "How can we scalp the consumer to the extent they do not really mind but give the shareholders a --" Is it part of that?

**Alex Nickson (Policy & Programmes Manager, GLA):** No, I would suggest to you it was almost like you had read the brief in the points that you rolled off there. It was exactly those issues. How is Ofwat justifying that Thames Water was making enough investment? How can it justify bill inflation or the bills against shareholder return? Why are we not pushing it harder in order to build in resilience so that we have the systems against future droughts? All these sorts of issues were part of the Ofwat meeting. Also, the purpose of our strategies and our policies is for Thames Water to use that to then go to Ofwat and say, "Look, our stakeholders are demanding we go further and faster and this is their independent evidence base that is pushing us to do that". We play the game both ways. We also lobby the Departments for Environment, Food and Rural Affairs and Communities and Local Government around these issues.

**Len Duvall AM:** One very last question. It is to Richard [Aylard]. In terms of your five-year plan, in terms of a third eye and independent assessment and rigour about what you are proposing, what does Thames Water do internally about that? What are the arrangements on a project like this to make sure we are taking the best possible decision? You are the only provider of that. What extra steps do you take to make sure that is the best option for all interests, not just maybe your interests?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** First of all, the outcomes are set in the business plan. It is our plan. Ofwat decides what funding is available and then we have to implement it. That then gets broken down into a whole range of schemes. We have two alliances set up, one of which is an infrastructure alliance with some of the biggest names in contracting companies and they have an incentive in getting costs down. If they do benefit, we benefit and so do customers. We also have a delivery alliance, which is looking at dealing with the day-to-day problems around pipes, leakage, sewers and things. They are incentivised too, so there are plenty of incentives there.

Also, when we go for something like the Water Resource Management Plan, which is a five-year process, we have a number of contractors involved, experts advising on the different bits of the plan to make sure we have something that will be robust if we go to a public inquiry. We also have a continual challenge, quite rightly, from the CCWater. Tony [Redmond] and I meet very regularly. We also have a Customer Challenge Group, which was set up during this price review process for the first time. They challenged us on what was in the plan and the extent to which we had consulted customers properly. That was a really very helpful challenge. The plan, as Alex [Nickson] knows, did change as a result of those challenges. That group will stay in existence and will continue to meet with us and put questions to us and to the Board. Tony [Redmond] comes to dinner with the Board on a regular basis. There are lots of challenges in the system. We are also very transparent and so, if anything does go wrong, people see it pretty quickly.

**Stephen Knight AM (Chair):** Thank you very much. I am going to move us on now because we have to move on to the next area, which is sewage and water quality. James, you are going to lead off?

**James Cleverly AM:** I will avoid the obvious jokes. What is Thames Water doing at the moment to firstly reduce or avoid pollution into the Thames and the other rivers in your patch?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** There are three parts to cleaning up the tidal Thames. The first thing is we are in the process of completing major overhauls to all of the five sewage works that discharge into Thames: that is Mogden, Beckton, Crossness, Long Reach and Riverside. They are all big works and they are all having either higher treatment standards or more capacity or both. That is already providing benefits in the river.

The second thing is we are building at a cost of £635 million the Lee Tunnel, which runs from Abbey Mills to Beckton Sewage Works. It is a four-mile-long tunnel. It means that the Abbey Mills combined sewer overflow (CSO) into the Lee, which is much the biggest on the London system, will no longer happen after the end of this year. It will go into the tunnel instead and it will be pumped out at Beckton for treatment.

That is two major things. The third part of this is the Thames Tideway Tunnel, which will deal with the remaining 18 million tons of sewage in a typical year which goes into the river further up. Abbey Mills is a long way downstream, but we have discharges all the way from Acton through Hammersmith, London downwards, which will only be picked up when we complete the Thames Tideway Tunnel. That now has development consent. We expect to get on to some of the sites to start preparatory work this autumn. Serious construction of the tunnel will start in 2016. That should be complete in around 2023 and will pick up all of the remaining CSOs. Those are the main things that we are doing to clean up the Thames.

I would not want to miss the other thing, which is misconnections. There are a lot of properties in London where either cowboy builders or DIY plumbers have connected up things that should go into the foul sewer into a surface water sewer. You have what we call 'misconnections'. We have kitchens, bathrooms and toilets connected up into a surface water drain and leading into a natural river or stream. We estimate there are about 60,000 properties in London misconnected in this way. We work with the Environment Agency on a rolling programme targeting these. We recently found a 24-bedroom hotel that was entirely misconnected into surface water drains. That is helping to clear up a lot of the smaller rivers and drains across London.

Those two things together, plus the higher treatment standards at the sewage works, are making a big difference to the river already.

**James Cleverly AM:** You might not have these figures at your fingertips - if not, perhaps you could provide them to the Committee afterwards - but roughly how much untreated wastewater is going into the Thames annually at the moment? Once these things are fully rolled out, where will you get to?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** At the moment in a typical year - and bear in mind this figure could obviously go up and down depending on the rainfall - it is 39 million tonnes at the moment. The sewage works improvements, which are just about finished, and the Lee Tunnel will bring that down to 18 million tonnes a year. Once the Thames Tideway Tunnel is finished, in a typical year it will be 2 million tonnes. That will be 2 million tonnes of very dilute sewage because you will have captured all of the most polluting 'first flush' in the tunnel. The Environment Agency are confident the river can cope with that amount. There is enough natural dilution and London will then be having the same sorts of standards of dissolved oxygen in the river as other major cities around the world.

**James Cleverly AM:** The halving of the problem from 36 million tonnes to 18 million tonnes, when do you envisage --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The halving of the problem will be as soon as the Lee Tunnel is finished and it should be operational at the end of this year, probably in December 2015. That will stop the discharges at Abbey Mills. In volume terms, yes, you have it down from 39 million tonnes to 18 million tonnes. That is protecting the downstream end. Actually, because of the way that flows in the river go up and down on the tide, a discharge at Hammersmith will take a month to reach the sea in the winter and three months in the summer because it oscillates up and down on the tide. The discharges upstream therefore cause the most damage. You will get the volume down by half, but the biggest impact will not come until the Thames Tideway Tunnel is complete in 2023.

**James Cleverly AM:** Just before I move on to the next bit of questioning, at the moment the regularity of the system topping over is quite high. In my understanding, it happens quite a lot. How will this reduction come about? Is it going to be a similar number of occurrences but with less severity or is it going to be peak impact on a few numbers of occasions?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** At the moment in a typical year, we get 50 to 60 times when one or more of the CSOs discharge. In a really big storm they could all be discharging. If you have a localised thunderstorm it might be just one. That is 50 to 60 times there is something going into the river. Once the Thames Tideway Tunnel is complete we should only get, again in a typical year, around four discharges a year. They will be quite big because it will be after you have had one big storm followed by another big storm. You will have the tunnel full and you will be pumping it out, but there will be still some that goes into the river.

The important point, which is a point I made earlier, is that you have captured all of what we call the 'first flush'. If you think about it, when you have a fairly dry period you have low flows in the sewers and lots of nasty stuff settles out in the sewers. Then you get a big downpour and the whole lot gets punched into the river in one go. That is when you get the big fish kills. Now what will happen is that all of that will go in the tunnel. The system has had a really good clean through and it is being pumped out. When the next rainstorm comes, everything has been cleaned. If you do spill into the river, it is causing much less damage than the first bit. Does that make sense?

**James Cleverly AM:** Can you talk to us about Mogden and the impacts there?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Mogden is the furthest upstream of the five tideway sewage works and so clearly it is one we are very concerned about. What we have done there is we have actually increased treatment capacity by 50%. What happens in a sewage works is a biological process. You can only push so much sewage through at any one moment. You cannot shut the door: if it is coming in, it has to go somewhere. When the works is at full capacity, any additional flow gets diverted into storm tanks, the aim being that when the flows go down you can pump back from the storm tanks into the works when it has capacity. The problem comes if the works are full, the storm tanks are full and it is still coming in the door. At that point, you spill from the far end of the storm tanks into the river. Fifty percent extra capacity means the storm tanks will be used less and they will get full less. That is already proving, as far as the Environment Agency is concerned, a considerable benefit to the upper river.

**Stephen Knight AM (Chair):** We have had, though, since the work was complete in April 2013, still 47 occasions on which the storm tanks have been emptied directly into the Thames. That seems like quite a lot, given that this was supposed to solve the problem.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** What it was designed to do was to solve the problem in the river. The measurements in the river have been absolutely fine. There have been a number of spills. Do not forget we had the wettest winter in 250 years last winter and we have had very high groundwater levels ever since. That means there is some infiltration into the system. It means you have high incoming flows to Mogden. Therefore, we have had more than we would expect in a typical year. As I was saying before, we have captured the 'first flush' on a much bigger scale than we did before and what is going in the river from the storm tanks does not appear, from the Environment Agency's records, to be causing any problems. We are meeting our standards of treating the additional volume of income sewage.

**Stephen Knight AM (Chair):** Were you anticipating having that many discharges even after the work was completed?



**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** No, but it is very difficult to model exactly what you are going to get in any year. We did work back through the historical records for our modelling. The works were sized to meet the standard the Environment Agency set for incoming flows, which is 1,064 million litres per day, and the works is achieving that. That is the standard against which we are measured. The other thing is they are looking at what is actually happening in the river and what the outcome is in terms of dissolved oxygen, suspended solids and everything else. The results of that, I am led to believe, are absolutely fine. This has not been a typical year by any means.

**James Cleverly AM:** There is a particular complaint you do get in Mogden from the residents of Isleworth - and I think Twickenham as well - about the stink. That does not seem to have come down appreciably if you see the letters we get here or that I certainly get. Should you not have done a bit more on that front for the residents?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** What we set out to do was to make sure that in extending the works we did not create any additional odour. The extension was to be 'odour-neutral'. We took measurements of what the odour was before we started. Measurements have been taken now we have finished and it has not gone up. We have hit that standard. Any odour from the works is already going to be a concern to us.

What we are doing is we are now trying to work out what more we can do. We have extra staff working on the site. We have some new bits of kit going in. We have cleaned out all the digesters and complaint levels have gone down, but clearly even one complaint is one too many. It is down to constant vigilance by the site staff now to just get that down as far as we possibly can.

**James Cleverly AM:** I will just have to report that back to the residents of Isleworth.

If we could just have an update on the projected timelines for the Tunnel, please?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We hope to be able to start work on some of the sites later this year. That would be things like erecting hoardings, putting in power and clearing away anything that needs clearing away so that we can make a full start on the programme in 2016. Towards the end of 2016 is when the first of the boring would start. That programme would be finished in 2023. After that, the tunnel would be commissioned. It is all on track at the moment to hit those timescales.

**James Cleverly AM:** You say it is all on track at the moment. What do you identify as the kinds of things that could knock it off track?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** From a project perspective, we are doing two tendering processes: one for the people who will finance and own the new company that is being set up to run the company; and also one for the contractors. Assuming those processes go well, we will have all that we need to get on and build the tunnel, given that we have now development consent from the Government. It would have to be something quite unforeseen to slow the process now.

**James Cleverly AM:** Very unforeseen, as opposed to slightly unforeseen?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes.

**James Cleverly AM:** Obviously the tunnel has been, and is still, quite contentious. There has been a fair bit of opposition to its construction. Are there technologies on the horizon that could make this potentially obsolete? Obviously, if we are putting this amount of investment and this amount of disruption in the face of significant opposition over such a long timescale, if we get to the end of it and we are presented with what could have been a quicker, cheaper, simpler and less contentious option, it is going to be quite egg on the face for a lot of people, is it not?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** There has been a lot of work done looking at alternatives. There are people who think that you could do the whole thing with an expansion of sustainable drainage. But there is nobody yet who has been down in the Lee Tunnel and seen the immense size of it, knowing that with the Thames Tunnel attached it is going to be 20 miles long and that it will be full in a single storm, who has come back saying, "You could park all this on the surface in sustainable drainage somewhere". We need both. We need the tunnel to deal with the existing problem of a very heavily built-up city with a combined system that cannot economically be separated now. We also need lots and lots of sustainable drainage, which is why we are working with Drain London and working with the Sustainable Drainage Action Plan and why we have things in our business plan to work out what we can do on sustainable drainage. It is going to take decades. Even with the best will in the world, nobody can see how you can do that quickly across London.

The other thing too is that when you have the tunnel in place, you have a linear connection. Wherever you have a very heavy rainfall, you have the whole capacity of the tunnel available to store it. If you are going to go with local solutions like sustainable drainage, you have to have enough in each of the areas that might be hit by a sudden storm to capture all that load.

The other thing is that the tunnel fills up after a storm and then you pump it out at Beckton within 48 hours. If you have a second storm, the tunnel is empty 48 hours later. If you have collected everything that has formed in the first storm in sustainable drainage, that is all still full and so when the second storm arrives you have got nothing to store it in. The tunnel is actually a better solution, but it is not the only answer. The rate that London is growing and the rate of impermeable surfaces that are being created - it is not just the big developments, it is the little bits of infill here, the little bit of tarmac there, the few flagstones - all of that is ultimately adding to the problem of a combined system which has to take both the rainfall and the sewage.

**James Cleverly AM:** [Joseph] Bazalgette [19th century British civil engineer] famously over-specified the system that he put in. I am not sure whether this is quite the case. Did he not lie to the commissioners about --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** I am not aware that he did. What I do know is that when he was building the tunnel, London's population was between 2 million and 2.5 million. He said, "It is not going to get to more than 4 million and so let us build it for 4 million", or words to that effect and so it was built. The other --

**James Cleverly AM:** How much futureproofing are we getting into the Tideway Tunnel?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The Thames Tideway Tunnel is good for at least 120 years. It will be a very resilient piece of infrastructure, assuming that nobody decides to separate out London's existing system. Even in the 1860s [Joseph] Bazalgette looked at whether he could separate the sewers from the rainwater. He decided he could not. He is known as the architect of the London sewer system. But if you look at his own drawings, and on his own memorial it says, "Architect of London's main drainage system". He was setting out with his system to do both and that is what we have inherited. We have to work around that with SuDS.

**Nicky Gavron AM:** With all this sewage there what is the scope for joined-up thinking and anaerobic digestion? It is a fantastic source.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** What comes out of the tunnel will be fairly dilute because bear in mind it has a lot of rainwater in it. It is all treated at Beckton and all of the sewage at Beckton is either incinerated or goes through anaerobic digestion. We are also putting a new front end on the anaerobic digestion called thermal hydrolysis. That means you get more energy and less solid material, which is good because it means you have less to take offsite and more energy generated onsite. Our current plans are to generate a lot more renewable energy than we are at the moment through anaerobic digestion and thermal hydrolysis.

**Nicky Gavron AM:** What are you going to do with the renewable energy?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It will be used to power our own sites and if there is any surplus it gets exported to the grid. We do a lot of pumping which needs energy, but we think we can get up to a third of our energy needs met from our own sources. We are at about 16% now and we think we can double that. Part of the programme over the next five years is to do a lot more with this thermal hydrolysis so that we get not just anaerobic digestion but really good quality.

**Stephen Knight AM (Chair):** Can we move on now to the general issue of sewage and homes?

**Murad Qureshi AM (Deputy Chair):** I cannot think of a worse type of flooding than sewage flooding. We have a bit of that in west London, unfortunately. Richard, how will you reduce the risk of flooding in homes by 10% as Ofwat has suggested with its overall target?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The 10% reduction relates to what we call 'sewer flooding - other causes'. That is principally blocked sewers and collapsed sewers. What we are doing there starts with a lot more CCTV. When we have the CCTV results, we then do an enhanced cleaning programme on a regular basis, plus there is a lot more customer education going on to explain to people what they should and should not put down the sewer. We do not want fat, we do not want wet wipes; the things that actually create blockages. We have done a really detailed analysis and we know which boroughs have the worst records for sewer blockages and we have had some very hard-hitting advertising campaigns running on that.

**Murad Qureshi AM (Deputy Chair):** I do know in Maida Vale you have a bigger investment programme.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** A big project more or less completed there.

**Murad Qureshi AM (Deputy Chair):** We have a similar problem in the borough of Kensington and Chelsea and Hammersmith and Fulham of 1,800 properties. Is the approach going to be different from what you are doing in Maida Vale?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is a bigger and more widespread problem. One of London's lost rivers, known as Counters Creek, starts up in Brent comes down through west London and goes into the river at Chelsea. When that floods, it hits the basements particularly. In 2006 and 2007 there was very bad flooding there. We have records of at least 1,800 properties that flooded but we know there are around 5,000 at risk. That is a multifaceted programme which involves first of all putting what we call 'flips', which are little individual pumping stations for the worst-threatened

houses. It also has the SuDS scheme. It has a lot of local schemes where we are taking the bottlenecks out of the system to make the water flow faster and it has an additional bit of substantial sewer, again, to take bottlenecks out of the system. That is a big project. We have had a lot of help from Kensington and Chelsea and Hammersmith and Fulham over the last six or seven years to develop that. It is in the business plan and is being rolled out. The consultation for phase one closes at the weekend and we plan to get started next year.

**Murad Qureshi AM (Deputy Chair):** Just a small one. The developer there is St George's. Has it incorporated what you are suggesting with the Creek?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** I am not sure which St George's development we are talking about.

**Murad Qureshi AM (Deputy Chair):** It is in Imperial Wharf, is it not, a further phase --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That I do not know. Certainly, as Alex was saying, the new applications coming through are normally pretty good about sustainable drainage and if not they get bounced back by the GLA if not by us.

**Alex Nickson (Policy & Programmes Manager, GLA):** The planning permission for Imperial Wharf dates back several years. I could not tell you off the top of my head what the provision is. I am happy to look into it if that would help. I would expect it to have some provision for sustainable drainage. Whether it is quite up there with the 50% reductions I mentioned earlier, it might not be quite as good as that. That is my gut feeling.

**Murad Qureshi AM (Deputy Chair):** My final comment: it sounds like another underground river of London wanting to seep out, for understandable reasons.

**Stephen Knight AM (Chair):** Thank you. Can we move on now to our final area, which is around pricing, in particular the price impact of the tunnel itself and the investment in that? Len is going to lead off here.

**Len Duvall AM:** Firstly my questions will be to Richard and then I will ask Tony [Redmond] to comment. By how much do you expect water bills to rise as a result of Thames Tunnel? What is the estimation there?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** The bills that are going out now, which are for the forthcoming year, have £7 in them that relate to the work that is being done to get this far on the tunnel. That will go up in stages and by 2020 it is expected to be around £34 at the end of this five year period. Beyond that five-year period there will be some further increase but we do not know exactly how much yet. The reason we do not know is because we have not yet appointed the company that is going to own and build the tunnel. That is being competed on cost of capital and so that will have a bearing on costs. Nor have we signed the construction contracts. Again, the amount we can sign those for, and the amount of leverage we can get to get the price down, will also affect the cost. What I would say is that we have Ofwat and Infrastructure UK, on behalf of the Treasury, looking at all of the numbers and challenging them very hard and so the cost will not be any higher than it absolutely needs to be to get the project done efficiently.

**Len Duvall AM:** The issues of driving down the cost - and you alluded to this earlier on - is about the contract management and the nature and function of the new company that is going to take it over. All those are in hand; you are transparent and CCWater will see that, Ofwat will see that, and others can challenge if they want to?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, by competing for both the financing and the construction we think we are going to get the best price for both.

**Len Duvall AM:** How would you support customers who struggle to pay, though?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** We have a whole range of ways of supporting our customers. One of things that it says on our billing leaflet that is going out now is, "Look, if you have problems paying this bill, please give us a chance to help you. Please just pick up the phone and ring us". We have a whole range of things. We have a social tariff in place now. We have a customer assistance fund. We have a charitable trust. If people really cannot pay there are an awful lot of things we can do to help them. If they will not pay we have no sympathy, but we do actually just need them to pick up the phone and give us a chance to help.

**Len Duvall AM:** The new energy finance research from Bloomberg suggested that your dividend policy restricts you from financing options around the Thames Tunnel. Is that why the new organisational vehicle is important? Do you plan to review this or change this in order to reduce the burden on customers? Have you explored that issue or is this a load of bunkum?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It has been explored very carefully by us, Ofwat, Defra and Infrastructure UK. The conclusion was that the right answer was to take up the option in the Flood and Water Management Act, which was for projects that were well outside the normal expected scale for a water company to be put out to what is called an Infrastructure Provider. A separate company is appointed. This will be regulated by Ofwat. It will have its own shareholders. They will raise the money and they will pay the contractors.

If you look at Thames Water, we are an £11 billion company, roughly, and we have a large number of projects that we deliver. If something goes wrong on one of those projects and it costs more than we expect, you can potentially offset that against doing something elsewhere a bit cheaper. That is what makes the water industry a low-risk investment. If you suddenly graft onto that a single £4 billion project, which is a tunnelling project under London that has a higher risk profile, you change the risk profile for the whole company. It was a decision by the Government to invoke this Infrastructure Provider option and have a separate company, which will be tendered for and which would then work with the contractors to get the best deal.

The final twist to this is that the Government has put in a support package, which would be invoked only in the most extreme circumstances. What that does is it means that the bidders can make a realistic bid because they do not have to price in extremely unlikely but extremely expensive risks. The taxpayer ultimately, in effect, becomes the insurer of absolute last resort, which again helps to keep the prices down.

**Len Duvall AM:** We would say the Tideway Tunnel fits into the category that the Government said and everyone else said. Would a reservoir fit into that category?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Potentially, yes, it could.

**Len Duvall AM:** Why?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Again, because a reservoir would be £1 billion-plus for a company that more typically does projects in the low hundreds of millions.

**Len Duvall AM:** I am a simple soul, but do companies put aside some money for some of these big projects in terms of their business issues and stuff like that? The Tideway Tunnel let us set to one side, but just going back in terms of you designating which bits of the business -- we come and have a special arrangement where the customer picks up the bill. The supply of water, is that not your primary function?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is but we do not do the designating. It is either Ofwat or the Government that designates a project for delivery by an Infrastructure Provider. It is perfectly possible that a reservoir could be done through the conventional system. You did ask, "Was it possible?" The answer is, yes, it is possible. The measures are there.

**Len Duvall AM:** Let us say you are driving down on the focus. In the setting-up of the new infrastructure company that develops it, Thames Water's role is quite crucial because even though it is arm's length from Thames Water it affects the bills. How will you show me, as a customer, that you have made a saving in terms of this process? How will it be presented to me? Will it be separated out in a bill or will I have to go to your annual accounts? Where will that be passed on? How do I know that is a saving or does it get lost in the mishmash of everything else?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It will not be lost. It will be in the fact that there has been competitive tendering both for the financing and for the contracting. We will have the lowest possible price for the company that owns the tunnel and for actually building the tunnel. Then ultimately it is Thames Water that operates it, but then you are talking about 15 years' time.

**Len Duvall AM:** My £7: in 2020, when I look at my bill, is it really going to be £34 or could it be cheaper?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It could be cheaper. We simply do not know at the moment because we do not have those numbers in.

**Len Duvall AM:** That is the maximum it could be?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is not the maximum. It is the best estimate on the information available at the moment.

**Len Duvall AM:** The best estimate, all right.

**Stephen Knight AM (Chair):** It might be £40.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Sorry?

**Stephen Knight AM (Chair):** It might be higher?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It might be higher; it might be lower. It is the best possible estimate that we can give you at the moment, but we will know more by later in the year when these contracts have been signed. What I can tell you though is that at a very early stage in all this the Government published a figure and it thought that the maximum impact on bills would be £70 to £80. We are very confident that that is very much on the high side. Exactly where it ends up depends, as I say, entirely on the tendering processes.

**Len Duvall AM:** Obviously you will have given a lot of thought as to the presentation of this and your core business of everyday business in terms of supply and that you would not want this to do your company any more reputational damage. Will you be taking steps to separate out and to explain what that cost in the bill is?

What is the thinking of the private sector around issues like that when they have to explain specific aspects of bills in terms of their presentation?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** If you look at the billing leaflet that is going out now, it has a very detailed background on how the money is spent. It includes a statement I used earlier - that £7 of the existing bill is on the tunnel and that we expect that to go to £34 by 2020 - and there will be some more after that. Also, over the whole period we will be driving down other aspects of our work by doing it more efficiently. I anticipate that we will do the same thing every year.

**Len Duvall AM:** Tony, do you want to comment?

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Yes, I would like to if I may. Thank you. Transparency is a big issue here and one that we have been pursuing with Thames for some considerable time to make sure that the actual impact, cost and implications of the Thames Tideway Tunnel are understood by all customers. Although we have gone some way to that in terms of the explanation in the leaflet, we would have liked to have seen a headline of exactly what the bill includes for the Thames Tideway Tunnel each year, but that has not been accepted by Ofwat and so we are where we are.

The second thing is that we must recognise that although there is an increase, as Richard [Aylard] has suggested, of £34 over five years, it is not necessarily evenly spread. We wanted in the interests of customers to have that evenly spread rather than any spikes that might occur during the course of the period. That has not been accepted, either, and so we are not very happy about that.

The third thing to say is that it impacts other companies within the greater London area, such as Affinity. They will actually find bill increases in 2015/16.

There are a whole series of issues around making sure that the customers have a fuller understanding and appreciation of exactly what the Thames Tideway Tunnel means both in terms of cost and ultimately in terms of service. We are very keen - and Richard [Aylard] will bear this out, I am sure - to make sure that we, as CCWater, are engaged with the Thames Tideway Tunnel infrastructure provider and that that is not so separate that we cannot have any access to customers' and residents' experiences of the actual construction of the tunnel and the disruption that will inevitably occur from time to time. All of those things are very much in our mind. Of course, ultimately, we want value for money for the customers. That is something else that we are pressing and have been ever since the inception of the scheme.

**Stephen Knight AM (Chair):** Tony, do you want to just comment on the issue that was raised earlier about support for customers who struggle to pay their bills? We had an answer from Richard [Aylard], but as the representative of customers I ought to ask you if you had anything further comment on that issue.

**Sir Tony Redmond (Chair, London and South East Region, CCWater):** Richard [Aylard] has already outlined all the various mechanisms to try to help customers who struggle to pay their bills. We continuously believe that there is more to come. Sometimes the juxtaposition of unwillingness to pay and inability to pay is a challenge. For those who sit on that potential overlap, we need to see more done to address that. It continues to be a problem. I said that in one in six struggles to pay their bills. It is a serious issue for us and we are conscious of it, too.

**Nicky Gavron AM:** With your indulgence --

**Stephen Knight AM (Chair):** Nicky, is it a very quick one?

**Nicky Gavron AM:** Yes, a very quick one. I just want to understand. Is Bloomberg saying the Thames Water shareholders will get dividends from --

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** They are entirely wrong with that. No Thames Water shareholder will get a dividend from the tunnel. The tunnel company is entirely independent and will have its own shareholders. They raise the money, either from equity or debt, and they will get a return at the rate set that they are bidding for. It will not come to us.

**Nicky Gavron AM:** Where will they borrow the money from?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** It is entirely up to them.

**Stephen Knight AM (Chair):** Somebody will make a profit out of building it, but will not be you.

**Nicky Gavron AM:** They will not be borrowing from the same source as Thames Water borrows from or will they? Maybe?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** They might go to the same banks; I do not know.

**Nicky Gavron AM:** You have done that because of the risk profile and therefore the borrowing is going to be more expensive?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Yes, exactly. The risk profile is different to the rest of the company's business and --

**Nicky Gavron AM:** Yes, but there is a guarantor of last resort, which is us, the customers, and so why is the risk profile so high?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Just because it is a single project and so you cannot therefore net off gains and losses against other projects and because you are tunnelling 70 metres deep under London.

**Nicky Gavron AM:** I am just trying to work it all out.

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** That, from an investor perspective, is a perceived different risk to extending Banbury Sewage Works plus building a new water treatment works in Reading, for instance.

**Nicky Gavron AM:** Even when there is a taxpayer underneath it all?

**Richard Aylard CVO (External Affairs and Sustainability Director, Thames Water):** Only in the most extreme circumstances, Nicky. I would not want to overplay that. By the time we get to that point, everybody else and the insurers will be very, very substantially out of pocket before anything gets paid for by taxpayers.

**Stephen Knight AM (Chair):** Presumably the customer as well. Can I thank all of our guests for their valuable contributions?



# Subject: Summary List of Actions

**Report to: Environment Committee**

**Report of: Executive Director of Secretariat**

**Date: 3 March 2015**

**This report will be considered in public.**

## 1. Summary

1.1 This report sets out details of actions arising from previous meetings of the Environment Committee.

## 2. Recommendation

2.1 **That the Committee notes the completed and outstanding actions arising from previous meetings of the Committee.**

### Actions Arising from the Meeting of 4 February 2015

Minute Number	Topic	Status	For action by
5.	<p><b>Thames Water</b></p> <p>During the course of the discussion, Thames Water committed to provide the Committee with the following additional information:</p> <ul style="list-style-type: none"> <li>• The breakdown of expenditure on sustainable drainage across Thames Water's business plan, particularly in London if possible;</li> <li>• A copy of the presentation given to the Mayor's Office on methods used to identify potential leaks in the trunk main network;</li> <li>• The initial position taken by Thames Water in the negotiations with the water regulator on leakage targets; and</li> <li>• A copy of the forward programme setting out the potential expansion of the smarter homes visits beyond the current pilot in Bexley and Greenwich.</li> </ul>	In progress.	External Affairs and Sustainability Director, Thames Water.

#### Actions Arising from the Meeting of 4 December 2014

Minute Number	Topic	Status	For action by
6.	<b>Diesel Emissions</b> Steve Wright MBE committed to provide Members with a breakdown by fuel type for private hire vehicles in London.	In progress.	Licensed Private Hire Car Association
	Elliot Treharne committed to provide the Committee with more detail on Liquid Petroleum Gas-fitted taxi policy.	In progress.	Principal Policy & Programme Manager (Air Quality), GLA

#### Actions Arising from the Meeting of 6 November 2014

Minute Number	Topic	Status	For action by
9.	<b>Diesel Emissions</b> Mike Hawes confirmed he would provide the Committee with the percentage of diesel new car registrations in London since 2000; and the percentage of zero-emission new car registrations by fuel type by month since 2010 in London.	In progress.	Mike Hawes, Chief Executive, Society of Motor Manufacturers and Traders

#### Actions Arising from the Meeting of 9 October 2014

Minute Number	Topic	Status	For action by
4.	<b>Adapting to Severe Weather and Climate Change</b> David Lofthouse confirmed he would provide the Committee with empirical research undertaken by the London Tree Officers Association on the reduction in the tree canopy cover in London.	In progress.	David Lofthouse and John Parker, London Tree Officers Association
	Alex Nickson confirmed he would provide the Committee with the method used to produce the figure of an additional 9,000 hectares of accessible green space in London being required to meet any future population increases.	Completed.  Response is attached at <b>Appendix 1.</b>	N/A

### **3. Legal Implications**

3.1 The Committee has the power to do what is recommended in this report.

### **4. Financial Implications**

4.1 There are no financial implications to the GLA arising from this report.

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#### **List of appendices to this report:**

Appendix 1 – Letter from Alex Nickson, Policy and Programmes Manager, GLA, 16 February 2015

<b>Local Government (Access to Information) Act 1985</b>
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List of Background Papers: None.
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Contact Officer:	David Pealing, Committee Officer
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**Stephen Knight AM**  
Chair, Environment Committee  
London Assembly

**Our ref:**

**Date:** 16 February 2015

Dear Stephen

Thank you for the opportunity to provide information to your scrutiny committee. As requested, please find below the calculation methodology developed by Arup as part of the work we contracted them to undertake to support the development of the draft London Infrastructure Plan 2050. The methodology is based on current open space standards (area per capita) and what would be needed assuming the predicted increase in population – see text below from the Arup report.

Excerpt from [The cost of London's long-term Infrastructure](#) (GLA, July 2014), Chapter 8, pp123-130.

### **Open space requirements**

Current supply of this space is divided according to inner and outer London, as below.

- **Inner London:**<sup>[1]</sup> green space supply stands at 17.81 square metres per capita.
- **Outer London:**<sup>[2]</sup> green space supply stands at 45.68 square metres per capita.

Given a fixed supply of land and increasing population, Arup and the GLA have assumed that London will be required to use existing green open spaces more efficiently, or create more novel green spaces such as green roofs. Utilising the central scenario of population growth<sup>[3]</sup> for London by 2050, we have calculated that the ratio of supply to potential usage of open space by London's population will decrease by over a quarter relative to current availability, based upon current London Plan requirements. This decrease however is a result of the rising population in the city.

- **Inner London:** supply of green space will decline some 26% to 13.14 square metres per capita.
- **Outer London:** supply of green space will decline some 28% to 32.80 square metres per capita.

In all, we have concluded that London will require 90 million square metres (9,000 ha as 1ha = 10,000 square metres) of additional green space up to 2050 in order to maintain the status quo in relation to access to green space<sup>i</sup>.

Please do not hesitate to contact me if you require further information.

Kind regards

Alex Nickson  
Policy and Programmes Manager  
Environment Team



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<sup>[1]</sup> The statutory Inner London boroughs are: Camden, Greenwich, Hackney, Hammersmith and Fulham, Islington, Kensington and Chelsea, Lambeth, Lewisham, Southwark, Tower Hamlets, Wandsworth and Westminster and constitutes approx. 319km<sup>2</sup> = 319000000m<sup>2</sup> = 31,900ha. *Based on the Office of National statistics Census information 2011.*

<sup>[2]</sup> The statutory Outer London boroughs are: Barking and Dagenham, Barnet, Bexley, Brent, Bromley, Croydon, Ealing, Enfield, Haringey, Harrow, Havering, Hillingdon, Hounslow, Kingston upon Thames, Merton, Newham, Redbridge, Richmond upon Thames, Sutton and Waltham Forest and constitutes approx. 1,253km<sup>2</sup> = 1253000000m<sup>2</sup> = 123,300ha. *Based on the Office of National statistics Census information 2011.*

<sup>[3]</sup> Growth of population provided by the GLA

<sup>i</sup> To ensure the status quo, London would require approximately 108 million square metres of green space before 2050. Arup does not conclude that this amount of land is likely to be required. We believe that residential development will continue to support the provision of green space, reducing the need to develop recreation space. We have assumed that, through the provision of new housing, up to 18 million square metres of green space could be provided.

# Subject: The Mayor's Biodiversity Strategy Update

**Report to: Environment Committee**

**Report of: Executive Director of Secretariat**

**Date: 3 March 2015**

**This report will be considered in public**

## 1 Summary

- 1.1 This paper sets out background information for a discussion with officers from the Mayor's environment team and other invited guests about the Draft Update to the Mayor's 2002 Biodiversity Strategy. The discussion may also cover other matters as they relate to the protection of wildlife habitats and biodiversity management in London.

## 2 Recommendation

- 2.1 **That the Committee notes the report as background to putting questions to invited guests on the Mayor's Biodiversity Strategy update, and notes the subsequent discussion.**

## 3 Background

- 3.1 Despite being one of the largest urban areas in Europe, almost two thirds of London is made up of green spaces and more than 1,300 sites are recognised as being of value to wildlife. In light of that, the Environment Committee conducted an investigation into London's biodiversity in 2013.<sup>1</sup>
- 3.2 Following its review, the Committee wrote to the Mayor<sup>2</sup> in November 2013, urging him to take a strategic lead and act as an essential catalyst on issues relating to biodiversity conservation in London, and to update the Mayoral Biodiversity Strategy to reflect changes in policy and thinking since it was published 11 years earlier. The letter also set out a number of actions it wanted the Mayor to consider, including raising awareness on how to protect and encourage wildlife in green spaces and giving support to relevant organisations and volunteers. It also highlighted how, with the increase in decking and paving on private gardens, there was a need to increase public awareness of the value of gardens in maintaining biodiversity in the capital.

<sup>1</sup> [www.london.gov.uk/mayor-assembly/london-assembly/publications/biodiversity-and-green-infrastructure-in-london](http://www.london.gov.uk/mayor-assembly/london-assembly/publications/biodiversity-and-green-infrastructure-in-london)

<sup>2</sup> [www.london.gov.uk/sites/default/files/Biodiversity%20letter.pdf](http://www.london.gov.uk/sites/default/files/Biodiversity%20letter.pdf)

- 3.3 The Mayor responded to that letter in January 2014<sup>3</sup> agreeing with the Committee that it would be appropriate to produce an update or supplement to the Biodiversity Strategy, which would set out what the Strategy has achieved to date and where it needs to focus in the future in order to support the collective endeavour of those organisations working to protect and manage London’s natural environment.
- 3.4 London’s most important wildlife sites are recognised by the Mayor and London borough councils as Sites of Importance for Nature Conservation (SINCs). In total, over 1,400 SINCs have been identified. These cover nearly 20 per cent of London. A London Wildlife Sites Board (LWSB), which meets three times a year, was set up in 2013 to offer help and guidance on the selection of SINCs.
- 3.5 The All London Green Grid (ALGG) is a policy framework to promote the design and delivery of green infrastructure across London. It has been developed to support London Plan policies on green infrastructure and urban greening, and those relating to open spaces, biodiversity, trees and woodland, and river corridors. More recently, the Mayor has established the Green Infrastructure Task Force<sup>4</sup> to bring together a wide range of interests and expertise to identify how to encourage a more strategic and long-term approach to investment in and delivery of green infrastructure.

## 4 Issues for Consideration

- 4.1 This meeting now provides an opportunity for the Committee to discuss a working draft of the Mayor’s Biodiversity Strategy Update and also hear about current issues around biodiversity in London with invited experts. A copy of the working draft document is attached at **Appendix 1**. At this meeting, Members and guests may discuss the contents of the Update, examine implementation progress, and hear about future priorities.
- 4.2 This meeting provides an opportunity to hear from key stakeholders on the status of London’s wildlife and its protected habitats, and discuss the impact of Mayoral guidance and policy.
- 4.3 The Committee’s 2013 review found that there is no clear mechanism for monitoring the consideration of biodiversity in the planning process or for monitoring the effectiveness of projects, mitigation outcomes, species populations or habitat improvements. Stakeholders suggested to the Committee that an update to the Biodiversity Strategy should encourage a strategic approach to monitoring these.<sup>5</sup> Any review of the Strategy should also include a review of what has been achieved since 2002 and evaluate the progress made on the suite of 72 proposals contained in the Strategy.<sup>6</sup> Members may wish to explore progress on this with guests.
- 4.4 The Committee’s 2014 investigation heard that there needs to be a clearer reference to the link between the Strategy and the All London Green Grid SPG and improved monitoring of the progress of implementing the green grid.<sup>7</sup> This meeting could discuss how this can be achieved and examine

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<sup>3</sup> [www.london.gov.uk/sites/default/files/13%2001%2014%20Mayor%20to%20Chair%20re%20Biodiversity\\_0.pdf](http://www.london.gov.uk/sites/default/files/13%2001%2014%20Mayor%20to%20Chair%20re%20Biodiversity_0.pdf)

<sup>4</sup> See Appendix 2 for details

<sup>5</sup> Written submissions from the London Borough of Southwark and Greenspace Information in Greater London (GiGL)

<sup>6</sup> Written submissions from the Environment Agency, Forestry Commission, London Borough of Camden, and London Borough of Southwark

<sup>7</sup> Written submission from the Campaign to Protect Rural England (CPRE) London



the role and influence of the Green Infrastructure Task Force.

- 4.5 The Committee will discuss with guests these and other relevant matters. Invited guests include:
- Pete Massini, Principal Policy & Programme Officer, GLA;
  - Mathew Frith, Director of Policy and Planning, London Wildlife Trust; and
  - John Archer, Vice Chair, London Boroughs Biodiversity Forum.

## 5 Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

## 6 Financial Implications

- 6.1 There are no financial implications to the Greater London Authority arising from this report.

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### List of appendices to this report:

Appendix 1 - Draft Biodiversity Strategy Update

<b>Local Government (Access to Information) Act 1985</b>
List of Background Papers: None
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# MAYOR'S BIODIVERSITY STRATEGY UPDATE

## A review of progress and priorities for action

### **Please note:**

- **This document is a working draft which is subject to ongoing consultation with key partners and stakeholders**
- **The document contains extensive hyperlinks. The document should be read in Word or Pdf format in order to fully appreciate the reports, statements and evidence it contains.**

DRAFT

## **FOREWORD**

## **INTRODUCTION**

Context  
London's habitats and wildlife in 2015

## **DELIVERING THE BIODIVERSITY STRATEGY**

Policies and proposals – delivery status

## **CHANGES IN NATIONAL POLICY FRAMEWORK**

Natural Environment White Paper  
National Planning Policy Framework

## **FUTURE PRIORITIES**

DRAFT

## FOREWORD

To be added

DRAFT

# INTRODUCTION

## **Context**

The Greater London Authority Act 1999 required the Mayor of London to publish a Biodiversity Strategy. The Strategy – *Connecting with London's Nature* – was duly published in July 2002 and has provided the framework through which the capital's natural environment is protected and enhanced. The Biodiversity Strategy contains information about the ecology of Greater London, the habitats present across the city and the wildlife these support. It also sets out the reasons for protecting and enhancing the natural environment over and above the moral case for its conservation. These include the benefits related to health and well-being, climate change adaptation and broader environmental objectives including improved air and water quality.

Importantly it also set out the policies and proposals necessary for the conservation and promotion of biodiversity.

The Biodiversity Strategy contains core policies and proposals relating to: the protection of Sites of Importance for Nature Conservation (SINCs); increasing access to the natural environment; the greening of the urban environment; and, the protection of the Thames and London's other waterways. These core policies have been transposed into relevant [London Plan](#) policies. These policies (set out in Appendix 1) ensure that the biodiversity and natural environment are properly considered in the context of London's continued growth and development.

The Biodiversity Strategy also contains policies and proposals relating to supporting partnerships, managing data, and raising public awareness and appreciation of biodiversity and the natural environment. which have resulted in the emergence of the [All London Green Grid](#) (London's green infrastructure strategy), the establishment of [Green Space Information for Greater London](#) (London's environmental records centre) and a number of funded programmes including those delivered directly by the Mayor including his [Street Trees initiative](#), and funding programmes such as [Help a London Park](#), [Big Green Fund](#) and [Pocket Parks](#) for improvements to parks and green spaces. Furthermore, by providing a formal framework for the conservation and management of London's natural environment the Biodiversity Strategy justifies continued investment in biodiversity and natural environment initiatives across London by a wide range of partners including local authorities, non-governmental organisations, private land-owners and businesses.

The core policy objectives have continued to be reflected in the subsequent iterations of the London Plan and in statutory strategies which have been published since the publication of the Biodiversity Strategy - i.e. the Mayor's Climate Change Adaptation Strategy and the Mayor's Health Inequalities Strategy. Furthermore, despite a shift in Government policy towards localism and devolved decision-making, the GLA continues to provide some of the strategic support, advice and co-ordination required to ensure the core objectives of the strategy are being met in a consistent and coherent way across London.

Nevertheless, the national policy framework relating to the natural environment has evolved since the publication of the Biodiversity Strategy, particularly as a result of the publication of *The Natural Choice: securing the value of nature*, the Government's Natural Environment White Paper published in 2011. This shifted the emphasis of natural environment policy acknowledging that a healthy natural environment is the foundation of sustained economic growth, prosperous communities and personal wellbeing. It set out how the value of nature can be mainstreamed across society by strengthening the connections between people and the natural environment; developing new approaches to articulating the economic value of the natural environment; and facilitating broader partnerships and local action. This is a policy framework which was already reasonably well-reflected in the Biodiversity Strategy because of the need to address natural environment issues in an urban context where the connections to people and economy were already well-rehearsed.

Although the Biodiversity Strategy has not been subject to a formal review since its publication in 2002, it has largely remained fit for purpose. This assessment was endorsed by key stakeholders at a London Assembly Environment Committee in September 2013. However, in order to demonstrate that it is broadly in conformity with current national policy the Mayor has accepted would be appropriate to produce an update or which would set out: what the strategy has achieved to date, and where the leadership and support of the Greater London Authority needs to focus in the future in order to support the collective endeavour of those organisations working to protect and manage London's natural environment.

Consequently, this update to the Biodiversity Strategy sets out:

- A summary of the current status of London's habitats and wildlife;
- the progress which has been made on implementing the policies and proposals of the Mayor's Biodiversity Strategy;
- how the policies and proposals relate to current Government policy, and;
- the priorities for action going forward to optimise the collective efforts of the Mayor, the London Boroughs, statutory agencies, environmental organisations and Londoners to protect, manage and enhance London's natural environment.

## **Current status of London’s biodiversity resource**

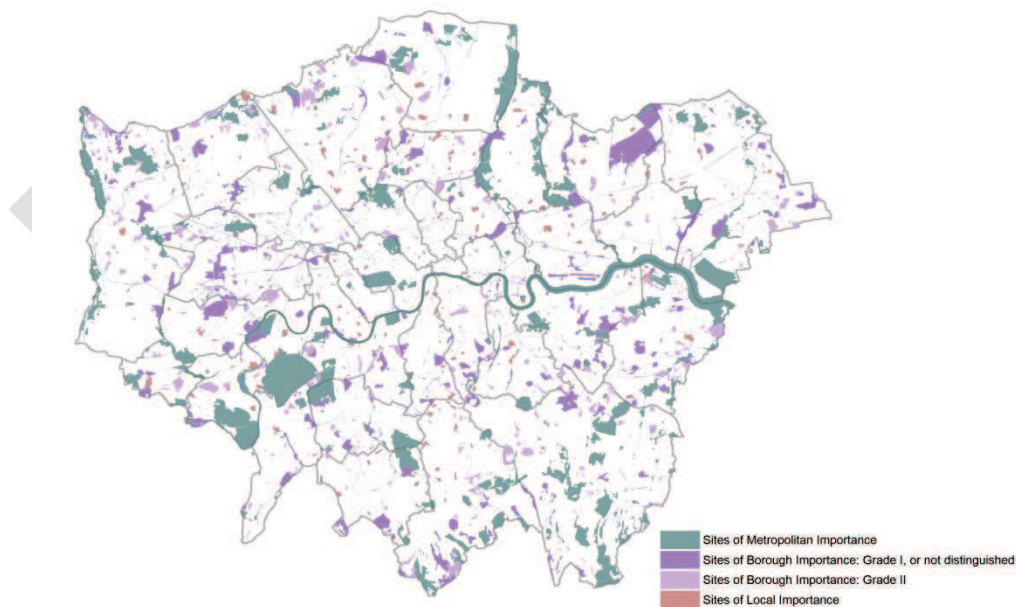
Set out below is a summary of the information currently available about London’s habitats, wildlife and related issues such as access to nature. This provides a snapshot only and is based on the best available published data.

### Sites of Importance for Nature Conservation

Important wildlife sites in Greater London are identified as Sites of Importance for Nature Conservation (SINCs). SINCs are a land-use planning policy ‘designation’ conferred through Policy 7.19 of the London Plan, consequently SINCs receive a significant degree of protection through the planning process. Table 1 shows that over 19.24% of Greater London’s land area is identified as a SINC, variously graded as Metropolitan, Borough and Local depending upon the relative importance and value of the SINC.

<b>Grade</b>	<b>Area (ha)</b>	<b>Percentage of Greater London</b>
Metropolitan	16249	10.19%
Borough	12652	7.93%
Local	1778	1.12%
<b>Total:</b>	<b>30679</b>	<b>19.24%</b>

Figure calculated from GiGL SINC dataset (December 2013)



Produced by Greenspace Information for Greater London CIC on behalf of the Greater London Authority  
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Although SINC coverage has increased since 2002, there have also been losses across London at specific sites, and the figures do not indicate quality. SINCs are semi-natural so require constant management to maintain their wildlife value. Nevertheless the percentage of SINCs reported to



be under positive conservation management has increased from 42% in 2009, to 50% in 2010 and 59% in 2011.

N.B. London’s SINC network includes Sites of Special Scientific Interest (SSSI) – those sites which have a statutory nature conservation designation. The condition of these sites is monitored at a national level. The area of land within SSSIs in London considered to be in favourable or recovering condition has increased from 73% in 2000 to 93% in 2012.

London’s semi-natural habitats:

London’s SINC, and the extent to which they are under appropriate management, provides the core framework necessary to conserve London’s biodiversity. However, they do not tell the whole story. If biodiversity is to be effectively conserved and resilient to pressures such as climate change, the extent of wildlife habitat needs to be expanded and the connectivity between it increased. Restoring and enhancing London’s habitats is important for conserving the capital’s wildlife and also contributes to improving the quality of life for Londoners.

Since 2000 almost 39,000 hectares have been reported as having been enhanced in London and over 18,000 hectares have been restored. Examples include: creation of over 600ha of new woodland in Thames Chase on London’s eastern fringe; the creation of reed beds in the central London Royal Parks; the expansion of 3.5ha of heathland at Mitcham and West Wickham Commons; and the creation of 45ha of various biodiversity action plan habitats in the Queen Elizabeth Olympic Park.

It is not feasible to undertake a direct, like-for-like comparison between the land-cover figures published in the Biodiversity Strategy and current land-cover figures because current data would need to be derived from multiple (not fully compatible) datasets. Nevertheless, Table 2 below compares data on land cover and habitats where there is comparable data.

<b>Habitat or land-use</b>	<b>Biodiversity Strategy (2002)</b>	<b>GiGL data</b>
Green space	c. 65% of London’s land area	57% of London’s land area <sup>1</sup>
Gardens	c.22% of London’s land area	24% (total) - 14% vegetated <sup>2</sup>
SINC	29855 ha	30679 ha (2013 data)
Woodland	7000 ha	7569 ha (2009-10 data)
Chalk Grassland	300 ha	301ha (2009-10 data)
Reedbed	125 ha	142 ha (2009-10 data)
Acid Grassland	1300 ha	1491ha (2009-10 data)
Heathland	80 ha	55 ha (2009-10 data)

Figures from Biodiversity Strategy and Greenspace Information for Greater London

These figures suggest that despite the reduction of the total amount of green space in London this not resulted in a significant adverse impact on the amount of semi-natural wildlife habitats. Indeed there has been an increase in the area of land identified as SINC. [N.B. There appears to be a 25ha reduction in the area of heathland; but this is likely to be an anomaly in the data

<sup>1</sup> Greenspace Information for Greater London datasets, 2013

<sup>2</sup> London: Garden City? LWT/GiGL/GLA, 2011

as there is no suggestion that large areas of heathland have been lost in London – indeed there has been heathland restoration projects undertaken in recent years. The anomaly is likely to be a consequence of errors in habitat description between acid grassland, which the data suggests has increased by almost 200ha, and heathland.

The biggest reduction in London's wildlife habitats is as a consequence of loss of vegetated garden space and the loss of brownfield or wasteland sites. Both habitats are particularly important in an urban context because:

- a) gardens comprise a significant proportion of London's green space resource and are places where people can interact with nature most often
- b) brownfield or wasteland habitats can provide conditions that support a wide range of rare or unusual wildlife, particularly invertebrates.

#### London's gardens:

Private gardens provide many people with daily contact with nature 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 such as hedgehogs, amphibians and pollinating insects.

To inform policy formulation for the London Plan the GLA commissioned London Wildlife Trust and Greenspace Information for Greater London to undertake a study into changes to London's domestic gardens. The study, *London: Garden City?*, 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 changes in garden cover are primarily due to many small changes to individual gardens as part of their management and use by homeowners, rather than large scale changes or housing development on garden land (although this can result in significant loss of garden land at a local level).

#### London's bird populations:

The British Trust for Ornithology has undertaken work on behalf of the GLA to calculate population trends for bird species monitored in sufficient numbers in the Greater London area, and to compare, statistically, London trends with those for the same species in the surrounding areas.

Trends were calculated for 33 species for the period 1994-2011. Over that period 21 of the 33 species increased significantly in Greater London (Blackcap, Blue Tit, Canada Goose, Carrion Crow, Chaffinch, Chiffchaff, Collared Dove, Cormorant, Goldfinch, Great Spotted Woodpecker, Great Tit, Green Woodpecker, Greenfinch, Magpie, Moorhen, Pied Wagtail, Ring-necked Parakeet, Robin, Whitethroat, Woodpigeon and Wren). Five species declined significantly in the

Greater London region during this same period (Blackbird, Grey Heron, House Sparrow, Mistle Thrush, Song Thrush, Starling and Swift).

Despite the worrying declines in species such as House Sparrow, Starling and Swift which are particularly apparent in London because these species were previously common, the population trends largely mirror national trends. This suggests that there are no particular nature conservation or land management issues which need to be addressed specifically in London, especially as the actual causes for declines are undetermined. However, loss of nest sites in buildings (resulting from the trend to seal buildings for energy efficiency reasons) and the loss of vegetated areas in gardens (see below) may well be a reason for the decline in species such as House Sparrow, Starling, Blackbird and Swift.

Where tailored conservation efforts have been undertaken for particular species which have an urban or London affiliation there have been some notable successes. The creation of biodiverse green roofs, for example, in locations where Black Redstarts are known to breed seems to have maintained the London breeding population (despite redevelopment of many former wasteland sites) and the provision of nest-boxes and protection of nest-sites has resulted in a spectacular increase in the number of breeding pairs of Peregrine Falcons which are now present in most parts of London.

#### Areas of Deficiency in access to nature:

Areas of Deficiency in Access to Nature are those areas in London where people have to walk more than 1 km to reach a SINIC of at least borough importance.

Since 2006, the area of London defined as being deficient in access to nature has fallen from 22% to 16%. Almost 25,000ha were classified as being deficient in 2010, which is over 9,000 ha less than in 2006. Much of this decrease is likely to have been achieved either by creating better access to sites where there has previously been none or creating new access points to sites already accessible to the public. However, the creation or restoration of habitats that has resulted in the increase in the area of SINICs will also have made an important contribution as some Sites of Local Importance will have been upgraded to Sites of Borough Importance.

# DELIVERING THE BIODIVERSITY STRATEGY

## Policies and proposals - delivery status

Progress on the delivery of the Biodiversity Strategy is set out below. The Biodiversity Strategy comprises 12 generic policies and a series of specific proposals. It is progress in delivery of the specific proposals which are the best indicator of how well the Mayor's Biodiversity Strategy has been implemented to date. In order to describe what progress has been made the proposals have been grouped under thematic headings and each proposal is assigned a delivery status with a short commentary to justify the assessment.

### *Proposal groupings*

- Protection and enhancement through the planning system
- Land management
- Greening the built environment
- Access to nature and public engagement
- Survey and monitoring
- Supporting and extending partnership working
- Research and policy development
- Monitoring progress
- Miscellaneous

Proposals	Action to date	Status + future action
<b>Protection and enhancement through the planning system</b>		
Proposal 1: The Mayor will identify Sites of Metropolitan Importance for Nature Conservation (SMIs). Boroughs should give strong protection to these sites in their Unitary Development Plans. The Metropolitan Sites include all sites of national or international importance for biodiversity.	Relevant policy London Plan Policy 7.19 <i>Biodiversity and access to nature</i> is included in London Plan and all London Boroughs have transposed this policy into their Local Development Frameworks (LDF). A pan-London network of SMIs has been identified. An advisory service is provided by <a href="#">London Wildlife Sites Board</a> (LWSB), chaired by the GLA.	<b>Delivered, plus ongoing action.</b> Any additional sites should be identified by London Boroughs and their partners and ratified by the LWSB.
Proposal 2: Boroughs should use the procedures adopted by the Mayor to identify and protect Sites of Borough and	Relevant policy London Plan Policy 7.19 <i>Biodiversity and access to nature</i> is included in London Plan and all	<b>Delivered, plus ongoing activity.</b> Boroughs are identifying and confirming

<p>Local Importance for Nature Conservation and other local designations. The Mayor will assist and advise them in this.</p> <p>Proposal 3: The Mayor will and boroughs should resist development which would have a significant adverse impact on the population or conservation status of protected or priority species.</p> <p>Proposal 4: Where, exceptionally, development is permitted which has an adverse impact on a Site of Importance for Nature Conservation or other local designation or on the population or conservation status of protected or priority species, the Mayor will and boroughs should aim to secure compensatory measures to mitigate such adverse effects.</p> <p>Proposal 5: The Mayor will and boroughs should take account of the protection of wildlife habitats and biodiversity in the consideration of all planning applications.</p> <p>Proposal 7: The Mayor expects that biodiversity and wildlife habitat will be taken into account in proposals for the redevelopment of garden land, and will develop guidelines for the evaluation of such proposals.</p> <p>Proposal 10: In consultation with other expert groups, the Mayor will produce</p>	<p>London Boroughs have transposed this policy into their LDFs. An advisory service is provided by London Wildlife Sites Board (LWSB), chaired by the Greater London Authority.</p> <p>London Plan Policy 7.19 <i>Biodiversity and access to nature</i>, and its translation into LDFs, provide a robust policy framework. Also addressed by relevant legislation, including the Wildlife &amp; Countryside Act, 1981 (as amended).</p> <p>As above, plus other London Plan policies including Policy 5.11 <i>Green roofs and development site environs</i>; Policy 5.13 <i>Sustainable drainage</i>; Policy 7.21 <i>Trees and woodlands</i>; and Policy 7.28 <i>Restoration of the Blue Ribbon Network</i></p> <p>London Plan Policy 7.19 <i>Biodiversity and access to nature</i> and its translation into LDFs at Borough level.</p> <p>London Assembly report <a href="#">Crazy Paving published in 2005</a>. <a href="#">London Garden City?</a> A London Plan research report published in 2010. Consequently, London Plan Policy 3.5 <i>Quality and design of housing developments</i> was included in the subsequent London Plan. The policy recognises value of gardens and allows London boroughs to resist development of gardens where this can be locally justified.</p> <p><a href="#">Development Plan Policies for Biodiversity Best Practice Guide</a></p>	<p>SINCs through the LDF process with advice and support from the LWSB.</p> <p><b>Ongoing delivery.</b> Policy framework in place. Efficacy of policy framework is largely dependent on local planning decisions.</p> <p><b>Ongoing delivery.</b> Policy framework in place. Efficacy of policy framework is largely dependent on local planning decisions. Mechanisms such as biodiversity off-setting to be investigated.</p> <p><b>Ongoing delivery.</b> Policy framework in place. Efficacy of policy framework is largely dependent on local planning decisions.</p> <p><b>Delivered in part.</b> Policy framework in place. Efficacy of policy framework is largely dependent on local planning decisions.</p> <p><b>Delivered.</b> No further action required until full review of</p>
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<p>model policies for biodiversity conservation to assist London borough councils with this aspect of their Unitary Development Plans.</p> <p>Proposal 11: The Mayor will take biodiversity issues into account in the consideration of planning referrals and comment on biodiversity issues wherever relevant.</p> <p>Proposal 12: The Mayor will press the Government to bring Sites of Metropolitan Importance for Nature Conservation into the criteria for Mayoral planning referrals.</p> <p>Proposal 13: The Mayor will provide expert advice on biodiversity to London borough councils on planning issues, other than statutory planning referrals, which could have strategically important consequences for biodiversity.</p>	<p>published in November 2005. Although some changes to planning policy since publication the tenets are still sound.</p> <p>Assessments are undertaken by the GLAs Planning Decisions Unit (PDU), supported by 'Natural Environment' and 'Urban Greening' planning toolkits developed by the GLA Environment Team , plus specific advice on more complex or contentious cases.</p> <p>Lobbying was undertaken during the Livingstone administration but did not result in change to Mayoral remit. This proposal is no longer relevant following changes to national policy agenda established by <a href="#">Localism Act</a> and <a href="#">National Planning Policy Framework</a>.</p> <p>GLA officers have provides expert advice to boroughs as and when necessary albeit the amount of staff resource available to provide such advice has been reduced in recent years. GLA officers Chair the London Wildlife Sites Board. Borough officers have established their own network – the London Boroughs Biodiversity Forum (LBBF) - to share advice and expertise. This meets regularly.</p>	<p>Strategy.</p> <p><b>Ongoing delivery.</b> Internal GLA procedures regularly reviewed to ensure relevant issues are being addressed.</p> <p><b>Action taken; but proposal no longer relevant.</b> No further action required.</p> <p><b>Ongoing delivery.</b> Further work required to ensure LWSB and LBBF can provide more support for Boroughs.</p>
<p><b>Land Management</b></p>		
<p>Proposal 19: The Mayor will and boroughs should protect and enhance the biodiversity of the Blue Ribbon Network.</p> <p>Proposal 20: The Mayor will work with others and particularly the Environment Agency to establish a restoration strategy</p>	<p>London Plan policy 7.28 <i>Restoration of the Blue Ribbon Network</i> and its translation into LDFs at Borough level provides policy framework that promotes river restoration and enhancement.</p> <p>The <a href="#">London Rivers Action Plan</a> published in 2009. Between 2000 and 2011, 40 km of river habitat in London</p>	<p><b>Policy framework delivered.</b> No further policy development required until next Strategy review.</p> <p><b>Delivered.</b> Further work required to ensure existing restoration strategy is</p>

<p>for the tributary rivers of the Network. Among other aims this will aim to identify options for reinstating natural features.</p> <p>Proposal 21: The Mayor will encourage land managers, including London borough councils and other public bodies, schools, faith groups and commercial organisations, to take biodiversity into account in the management of their land. This should include managing important habitats to protect and enhance their nature conservation value, providing safe access for all, involving the local community and creating new wildlife habitats where appropriate.</p> <p>Proposal 25: The Mayor will produce a good practice guide for London borough councils to the production of open space strategies, which will include proposals for enhancing their open spaces for biodiversity.</p> <p>Proposal 26: A framework for London's trees and woodlands will be prepared by the Mayor in partnership with other relevant bodies, including Trees for London, the London borough councils, the London Tree Officers Association, the Community Forests, Green Gateway and the Forestry Commission.</p> <p>Proposal 28: The Mayor will encourage the sympathetic management of</p>	<p>had been improved, including 18 km that has been restored. This is ongoing and is being galvanised by the <a href="#">Thames River Basin Management Plan</a> - a requirement of the Water Framework Directive - and the preparation of Surface Water Management Plans by Boroughs as a consequence of the Flood &amp; Water Management Act 2010</p> <p><a href="#">People, Parks and Nature</a> was published in 2008, providing guidance on how to enhance green spaces for biodiversity. Recent initiatives such as <a href="#">Help a London Park</a>, <a href="#">Pocket Parks</a> and <a href="#">Big Green Fund</a> have identified biodiversity conservation and enhancement as a key objective. Through support for <a href="#">Green Space Information for Greater London</a> most land managers have the ability to access the information they need to take account of biodiversity in the way land is managed.</p> <p><a href="#">Open Space Strategies – Best Practice Guide</a> was published in 2008. A revision of this guidance (to include consideration of green infrastructure) will be produced.</p> <p>The <a href="#">London Tree and Woodland Framework</a> was published in 2005, jointly with Forestry Commission. This is a non-statutory document. <a href="#">Preparing Borough Tree and Woodland Strategies</a> Supplementary Planning Guidance was published in 2013 to assist Boroughs in taking full account of the urban forest and the benefits it provides.</p> <p>The former <a href="#">London Biodiversity Partnership</a> prepared a <a href="#">Cemeteries and</a></p>	<p>incorporated into the new frameworks being developed in response to the requirements of the Water Framework Directive.</p> <p><b>Delivered.</b> Ongoing action by provision of advice through <a href="#">All London Green Grid seminars</a> and influence exerted via All London Green Grid advocacy and funding programmes.</p> <p><b>Delivered.</b> Updated guidance on Green Infrastructure Strategies is planned.</p> <p><b>Delivered.</b> Ongoing policy development, including production of a London <a href="#">i-Tree Eco</a> report.</p> <p><b>Delivered.</b> No further action required.</p>
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<p>cemeteries and churchyards for biodiversity and the quiet enjoyment of nature.</p> <p>Proposal 29: The Mayor will promote the important role of private gardens for wildlife and, together with other members of the London Biodiversity Partnership, will provide information to encourage London's gardeners to make their gardens wildlife-friendly.</p> <p>Proposal 35: The Mayor will work with Transport for London and will encourage the Highways Agency, Railtrack, the borough councils and other transport bodies to ensure that the potential for wildlife habitat on the verges of roads, footpaths, cycleways and railways is realised wherever possible.</p> <p>Proposal 23: The Mayor will provide expert advice and training to London borough councils, and others as appropriate, on the management of strategically important wildlife sites and important species and the creation and enhancement of wildlife habitat. He will work with partners to disseminate information on best practice in managing wildlife habitats in urban areas.</p> <p>Proposal 27: The Mayor will work with the London Parks and Green Spaces Forum, the London Biodiversity Partnership, London borough councils, the Royal Parks Agency and others to facilitate information exchange on best practice in enhancing the biodiversity value and promoting sustainable management in parks and green spaces in London.</p> <p>Proposal 22: The Mayor expects boroughs, in consultation with English</p>	<p><a href="#">Churchyards Habitat Action Plan</a>. This is being progressed by the <a href="#">Diocese of London's Biodiversity Action Plan</a>.</p> <p>The report <a href="#">London: garden city?</a> was published in 2011 to provide an evidence base for London Plan policy on gardens. Information and advice on this issue is provided by a number of partners e.g. London Wildlife Trust's <a href="#">Gardening for a Living London</a>.</p> <p>London Underground have produced <a href="#">LU Biodiversity Action Plan</a>. Transport for London's Surface Transport division have a comprehensive Tree Strategy and Landscape Management Plan.</p> <p>A series of workshops and seminars have been delivered with the former London Biodiversity Partnership and <a href="#">Greening London Briefings</a> continue under the auspices of the All London Green Grid partnership</p> <p>The <a href="#">London Parks and Green Spaces Forum</a>, London Boroughs Biodiversity Forum, and the <a href="#">London Invasive Species Initiative</a> continue to provide mechanisms to share and exchange best practice.</p> <p>141 <a href="#">Local Nature Reserves</a> have been declared across London. Declaration is</p>	<p><b>Delivered.</b> Ongoing action primarily by nature conservation NGOs, including a planned pollinator project supported by the GLA.</p> <p><b>Delivered.</b> Ongoing action – new arrangements in place to ensure better co-ordination between GLA Environment Team and TfL. NB Highways Agency and Network Rail governed by national policy and protocols.</p> <p><b>Ongoing action</b> – working with partners and stakeholders as required. Better co-ordination with LBBF required.</p> <p><b>Ongoing delivery.</b> GLA officers continue to work with the relevant bodies.</p> <p><b>Ongoing action</b> - by Boroughs as required.</p>
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<p>Nature, to declare suitable sites as Local Nature Reserves, and to manage these sites to benefit biodiversity and people’s access to nature.</p>	<p>a Borough responsibility in consultation with Natural England (formerly English Nature).</p>	
<p><b>Greening the Built Environment</b></p>		
<p>Proposal 33: The Mayor will liaise with others to research and disseminate good practice for designing or adapting buildings to enhance and maintain biodiversity. He will follow this aim when considering development proposals referred to him.</p> <p>Proposal 34: The Mayor will work with the London Development Agency, the London borough councils, the business sector and others to encourage the inclusion of greening initiatives in new developments, and proposes that these should be addressed from the outset in developing such schemes.</p> <p>Proposal 36: The Mayor will encourage research into measuring the success of greening initiatives.</p>	<p>Promoted through London Plan policy 5.10 <i>Urban Greening</i>. Information on Urban Greening, including the benefits for biodiversity, are included in the <a href="#">Sustainable Design and Construction SPG</a>. The GLA has supported and funded the work of <a href="#">Trees and Design Action Group</a>.</p> <p>A number of best practice and guidance documents have been produced including: <a href="#">Design for Biodiversity</a> published in 2004; <a href="#">Living Roofs and Walls</a> published in 2008; <a href="#">The Canopy</a> published in 2011; and <a href="#">Delivering Vertical Greening</a> published in 2012. The GLA is working with businesses in central London to promote green roofs and walls through the <a href="#">Greening the BIDs</a> initiative.</p> <p>The GLA is supporting green roof research at <a href="#">Barking Riverside</a> and Transport for London <a href="#">Ruislip London Underground depot</a>. Through the <a href="#">TURAS</a> initiative, research into green roofs and other green infrastructure is informing the design of the development at Barking Riverside</p>	<p><b>Delivered</b>, plus ongoing activity including, for example, support for updates to <a href="#">Green Roof Code</a> and promotion of <a href="#">Trees in the Hard Landscape</a>.</p> <p><b>Policy and guidance delivered.</b> Ongoing activity via planning process.</p> <p><b>Delivered.</b> Ongoing activity to measure success including further development of <a href="#">green roof map</a> and research into efficacy of London Plan policy.</p>
<p><b>Access to Nature and Public Engagement</b></p>		
<p>Proposal 37: The Mayor will work in partnership with other interested organisations, such as the NHS and park managers, to maximise the health</p>	<p><a href="#">Improving Londoner’s Access to Nature</a> was published in 2008 and <a href="#">Better Environment, Better Health</a> guides for London Boroughs were</p>	<p><b>Delivered in part.</b> Further work required to identify specific management regimes that maximise health benefits.</p>

<p>benefits of green spaces.</p> <p>Proposal 38: The Mayor will seek to increase the relevance of biodiversity to the daily life of Londoners by drawing on visitor surveys, opinion polls and social, medical and psychological research to inform the way the Strategy is promoted and implemented.</p> <p>Proposal 39: The Mayor will work in partnership with Learning Through Landscapes and other partners to increase the biodiversity value of school grounds.</p> <p>Proposal 44: The Mayor's Culture Strategy will recognise the enjoyment of wildlife and landscape as a cultural experience. The Mayor will include elements of biodiversity interest, where appropriate, in his cultural events.</p> <p>Proposal 45: The Mayor will produce and disseminate information on London's biodiversity, including a popular guide to exploring London's wildlife.</p>	<p>published in 2013. Healthy living is a key objective of the <a href="#">All London Green Grid</a>.</p> <p>No specific action undertaken.</p> <p>No specific action undertaken with Learning through Landscapes but delivered through activity under Proposal 21.</p> <p>The <a href="#">Mayor's Culture Strategy</a> includes reference to cultural value of landscape and wildlife. Ecology and biodiversity conservation messages incorporated in London 2012 activities.</p> <p>Formerly delivered through WildWeb – a stand-alone micro-site. Discontinued as delivered by others such as London Wildlife Trust, RSPB and others.</p>	<p>No activity planned.</p> <p><b>See Proposal 21</b></p> <p><b>Policy intent delivered</b>, but further work not a priority, unless <i>ad hoc</i> opportunities arise.</p> <p><b>Delivered</b>, but discontinued. Improved, public-facing information will be incorporated in planned new GLA web-site.</p>
<p><b>Partnership Working</b></p>		
<p>Proposal 49: The Mayor will continue to be an active member of the London Biodiversity Partnership and will assist where possible in supporting its functions.</p> <p>Proposal 50: The Mayor will take the lead on the production and implementation of some action plans, and will contribute to other action plans as appropriate.</p> <p>Proposal 51: The Mayor will work with members of the London Biodiversity</p>	<p>The GLA was a founding partner of London Biodiversity Partnership and chaired the partnership for 5 years. Instrumental in securing £1.5 million SITA funding for BAP delivery in London.</p> <p>GLA officers initiated and lead plans for woodland, heathland, parks and cemeteries.</p> <p>The Partnership had a governance structure comprised of a Steering</p>	<p><b>Proposal no longer relevant</b> following demise of London Biodiversity Partnership. Ongoing delivery through All London Green Grid and LBBF.</p> <p>See above.</p> <p>See above.</p>

<p>Partnership and others to establish a stakeholder forum to facilitate the implementation of the Biodiversity Strategy.</p> <p>Proposal 52: The Mayor will encourage and support all London borough councils in the establishment of local biodiversity partnerships and the production, implementation and monitoring of borough Biodiversity Action Plans as an integrated element of the delivery and implementation of Community Strategies.</p> <p>Proposal 53: The Mayor will press the Government for legislation to place a statutory duty on local authorities to produce and implement local Biodiversity Action Plans through local partnerships.</p> <p>Proposal 54: The Mayor will foster working links and exchanges with international bodies and organisations in other major cities, to give a lead in urban greening and biodiversity conservation.</p> <p>Proposal 56: The Mayor will encourage the formation of a partnership for excellence in global biodiversity conservation, harnessing the skills and expertise of London's centres of excellence.</p> <p>Proposal 68: The Mayor will work with key partners in the London Biodiversity Partnership to develop a funding strategy for the London Biodiversity Action Plan.</p>	<p>Group, various Working Groups and Action Plan delivery groups.</p> <p>The majority of Boroughs produced Biodiversity Action Plans (BAPs) and established relevant local partnerships. Natural England established an on-line monitoring protocol – <a href="#">Biodiversity Action Reporting System</a>.</p> <p>A <a href="#">duty to have regard to biodiversity</a> was introduced in Natural Environment and Rural Communities Act 2006. This includes the requirement to have appropriate locally determined plans, policies and partnerships in place.</p> <p>GLA officers engage with various international bodies and partners with regards to a wide range of green infrastructure, urban greening and biodiversity matters in order to keep abreast of international exemplars and best practice.</p> <p>No specific action or progression. However, London's reputation as a centre of excellence is maintained by <a href="#">ZSL</a>, <a href="#">Natural History Museum</a> and <a href="#">Kew</a>, and showcase projects such as the <a href="#">London Wetland Centre</a> and <a href="#">Queen Elizabeth Olympic Park</a>.</p> <p>A funding strategy was prepared for the partnership in 2005 which helped lever in funding from sources such as Heritage Lottery Fund and SITA</p>	<p><b>Ongoing activity</b> is a Borough responsibility. Many Boroughs still have BAPs and support local partnerships that help deliver local conservation priorities.</p> <p><b>Delivered.</b></p> <p><b>Ongoing activity</b> as and when appropriate, where there are clear benefits to accelerating delivery in London through collaborative partnerships. In particular GLA works with partners such as Groundwork to maximise opportunities for funding and support through EU initiatives.</p> <p><b>No specific activity planned</b> other than promoting London institutions when appropriate.</p> <p>There are no plans to produce another stand-alone funding strategy but GLA officers continue to support partners in developing funding bids as and</p>
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	Landfill Trust.	when appropriate.
<b>Tourism and Business</b>		
<p>Proposal 55: The Mayor will support enterprising new flagship projects for urban nature conservation and people's enjoyment of the natural world, which may further London's reputation as a World City.</p> <p>Proposal 57: The Mayor will work with the London Chamber of Commerce and Industry, CBI, London First and other organisations to strengthen the role which business can play in conserving London's biodiversity, including the development of company Biodiversity Action Plans.</p> <p>Proposal 58: The Mayor will work with the London Tourist Board and others to raise the profile of London's major natural attractions.</p>	<p>The Mayor has supported and endorsed, and provided funding for major projects such as the <a href="#">London Wetland Centre</a>, <a href="#">Wildspace</a> at Rainham Marshes, the <a href="#">Queen Elizabeth Olympic Park</a> and the forthcoming <a href="#">Walthamstow Wetlands</a>.</p> <p>The Mayor and GLA worked with London Biodiversity Partnership to promote biodiversity to key businesses, including Thames Water which has produced its own company <a href="#">Biodiversity Action Plan</a>. Initiated the <a href="#">Greening the BIDs</a> project which has worked with business improvement districts in Central London to undertake green infrastructure audits to identify opportunities for urban greening including habitat creation.</p> <p>No specific action. Incorporated into general promotion of London's parks and green spaces through <a href="#">London's Great Outdoors</a>.</p>	<p><b>Ongoing activity</b> as and when projects come forward.</p> <p><b>Ongoing activity</b> to develop the Greening the BIDs initiative beyond central London and integrate with similar initiatives being developed by Crown Estate and others.</p> <p><b>Ongoing activity</b> across the GLA under the umbrella of <a href="#">London's Great Outdoors</a>.</p>
<b>Research &amp; Policy Development</b>		
<p>Proposal 60: The Mayor will keep links between biodiversity and other aspects of the environment under review and take them into account in implementing this Strategy.</p> <p>Proposal 61: The Mayor will consider biodiversity effects as part of an overall appraisal of the impacts of climate change in London.</p>	<p>Undertaken as part of generic intelligence gathering undertaken by officers to inform policy and projects. Biodiversity objectives were incorporated into Mayor's <a href="#">Climate Change Adaptation Strategy</a>, <a href="#">Air Quality Strategy</a> and <a href="#">Water Strategy</a></p> <p>Biodiversity and green infrastructure issues are addressed in Mayor's <a href="#">Climate Change Adaptation Strategy</a>. With the London Climate Change partnership, published <a href="#">Creating</a></p>	<p><b>Ongoing activity.</b> Synergies between the Mayor's environment strategies are pursued when projects and programmes are developed.</p> <p><b>Delivered.</b></p>

<p>Proposal 62: The Mayor will consider, with the London Development Agency, the development of a strategy for ethical trade, to discourage trading activity that damages biodiversity beyond London’s borders, including such issues as the use of peat, limestone and wood products from unsustainable sources.</p> <p>Proposal 63: The procurement policies of the GLA group should pay due regard to biodiversity conservation. The Mayor will encourage sustainable procurement of materials used in construction and development.</p> <p>Proposal 64: The Mayor will work with the Metropolitan Police Authority, HM Customs and others, to develop an effective programme to prevent the illegal trade in endangered species and species products within London.</p> <p>Proposal 65: The Mayor will work with local authorities and leading conservation organisations in London to seek to establish a strategic programme of funding for site acquisition and long-term management, to conserve strategically important land for biodiversity and for the enjoyment of nature by people.</p> <p>Proposal 66: The Mayor will support appropriate funding bids from the Federation of City Farms and Community Gardens, environmental education centres and environmental outreach programmes in London to maintain and extend the provision of city farms, community and cultural gardens and environmental education facilities in London, particularly in areas of greatest need.</p>	<p><a href="#">Natural Resilience</a> in 2009.</p> <p>Delivered via the GLA <a href="#">responsible procurement policy</a> <a href="#">Operation Charm</a> established by the Metropolitan Police to tackle trade in endangered species.</p> <p>See above.</p> <p>See above.</p> <p>No specific action. Delivery is through supporting partnership action as when required e.g. major campaign to secure Rainham Marshes secured funding from Heritage Lottery Fund, London Thames Gateway Development Corporation, Thurrock Development Corporation and others.</p> <p>No specific action on this specific proposal, but the intent has been delivered through initiatives such as <a href="#">Capital Growth</a> and <a href="#">Pocket Parks</a>.</p>	<p><b>Delivered.</b></p> <p>See above.</p> <p><a href="#">Operation Charm</a> continues to operate as a partnership between the Metropolitan Police and various wildlife conservation partners.</p> <p>NB The specific proposal is not within the remit of the GLA.</p> <p>Support will be considered and provided on a case by case basis as and when necessary.</p>
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<p>Proposal 67: The Mayor will investigate the problems in accessing funding for biodiversity work in London, and will explore with funding agencies the possibilities for making grant schemes more attractive to potential applicants, more appropriate to the special conditions in London, and applicable to a wider range of work, especially in relation to the London and borough Biodiversity Action Plans.</p> <p>Proposal 69: The GLA group should ensure that the budgets for major infrastructure and development projects include provision for the necessary environmental appraisal (including a biodiversity assessment where appropriate) and for retention, enhancement, creation (where appropriate) and long-term management of wildlife habitat.</p>	<p>The GLA and partners have had continual dialogue with key funding agencies including Heritage Lottery Fund, Big Lottery Fund, Bridge House Trust, SITA Trust, etc. to press the case for funding for biodiversity projects in London. Consequently most key funding agencies have and will fund biodiversity projects. HLF, for example have funded <a href="#">236 projects</a> in London.</p> <p>Standard environmental impact procedures are applied to all major projects, and ecological considerations are considered through masterplanning and project design &amp; development. Where appropriate delivery is secured through planning conditions and obligations e.g. <a href="#">Olympic Park Biodiversity Action Plan</a>. Ecology and nature conservation are addressed in key design guidance, including, for example, <a href="#">Housing Design Guidance</a> and TfL's <a href="#">Streetscape</a> guidance.</p>	<p><b>Ongoing activity.</b> Continual dialogue with various funding agencies to press the case for investment in parks, green space and nature conservation projects.</p> <p><b>Ongoing activity</b> as part of standard operating procedures for project design and delivery.</p>
<b>Monitoring Progress</b>		
<p>Proposal 70: The Mayor will measure the success of this Strategy primarily against two targets, to ensure:</p> <ul style="list-style-type: none"> <li>• that there is no net loss of important wildlife habitat,</li> <li>• that the Areas of Deficiency in accessible wildlife sites are reduced.</li> </ul> <p>Proposal 71: The Mayor will compile State of the Environment Indicators, which will include headline indicators on bird populations (and other appropriate groups where possible), quantity of wildlife habitats, access to natural green spaces and the quality of that access.</p>	<p>Data for these two targets (and other indicators) is collected and published in State of Environment reports. See proposal 71 below.</p> <p>Biodiversity indicators have been included in all State of Environment reports published to date including the most recent <a href="#">London's Environment Revealed</a> published in 2011 and <a href="#">updated in 2013</a>.</p>	<p><b>Ongoing activity</b> as and when State of Environment reports published.</p> <p><b>Ongoing activity</b> as and when State of Environment reports published.</p>

<p>Proposal 72: The Mayor will develop, with other partners, methods for monitoring the progress of actions contained in the London Biodiversity Action Plan and the biodiversity action plans adopted by individual London borough partnerships, in order that such data can be readily combined to provide information for London as a whole.</p>	<p>A national system has been established – <a href="#">Biodiversity Action Reporting System</a>. Action plan leads, and others as appropriate, populate this database. London data can be accessed and combined with data and information held by <a href="#">Greenspace Information for Greater London</a>.</p>	<p>Although a reporting system is in place there are limited resources to update and populate the system. There few if any action plan leads in London able to compile and submit data.</p>
<p><b>Miscellaneous</b></p>		
<p>Proposal 15: The Mayor will support legislation to ban all hunting with dogs.</p>	<p>The Government enacted the Hunting Act in 2004 which imposed a national ban on hunting with dogs.</p>	<p>Governed by national legislation.</p>
<p>Proposal 32: The Mayor will oppose commercial or experimental release of Genetically Modified Organisms (GMOs) into the environment in London.</p>	<p>There have been no experimental or commercial releases of GMOs in London.</p>	<p>Governed by national legislation.</p>
<p>Proposal 42: The Mayor will continue his scheme to provide a free visit to London Zoo for all children in London schools. He will work with Government, London’s education authorities, city farms and other environmental education initiatives to facilitate other opportunities for environmental education, especially at the local level.</p>	<p>The London Zoo school visits programme was in place until March 2011 but ceased due to budgetary constraints.</p>	<p>No further activity.</p>
<p>Proposal 64: The Mayor will work with the Metropolitan Police Authority, HM Customs and others, to develop an effective programme to prevent the illegal trade in endangered species and species products within London.</p>	<p><a href="#">Operation Charm</a> was established.</p>	<p><b>Ongoing activity</b> by Metropolitan Police and partners.</p>

## NATIONAL POLICY FRAMEWORK – CHANGES SINCE 2002

There have been a number of changes to legislation and policy relating to wildlife and the natural environment since the publication of the Biodiversity Strategy in 2002. These include:

- Natural Environment & Rural Communities (NERC) Act, 2006
- Conservation of Habitats and Species Regulations Act, 2010
- Making space for nature, a review of England's wildlife sites, 2010
- Natural Environment White Paper, 2011
- Biodiversity 2020; England Biodiversity Strategy, 2011
- National Planning Policy Framework, 2012

The majority of these changes, and emerging policy agendas, were articulated in the first White Paper on the natural environment in 20 years.

### **Natural Environment White Paper - 2011**

Since the publication of the Mayor's Biodiversity Strategy in 2002 the Government has published the first White Paper on the natural environment for over 20 years. *The Natural Choice: securing the value of nature* was published in June 2011.

The purpose of the White Paper was to add value to the existing policy framework developed by successive Governments, which had established the protected area network, the protection of key species through the planning system and established a regulatory framework that aimed to remedy the worst impacts of environmental pollution.

A core objective of *The Natural Choice* was to encourage society to properly value the economic and social benefits of a healthy natural environment while continuing to recognise nature's intrinsic value. Consequently, the White Paper promotes the adoption of policy and practice that:

- identifies how better to describe and protect the services and resources that the natural environment provides
- promotes the notion that conservation works best when the natural environment is understood as a system rather than a series of protected spaces
- strength the connections between people and nature

*The Natural Choice* was and is, in many ways a step change in Government thinking about nature conservation and the protection and management of the natural environment. It places the concepts of landscape ecology, green infrastructure, ecosystem services and natural capital at the heart of policy development. It strengthens the argument that nature conservation and the protection of the natural environment should be considered in the context of wider environmental and social concerns, such as climate change and inequalities. And it recognises that there is a growing disconnect between people (particularly in towns and cities) and the natural world.



To achieve these ambitions the White Paper sets out key reforms against four key themes:

- protecting and improving the natural environment
- growing a green economy
- reconnecting people and nature
- international and EU leadership

Although the reforms and proposals set out in *The Natural Choice* have set a new direction for national policy on biodiversity and the natural environment much of it had been presaged in the Mayor's Biodiversity Strategy. This is because, in part, in developing a policy framework for London that was fit for purpose it had already been necessary for nature conservation objectives to reflect wider economic and social concerns in order to be relevant in the urban environment and resonant to an urban population.

Table 3 below sets out how the relevant proposals in *The Natural Choice* map across to the policies and initiatives established by Mayor's Biodiversity Strategy.

Table 3

<b><i>Natural Choice</i> proposals</b>	<b>Relationship to Biodiversity Strategy</b>
<b>Protecting and improving the natural environment</b>	
<p>Building on the National Ecosystem Assessment, the Government will support a further phase of ground-breaking research. It will investigate the mix of future actions most likely to secure the most benefits for nature and for people from our ecosystems. It will also develop practical tools to assist decision-makers in applying the lessons of the NEA.</p> <p>We will encourage and support Local Nature Partnerships where local areas wish to establish them. These partnerships will work at a strategic scale to improve the range of benefits and services we get from a healthy natural environment. They will aim to improve the multiple benefits we receive from good management of the land.</p> <p>We will enable partnerships of local authorities, local communities and landowners, the private sector and conservation organisations to establish new Nature Improvement Areas (NIAs), based on a local</p>	<p>The <a href="#">All London Green Grid</a> provides a framework for a more holistic and integrated approach to planning, designing and managing London's green space network in order to deliver multiple benefits, including biodiversity conservation and ecological resilience. Building on this policy framework, the recent established <a href="#">Green Infrastructure Task Force</a> will prepare a report to identify how to secure the most benefits for nature and for people from London's green infrastructure.</p> <p>The partnership delivering the All London Green Grid is recognised by Defra as the Local Nature Partnership for London.</p> <p>At a national level twelve NIAs were formally identified by Government following the publication of <i>The Natural Choice</i>. One of these – the <a href="#">Greater Thames Marshes</a> – includes the Rainham Marshes</p>

<p>assessment of opportunities for restoring and connecting nature on a significant scale.</p> <p>Working within the framework of the National Policy Statements and the Government’s planning reforms, local authorities will be able to use local planning to support Nature Improvement Areas, including identifying them in their local plans where they choose, while not deterring sustainable development.</p> <p>We will establish a new voluntary approach to biodiversity offsetting and will test this in a number of pilot areas.</p> <p>We will work with civil society to update and improve the consistency of the national landscape character area profiles and integrate information on the ecosystem goods and services that they provide. Each profile will identify the environmental potential of landscape areas, to inform national policies such as agri-environment schemes and help local communities and planners to make informed decisions about land use.</p>	<p>and Crayford Marshes in east London. Locally identified NIAs have also been promoted by <i>The Natural Choice</i>. In London the All London Green Grid <a href="#">Area Frameworks</a> provide the basis for these local NIAs eg the <a href="#">Wandle Valley Regional Park</a></p> <p>Delivered through the <a href="#">All London Green Grid Supplementary Planning Guidance</a>. All London Green Grid Area frameworks, plus the <a href="#">London Living Landscapes</a> concept developed by London Wildlife Trust, provide a basis on which to develop locally-determined Nature Improvement Areas</p> <p>London Wildlife Trust are preparing a proposal for a Biodiversity Off-setting Strategy for London. This may inform future iterations of the London Plan.</p> <p>Delivered by All London Green Grid Supplementary Planning Guidance , All London Green Grid Area Frameworks and guidance such as <a href="#">London’s Natural Signatures</a></p>
<p><b>Growing a Green Economy</b></p>	
<p>The Government will establish an independent Natural Capital Committee reporting to the Economic Affairs Cabinet Committee which is chaired by the Chancellor of the Exchequer. The Committee will advise the Government on the state of English natural capital. To support the initial work of the Natural Capital Committee, the Government will take forward a scoping study in 2011 for a natural capital asset check.</p>	<p>The recently established <a href="#">Green Infrastructure Task Force</a> will develop the work of the <a href="#">Natural Capital Committee</a> and apply its principles and frameworks in a London context. A London pilot of the <a href="#">Natural Capital Accounting Framework</a> is underway.</p>
<p><b>Reconnecting people and nature</b></p>	
<p>Local Nature Partnerships and the Health and Wellbeing Boards should actively seek to engage each</p>	<p><a href="#">Better Environment, Better Health</a> guides have been produced for London boroughs. Improving the</p>

other in their work. Forthcoming guidance will make clear that the wider determinants of health, including the natural environment, will be a crucial consideration in developing joint strategic needs assessments and joint health and wellbeing strategies.

The Government will establish a Green Infrastructure Partnership to support the development of green infrastructure in England. This will consider how green infrastructure can be enhanced to strengthen ecological networks and improve communities' health, quality of life and resilience to climate change.

collaboration between the All London Green Grid partnerships and Health and Wellbeing Boards will inform the work of the [Green Infrastructure Task Force](#).

The GLA and partners in London are playing an active role in the [Green Infrastructure Partnership](#) and the chair of the partnership sits on the [Green Infrastructure Task Force](#).

## **National Planning Policy Framework - 2012**

The National Planning Policy Framework (NPPF) is a key part of the government's reforms to make the planning system less complex and more accessible. The framework acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

The NPPF replaces previous guidance such as Planning Policy Statement 9: Biodiversity and Geological Conservation.

The recent process required to prepare and publish [Further Alterations to the London Plan](#)\* have confirmed that London Plan policies are consistent with the NPPF. Consequently the national policy changes instigated by the NPPF do not result in any significant changes to the policies in the London Plan on biodiversity, green infrastructure, trees & woodlands, etc. and no significant impact on the policies and proposals in the Mayor's Biodiversity Strategy.

\*NB the 'Further Alterations' did not amend policies on biodiversity, etc.

## FUTURE PRIORITIES

This review of progress confirms that the core framework, comprising the existing Biodiversity Strategy and associated London Plan policies, provides a sound basis for the continued conservation of London's biodiversity. Nevertheless, the likelihood of continued constraints on public sector budgets and the predicted increase in London's population (and consequent development pressure) will require concerted action in delivering particular aspects of the policy framework, particularly where these align with the direction of travel set by the Government White Paper.

### PROPOSED FUTURE PRIORITIES

Outline actions. Detail of activity to be provided following further consultation.

#### Protection and management of the SINC network

- produce updated guidance on role and function of SINC. [NB with LBBF and LWT].
- support LWT with development and dissemination of London Biodiversity Offsetting strategy. [NB this work is being led by LWT].
- work with LBBF to develop training for Borough planners based on updated guidance on SINC and proposals from Biodiversity Offsetting Strategy.
- update list of priority habitats and species to align with [England Biodiversity Strategy 2020](#).
- continue to convene LWSB to provide advisory service to Boroughs regarding identification and management of SINC.

#### Biodiversity conservation in the wider landscape

- support LWT and others to better integrate [Living Landscapes](#) (and the concept of landscape-scale conservation) into the framework and delivery provided by the All London Green Grid.
- support partnership developing 'Making a B-Line for London' – an initiative to promote pollinator conservation in London.
- delivery of the [London Invasive Species Initiative](#). [NB primarily by Boroughs and other land managers, and Environment Agency].

#### Green infrastructure and Ecosystem Services

- Ensure green infrastructure (and thereby biodiversity as a key component of green infrastructure) is recognised as a critical element of a sustainable economy in the [London Infrastructure Plan](#) and through the work of the [Green Infrastructure Task Force](#). [NB See Appendix 2 for the Terms of Reference of the Task Force and the context within which it operates].
- Publish and disseminate a London [i-Tree Eco](#) assessment to promote the ecological services and economic benefit provided by London's urban forest. [NB work led by Forestry Commission].
- Undertake a [Natural Capital Accounting](#) pilot project to support the work of the [Natural Capital Committee](#) and to inform the work of the Green Infrastructure Task Force.

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## APPENDIX 1

### Biodiversity and Natural Environment policies in the London Plan

#### Policy 2.18

#### Green infrastructure: the network of open and green spaces

##### Strategic

A. The Mayor will work with all relevant strategic partners to protect, promote, expand and manage the extent and quality of, and access to, London's network of green infrastructure. This multifunctional network will secure benefits including, but not limited to: biodiversity; natural and historic landscapes; culture; building a sense of place; the economy; sport; recreation; local food production; mitigating and adapting to climate change; water management; and the social benefits that promote individual and community health and well-being.

B. The Mayor will pursue the delivery of green infrastructure by working in partnership with all relevant bodies, including across London's boundaries, as with the Green Arc Partnerships and Lee Valley Regional Park Authority. The Mayor will publish supplementary guidance on the All London Green Grid to apply the principles of the East London Green Grid to green infrastructure across London.

C. In areas of deficiency for regional and metropolitan parks, opportunities for the creation of green infrastructure to meet this deficiency should be identified and their implementation should be supported, such as in the Wandle Valley Regional Park.

##### Planning decisions

D. Enhancements to London's green infrastructure should be sought from development and where a proposal falls within a regional or metropolitan park deficiency area (broadly corresponding to the areas identified as "regional park opportunities" on Map 2.8), it should contribute to addressing this need.

E. Development proposals should:

- a) incorporate appropriate elements of green infrastructure that are integrated into the wider network
- b) encourage the linkage of green infrastructure, including the Blue Ribbon Network, to the wider public realm to improve accessibility for all and develop new links, utilising green chains, street trees, and other components of urban greening (Policy 5.10).

##### LDF preparation

F. Boroughs should:

- a) follow the guidance in PPG 17 and undertake audits of all forms of green and open space and assessments of need. These should be both qualitative and quantitative, and have regard to the cross-borough nature and use of many of these open spaces
- b) produce open space strategies that cover all forms of open space and the interrelationship between these spaces. These should identify priorities for addressing deficiencies and should set out positive measures for the management of green and open space. These strategies and their action plans need to be kept under review. Delivery of local biodiversity action plans should be linked to open space strategies.

- c) ensure that in and through DPD policies, green infrastructure needs are planned and managed to realise the current and potential value of open space to communities and to support delivery of the widest range of linked environmental and social benefits
- d) In London's urban fringe support, through appropriate initiatives, the Green Arc vision of creating and protecting an extensive and valued recreational landscape of well connected and accessible countryside around London for both people and for wildlife.

## **Policy 5.10**

### **Urban greening**

#### Strategic

- A. The Mayor will promote and support urban greening, such as new planting in the public realm (including streets, squares and plazas) and multifunctional green infrastructure, to contribute to the adaptation to, and reduction of, the effects of climate change.
- B. The Mayor seeks to increase the amount of surface area greened in the Central Activities Zone by at least five per cent by 2030, and a further five per cent by 2050.

#### Planning decisions

- C. Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm. Elements that can contribute to this include: tree planting, green roofs and walls, and soft landscaping. Major development proposals within the Central Activities Zone should demonstrate how green infrastructure has been incorporated.

#### LDF preparation

- D. Boroughs should identify areas where urban greening and green infrastructure can make a particular contribution to mitigating the effects of climate change, such as the urban heat island.

## **Policy 5.11**

### **Green roofs and development site environs**

#### Planning decisions

- A. Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible, to deliver as many of the following objectives as possible:
  - a) adaptation to climate change (ie aiding cooling)
  - b) sustainable urban drainage
  - c) mitigation of climate change (ie aiding energy efficiency)
  - d) enhancement of biodiversity
  - e) accessible roof space
  - f) improvements to appearance and resilience of the building
  - g) growing food.

#### LDF preparation

B. Within LDFs boroughs may wish to develop more detailed policies and proposals to support the development of green roofs and the greening of development sites.

Boroughs should also promote the use of green roofs in smaller developments, renovations and extensions where feasible.

### **Policy 5.13**

#### **Sustainable drainage**

##### Planning decisions

A. Development should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

1. store rainwater for later use
2. use infiltration techniques, such as porous surfaces in non-clay areas
3. attenuate rainwater in ponds or open water features for gradual release
4. attenuate rainwater by storing in tanks or sealed water features for gradual release
5. discharge rainwater direct to a watercourse
6. discharge rainwater to a surface water sewer/drain
7. discharge rainwater to the combined sewer.

Drainage should be designed and implemented in ways that deliver other policy objectives of this Plan, including water use efficiency and quality, biodiversity, amenity and recreation.

##### LDF preparation

B. Within LDFs boroughs should, in line with the Flood and Water Management Act 2010, utilise Surface Water Management Plans to identify areas where there are particular surface water management issues and develop actions and policy approaches aimed at reducing these risks.

### **Policy 7.1**

#### **Building London's neighbourhoods and communities**

##### Strategic

A In their neighbourhoods, people should have a good quality environment in an active and supportive local community with the best possible access to services, infrastructure and public transport to wider London. Their neighbourhoods should also provide a character that is easy to understand and relate to.

##### Planning decisions

C Development should enable people to live healthy, active lives; should maximize the opportunity for community diversity, inclusion and cohesion; and should contribute to people's sense of place, safety and security. Places of work and leisure, streets, neighbourhoods, parks



and open spaces should be designed to meet the needs of the community at all stages of people's lives, and should meet the principles of lifetime neighbourhoods.

## **Policy 7.19**

### **Biodiversity and access to nature**

#### Strategic

A. The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy. This means planning for nature from the beginning of the development process and taking opportunities for positive gains for nature through the layout, design and materials of development proposals and appropriate biodiversity action plans.

B. Any proposals promoted or brought forward by the London Plan will not adversely affect the integrity of any European site of nature conservation importance (to include special areas of conservation (SACs), special protection areas (SPAs), Ramsar, proposed and candidate sites) either alone or in combination with other plans and projects. Whilst all development proposals must address this policy, it is of particular importance when considering the following policies within the London Plan: 1.1, 2.1-2.17, 3.1, 3.3, 5.14, 5.15, 5.17, 5.20, 6.3, 7.14, 7.15, 7.25, and 7.26. Whilst all opportunity and intensification areas must address the policy in general, specific locations requiring consideration are referenced in Annex 1.

#### Planning decisions

C. Development proposals should:

- a) wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity
- b) prioritise assisting in achieving targets in biodiversity action plans (BAPs) set out in Table 7.3 and/or improve access to nature in areas deficient in accessible wildlife sites
- c) not adversely affect the integrity of European sites, and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species, or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.

D. On Sites of Importance for Nature Conservation development proposals should:

- a) give the highest protection to sites with existing or proposed international designations (SACs, SPAs, Ramsar sites) and national designations<sup>25</sup> (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations
- b) give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance
- c) give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.

E. When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:

1. avoid adverse impact to the biodiversity interest
2. minimize impact and seek mitigation

3. only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.

#### LDF preparation

F. In their LDFs, boroughs should:

- a) use the procedures in the Mayor's Biodiversity Strategy to identify and secure the appropriate management of sites of borough and local importance for nature conservation in consultation with the London Wildlife Sites Board.
- b) identify areas deficient in accessible wildlife sites and seek opportunities to address them
- c) include policies and proposals for the protection of protected/priority species and habitats and the enhancement of their populations and their extent via appropriate BAP targets
- d) ensure sites of European or National Nature Conservation Importance are clearly identified.
- e) identify and protect and enhance corridors of movement, such as green corridors, that are of strategic importance in enabling species to colonise, re-colonise and move between sites.

### **Policy 7.21**

#### **Trees and woodlands**

##### Strategic

A. Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor will produce supplementary guidance on tree strategies to guide each borough's production of a tree strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to the borough's open space strategy.

##### Planning decisions

B. Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree'. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.

##### LDF preparation

- C. Boroughs should follow the advice of PPS 9 to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.
- D. Boroughs should develop appropriate policies to implement their borough tree strategy.

### **Policy 7.28**

#### **Restoration of the Blue Ribbon Network**

##### Planning decisions

- A. Development proposals should restore and enhance the Blue Ribbon Network by:
  - a) taking opportunities to open culverts and naturalise river channels
  - b) increasing habitat value; development which reduces biodiversity should be

refused

- c) preventing development and structures into the water space unless it serves a water related purpose (see paragraph 7.84)
- d) protecting the value of the foreshore of the Thames and tidal rivers
- e) resisting the impounding of rivers
- f) protecting the open character of the Blue Ribbon Network.

LDF preparation

B. Within LDFs boroughs should identify any parts of the Blue Ribbon Network where particular biodiversity improvements will be sought, having reference to the London River Restoration Action Plan.

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## APPENDIX 2

### Terms of Reference and context setting for the Green Infrastructure Task Force

#### Green Infrastructure Task Force Terms of Reference

These terms of reference set out the purpose, role, ways of working, management and membership of the Green Infrastructure Task Force.

##### Context

London is projected to reach over 11 million inhabitants by mid-century, a 37 per cent increase from 2011; and the demand for infrastructure is going to increase significantly. This, coupled with other pressures, such as the predicted impacts of climate change and the need for the city to remain competitive in an increasingly global economy, requires London to plan for and invest in a wide range of infrastructure to ensure the cities long-term resilience and economic viability. The London Infrastructure Plan has been prepared to assess the broad magnitude of these infrastructure needs (in transport, utilities and green infrastructure), its costs and how to pay for it, where it might be needed and how to deliver it better.

One of the actions in the London Infrastructure Plan is to establish a Green Infrastructure Task Force to advise on the future planning, design and management of London's green infrastructure to deliver a range of different benefits, and the options for governance and funding. This document sets out the Terms of Reference for the Green Infrastructure Task Force.

##### Purpose of the Green Infrastructure Task Force

The Task Force has been established to bring together a wide range of interests and expertise to identify how to encourage a more strategic and long-term approach to investment in and delivery of green infrastructure, which is defined as

*A network of green spaces - and features such as street trees and green roofs - that is planned, designed and managed to deliver a range of benefits, including: recreation and amenity, healthy living, mitigating flooding, improving air quality, cooling the urban environment, encouraging walking and cycling, and enhancing biodiversity and ecological resilience.*

It will prepare a report advising the Mayor on the strategic issues which need to be addressed in relation to the design, management and operation of London's green infrastructure.

It will look into how green infrastructure might be delivered more efficiently and also into potential new funding sources including, for example, from budgets where investment in green infrastructure would result in revenue cost reductions over time.

It will sign-post the short and medium-term projects, which will support the report's findings with practical examples.

To do this the Task Force will address the following issues to inform a final report:

- Is the existing resource properly understood in terms of the functions and benefits it already provides and are we communicating effectively about the additional services it could provide?
- What new institutional frameworks, governance arrangements or investment vehicles are needed to instigate a shift from an approach based on the provision of amenity and recreation to one which can help deliver the full range of green infrastructure benefits and services?
- What is the vision for London's green infrastructure in 2030 and beyond?

## **Roles and Ways of Working**

The Task Force is expected to:

1. Review evidence, provide feedback and act as a sounding board for the preparation of interim and final reports.
2. Share ideas and information to assist the achievement of project objectives.
3. Provide a link to their own organisation and wider networks to test and seek feedback on emerging ideas and proposals.
4. Promote the work of the group in a positive manner, acting as champions.
5. Attend Task Force meetings to ensure consistency of representation.

Notwithstanding the above, Task Force members are expected to:

1. Provide expert opinion and advice in a personal capacity which is informed by their professional associations but not dictated by them.
2. Endeavour to achieve a group consensus on the advice and recommendations to be included in the Task Force report.
3. Be mindful of the current concerns regarding the funding of parks and green spaces, but not to let these constrain innovative thinking about longer-term changes to institutional or governance arrangements that might be necessary.

## Membership of the Task Force

The Task Force will comprise up to 15 individuals to ensure a reasonable spread of opinion and expertise whilst keeping the group at a manageable size. Members may provide substitutes, but should be mindful that participation on the Task Force is not linked directly to organisational representation and therefore substitutes should represent opinion and expertise not organisational positions.

Members of the Task Force are set out in Annex 1.

The Task Force will be chaired by Matthew Pencharz - Senior Advisor, Energy and Environment to the Mayor of London.

## Management of the Task Force and Deliverables

- The Greater London Authority will provide a Secretariat to the Task Force and a venue for Task Force meetings.
- Additional organisational support will be provided by the London Parks and Green Spaces Forum.
- An interim report will be prepared by July 2015.
- A final report will be prepared in Autumn 2015.

## Meetings

- Meetings will be bi-monthly between November 2014 and September 2015 with the first meeting on Friday 21<sup>st</sup> November from 10 – 12. Meeting will last a maximum of 3 hours.
- A consultative conference is proposed for July 2015 to coincide with the publication of an Interim report. Participation in this conference is encouraged.
- Virtual or sub-group meetings will be established as a when necessary.

## ANNEX 1

### Green Infrastructure Task Force membership

**Matthew Pencharz** - Senior Advisor Environment & Energy to the Mayor of London

**Cllr Julian Bell** - Chair, Transport & Environment Committee, London Councils

**Mark Camley** - Director of Park Operations, London Legacy Development Corporation

**Sue Ireland** – Director of Open Spaces, City of London

**Nick Barter** - Deputy Director, Defra (Manager of the Natural Capital Committee)

**Colin Buttery** - Director of Parks and Deputy Chief Executive, The Royal Parks

**Nic Durston** - London Operations Director, National Trust

**Katherine Drayson** - Environment & Energy Research Fellow, Policy Exchange

**Kyle Robins** - Wastewater Infrastructure Strategy Manager, Thames Water

**Dan Hill** - Executive Director Futures & Best Practice, Future Cities Catapult

**David Rowe** - Head of Borough Projects and Programmes, Transport for London

**Julia Thrift** - Head of Projects, TCPA

**Jessica Gibbons** - Head of Place-shaping, London Borough of Camden

**Shaun Dawson** - Chief Executive, Lea Valley Regional Park Authority

**Yvonne Doyle** - Regional Director (London), Public Health England

**Imran Choudhury** - Director of Public Health, LB Hounslow

**Charlotte Wood** – London Team Manager, Environment Agency

**Tony Leach** - Director, London Parks and Green Spaces Forum

**Meredith Whitten** - PhD researcher, LSE

#### Task Force Secretariat

**Peter Massini** - Principal Policy Officer (Green Infrastructure), GLA

# Green Infrastructure Task Force

## Context

**Green infrastructure** is a term which has become widely used in recent years, albeit it is a term that is not always articulated well or applied consistently. It is also a concept that has been interpreted in various ways and, consequently, is not always fully understood.

The origins of the term lie in the US where it is usually ascribed to projects which incorporate trees, rain gardens, swales, green roofs etc. into the built environment to manage storm-water run-off. In the UK the term has been used by Natural England (the Government agency for the natural environment) and others to describe all green space, including gardens, parks, farmland, forest and natural habitats. The US definition is too narrow in scope, focusing on one function, whilst the Natural England definition is too broad, focusing on form rather than function.

For the purposes of the work of the Green Infrastructure Task Force, the concept of green infrastructure should be understood and promoted as:

*A network of green spaces - and features such as street trees and green roofs - that is planned, designed and managed to deliver a range of benefits, including: recreation and amenity, healthy living, mitigating flooding, improving air quality, cooling the urban environment, encouraging walking and cycling, and enhancing biodiversity and ecological resilience.*

This definition will help us to focus our attention on how we can encourage and support a transition from the current model of a resource managed primarily for amenity, heritage and recreation that provides other incidental benefits, to a new model of a suite of assets managed in a more integrated way to deliver a wider range of planned benefits.

The **Green Infrastructure Task Force** has been established as a commitment made in the London Infrastructure Plan (LIP) 2050. The LIP sets out what changes we need to make to London's infrastructure to accommodate the needs of a rapidly growing city that will be the powerhouse of the UK economy for the foreseeable future. Importantly the LIP recognises that better planning and co-ordination of, and investment in, London's green infrastructure is going to be increasingly important in the decades ahead. This is not only in order to maintain London as a liveable city, but because green infrastructure can complement existing grey infrastructure, and can provide multiple functions and services that can be delivered more efficiently and more sustainably.

The Green Infrastructure Task Force has a remit similar to that given to the [Roads Task Force](#). The Roads Task Force was established by the Mayor to put forward a long-term strategy for



London's roads, to identify some of the barriers which have hindered a more holistic and long-term view as to the functions of roads and streets, and to propose a strategic framework

that would encourage better co-ordination, planning design and management to ensure better and more effective investment in the future. A similar approach is required with respect to London's green infrastructure. The Green Infrastructure Task Force will begin this process and identify some of the early wins for green infrastructure in London. It will seek to accelerate delivery through demonstrating the case for investment.

DRAFT

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<b>Subject: Bag It or Bin It?</b>	
<b>Report to: Environment Committee</b>	
<b>Report of: Executive Director of Secretariat</b>	<b>Date: 3 March 2015</b>
<b>This report will be considered in public</b>	

## 1. Summary

- 1.1 This paper invites the Committee to agree its report into food waste in London, *Bag it or bin it? Managing London's domestic food waste*.

## 2. Recommendation

- 2.1 **That the Committee agrees its report *Bag it or bin it? Managing London's domestic food waste*, as set out at Appendix 1.**

## 3. Background

- 3.1 At its meeting on the 3 June 2014, the Committee agreed the scope and terms of reference of an investigation into food waste in London. The terms of reference were:
- To establish baseline data for London's present performance in dealing with food waste, and to map food reduction initiatives in London;
  - To explore, with relevant organisations, how the household food that does reach the waste stream can be collected and handled more effectively, particularly from flats;
  - To identify the preferred current and potential future options for London to process and recycle its household food waste, with a view to reducing to zero the amount that goes to landfill.
- 3.2 Officers confirm that the report and its recommendations fall within these terms of reference.

## 4. Issues for Consideration

- 4.1 The Committee is recommended to formally agree the report *Bag it or bin it? Managing London's domestic food waste* as set out at **Appendix 1**.
- 4.2 The report makes the following recommendations:

#### *Recommendation 1*

Following the final local government finance settlement for 2015/16, every London borough should allocate available resources to include separate food waste collections in their waste management regimes, across all property types.

#### *Recommendation 2*

The London Waste and Recycling Board (LWARB), in partnership with the GLA, Boroughs and the Waste and Resources Action Programme (WRAP) should improve data collection on food waste so that better projections of need and demand can be made, and the impact of food waste on London's overall recycling and landfill targets can be assessed. Annual food waste recycling statistics for local authorities should be made available on the London Data Store.

#### *Recommendation 3*

The Mayor should join London Councils in its efforts to secure additional resources from the Government to develop separate food and organic waste collection services.

#### *Recommendation 4*

Alongside government funding the Mayor should make available from his own resources ongoing funding for waste reduction and recycling programmes such as the Waste and Resources Action Programme (WRAP) or Recycle for London.

Should the London Waste and Recycling Board's (LWARB) self-financing capabilities not be sufficiently achieved, the Mayor should make a long-term commitment to protect LWARB's budget, thereby enabling LWARB to continue its programmes to support boroughs and successfully embed food waste recycling in their waste management strategies. This could be achieved, for example, by including funding for LWARB in the GLA budget plans through to 2018/19, or by entering into contracts with LWARB for funding in return for delivery.

#### *Recommendation 5*

In line with the London Finance Commission's calls that London government should be allowed to make additional self-determined investments in its own infrastructure, the Mayor should lobby the Government for the devolution of landfill tax to London.

#### *Recommendation 6*

Boroughs should consider introducing specific measures and incentives to increase resident participation in separate food waste recycling collections, particularly in flats and estates, thereby reducing the amount of food waste in the residual waste stream.

#### *Recommendation 7*

The Mayor should work with LWARB and London Councils to introduce mechanisms for a consistent, London-wide approach to communication about food waste by April 2016. Collaboration with networks like the Association of London Cleansing Officers (ALCO) or the London Recycling Officers Group (LROG) as well as specialist organisations like the Waste and Resources Action Programme (WRAP) and Keep Britain Tidy would be beneficial.

Boroughs should consider extending and diversifying their communication and engagement approach to inform residents more successfully about food waste recycling, for example, by:

- ensuring a recurring scheme of promotion including circulating correspondence to new residents;
- more regularly engaging with residents through dedicated waste advisors or local ‘green champions’; and
- setting up school and community engagement schemes and aiming to offer food waste collection services to all schools.

*Recommendation 8*

Design for housing development should enable waste minimisation and separation:

For new housing developments, the Mayor and Boroughs should use their planning and housing investment powers to ‘design out waste’, for example by prioritising funding for schemes that meet the highest levels of waste minimisation, and by promoting best practice for separating and recycling food waste. The proposed 2015 review of the Mayor’s Housing Supplementary Planning Guidance should consider these ideas and also make particular reference to the requirements for food waste separation and storage.

For existing housing developments, the Mayor and LWARB should provide additional financial and technical support to waste collection authorities and community groups to retrofit alternative waste solutions, such as composting schemes or the removal of single stream waste chutes.

*Recommendation 9*

In developing future asset management strategies, the Mayor should consider how he can utilise GLA land holdings to enable waste infrastructure and sustainable development, providing small and commercial-scale anaerobic digestion plants on these sites.

*Recommendation 10*

The Government should press for EU regulations to be changed, namely the Sludge Directive, to allow anaerobic digestion of sewage sludge and organic waste such as food waste alongside each other (co-treatment) and the Mayor should support this call.

*Recommendation 11*

LWARB should expand its brokerage role to promote mutual interests between London’s waste authorities and the waste industry. This could include hosting or facilitating a regular “forum of exchange”, providing technical expertise where needed, or assisting with developing suitable business models.

## **5. Legal Implications**

- 5.1 The Committee has the power to do what is recommended in this report.

## **6. Financial Implications**

- 6.1 There are no direct financial implications to the GLA arising from this report.

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**List of appendices to this report:**

Appendix 1 – *Bag it or bin it? Managing London’s domestic food waste*

**Local Government (Access to Information) Act 1985**

List of Background Papers: None

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**Bag it or bin it?**  
Managing London's domestic food waste

February 2015



# Environment Committee Members

Stephen Knight (Chair)	Liberal Democrat
Murad Qureshi (Deputy Chair)	Labour
James Cleverly	Conservative
Len Duvall	Labour
Nicky Gavron	Labour
Jenny Jones	Green
Kit Malthouse	Conservative

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## Foreword



Everybody creates it, and everybody expects it to be taken away, but very few of us think about how or where our food waste is managed once it enters the waste stream. Yet every year we throw away over 7 million tonnes of food and drink from our homes, with food waste accounting for around 20 per cent of all London's domestic waste.

Of course, preventing food waste from occurring in the first place is far better for the environment than any form of treatment, but no matter how careful our cooking or eating habits a certain amount of food waste is unavoidable – from banana skins and tea bags, to meat bones and egg shells.

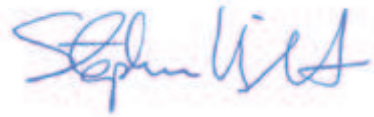
In contrast to the now well established collection of 'dry' recyclables such as paper, metal, plastic and glass, the separate collection of food waste remains comparatively rare in London, with fewer than half of all households receiving a food waste collection service. At the same time London is struggling to meet its recycling targets while landfill capacity is fast running out. The case for improving the collection of food waste is therefore compelling.

This report looks at steps that the Mayor, local authorities and central government can take to improve the management and treatment of food waste within London in order to reduce the amount that goes to landfill.

During the course of our investigation we were pleased to receive evidence from a number of leading European cities as well as visiting a series of innovative community-led projects here in London. All these examples showed that the long-held view that food waste is too difficult and costly to collect in high-density urban London no longer holds true.

In fact, we found that properly funded and well promoted food waste collections can actually reduce the amount of waste generated by households in the first place, potentially making the service cost-neutral. What's more, as the costs of landfill continue to rise, the financial benefits of separate food waste collections will only increase further.

Like many world cities, London faces a series of challenges to its infrastructure over the coming years as its population continues to expand. It is clear, however, that the better management of food waste can play a major role in helping to meet this challenge, ensuring our city continues to operate efficiently and successfully, whilst also helping to deliver the commitment shared across all levels of government to support sustainable growth.



**Stephen Knight AM**  
**Chair of the London Assembly Environment Committee**

# Executive Summary

Food waste is a huge environmental problem. The UK alone creates seven million tonnes of household food and drink waste, and sending that waste to landfill is especially harmful to the environment. There is political consensus that reducing the amount of landfilled bio-waste is a key policy priority. In London, the Mayor recognises that processing food waste will play an important role in boosting the city's recycling and composting rates. Sending less of London's food waste to landfill is becoming an urgent priority for practical reasons too: the Greater London area contains very little landfill capacity, and sites outside its boundaries accepting its municipal waste are expected to be full by 2025.

Recent attention has rightly been focused on how much of the food we buy gets eaten. Supermarkets in particular have been criticised for the way that their buying and selling practices contribute to food waste. This report concentrates on what happens to the food we do throw away. The London Assembly's Environment Committee has looked at how well London is performing in collecting and processing food waste, and our report explores the potential strategies that will make recycling food waste more cost-effective, easier for residents and local authorities, and better managed.

## London's performance

In recent years, London has greatly reduced the amount of domestic waste it sends to landfill, but food waste still accounts for around 20 per cent of its household waste. London also does not stand out nationally for its success in recycling — while recycling rates vary widely across the capital, there is particularly low participation in inner London. More London boroughs are collecting food and green waste than in the past. However, London urgently needs to introduce or extend food waste recycling in its high-density housing stock.

With tightening budgets, local authorities are often guided less by environmental concerns than they are by cost when choosing different recycling and processing methods. In general, separate food waste collections are likely to make waste management more effective overall, as food waste is one of the few waste streams that residents can directly control. Although more expensive, providing a separate collection for food waste can go some way towards improving an authority's overall recycling performance.

Therefore we recommend that boroughs should endeavour to include separate food waste collections in their waste management regimes across all property types. Additionally, reliable data on food waste is scarce and this limits local authorities' ability to plan for effective service provision. We argue that more should be done by those involved in planning and managing waste and recycling to improve data collection on food waste.

## **Funding and costs**

For London boroughs, the biggest barriers to collecting food waste are financial as any financial benefits of separate food waste collections must outweigh the costs. We found that separate food waste collection schemes need not be more expensive than schemes that include bio-waste with other municipal waste. Programmes that offer authorities public funding and technical advice have been demonstrably successful. Such support for local authorities should continue, or even expand. Consequently, we recommend that the Mayor should support London Councils in its efforts to secure additional resources from the Government to develop separate food and organic waste collection services. He should also support waste reduction and recycling programmes such as the Waste and Resources Action programme (WRAP) or Recycle for London, and make a long-term commitment to protect the London Waste and Recycling Board's (LWARB) budget, should LWARB's self-financing capabilities not be sufficiently achieved.

The costs of landfilling continue to rise but the landfill tax raised is not returned to London boroughs, as happens in Scotland and Wales. At the same time, for boroughs that send residual waste for incineration with energy recovery, the cost issue is not landfill tax but gate fees. The devolution of landfill tax to London would allow many authorities to invest more in food waste recycling and other sustainable waste management practices, and we argue that the Mayor should lobby the Government for this.

## **Resident participation and communication**

Even when separate food waste collections are available, participation rates can remain low because of people's misconceptions, especially about vermin and odour. Communication is essential to increasing participation, and communication strategies need to be clear and consistent. The Committee recommends a strategic, pan-London approach. Additionally, boroughs should look for ways to extend and diversify their approach to inform residents more successfully about food waste recycling.

Participation in separate food waste recycling generally declines with rising urban density. London urgently needs to improve its performance in recycling food waste from its high-density housing stock. Positive examples exist, such as Bexley in London or Milan in Italy, which provide best practices that may help others.

It is crucial that new developments are designed to accommodate recycling. Planning and design policies in London already take note of such issues but the Mayor must use his planning and investment powers to strengthen the concept of 'designing out waste'. Additional financial and technical support to waste collection authorities and community groups to retrofit alternative waste solutions, such as composting schemes or the removal of single stream waste chutes, would be welcomed.

## **Processing and recycling household food waste**

London urgently needs new treatment facilities for organic waste. This investigation found that less than half of London's food waste is processed in London and that, at present, only one plant in London provides dedicated organic waste treatment. As a

growing city, London will require facilities to process about one million extra tonnes of food and green waste. While the Mayor is encouraging the development of further sustainable waste treatment facilities in London, it is hard to see where the funding will come from. Therefore, we recommend that the Mayor uses some of his landholdings to enable – or directly provide – waste infrastructure, such as food waste processing plants.

Finally, there is a perception within the waste industry that London is a complicated place to do business. Long-term direction and security are, therefore, key to decision-making and delivery, but the interests of local authorities and the waste industry are not always aligned. Stakeholders within the waste industry are calling for greater leadership and more coordinated policies. We found that there is a need for greater exchange of knowledge and understanding of need and demand, both between authorities and between the public and private sectors. More widely, we argue, that both sides would benefit from a stronger brokerage role taken up by LWARB.

# 1 Introduction

Food waste is a considerable environmental problem. In the UK alone, we create 7 million tonnes of household food and drink waste every year. While around two thirds of this waste was collected by local authorities in 2012, most was in with the ‘residual’ or general waste, which may end up on landfill. Only 11 per cent of the food was captured through separate collections of food waste.<sup>1</sup> Sending food waste to landfill is especially harmful to the environment. The methane and carbon dioxide released by organic waste in landfill sites globally adds an estimated 3.3 billion tonnes of greenhouse gases to the Earth’s atmosphere.<sup>2</sup>

There is political consensus in Europe that reducing the amount of landfilled bio-waste is a key policy priority. This is backed up by a raft of legislation, incentives and penalties. The European Union Waste Framework Directive (WFD) stipulates that the separate collection of paper, metal, plastic and glass will become mandatory from 2015; the separate collection of bio-waste, which includes food, is “encouraged”.<sup>3</sup> At the same time, the Landfill Directive requires Member States to progressively reduce landfilling of municipal waste. In the case of the UK the adopted target is a reduction to 35 per cent of 1995 levels by 2020. A further legislative package recently presented by the European Commission proposes phasing out landfilling by 2025 for recyclable waste (including bio-waste) and enforcing separate collection streams; this has not been formally adopted but a further, purportedly more ambitious, programme of measures is expected later in 2015.<sup>4</sup>

In London, the Mayor recognises that processing food waste will play an important role in boosting London’s recycling and composting rates. The Mayor’s Municipal Waste Management Strategy 2011 sets out his ambitions to reduce the amount of municipal waste produced, increase the amount of waste reused, recycled or composted, and generate low carbon energy from the residual waste. The London Plan sets targets that would see London’s boroughs working towards zero biodegradable and recyclable waste to landfill by 2026, and recycling or composting 50 per cent of London’s municipal waste by 2020.

These targets are challenging but separating out household food waste at source would significantly contribute towards the national and Mayoral targets. Each tonne of food and drink waste diverted from landfill could reduce carbon emissions by 0.4-0.7 tonnes CO<sub>2</sub> equivalent.<sup>5</sup> Food waste can also provide green energy, thereby mitigating climate change, particularly through anaerobic digestion (AD).

Sending less of London’s food waste to landfill is becoming an urgent priority. The Greater London area contains very little landfill capacity, and sites outside its boundaries accepting its municipal waste are expected to be full by 2025.

However, London faces particular challenges in disposing of food waste cost-effectively. Funding structures for waste disposal in the city are complex. Food waste recycling services are difficult to operate in areas of high-density housing. It can be hard to

promote recycling to London's large transient population. And, although technologies to treat food waste offer economic and environmental opportunities, creating the necessary infrastructure can be challenging when the needs of the waste industry conflict with those of local authorities.

This report recognises that the public debate on food waste needs to shift from consumption to disposal. Recent attention has rightly been focused on how much of the food we buy gets eaten. Supermarkets, in particular, have been criticised for the way that their buying and selling practices contribute to food waste. This report, in contrast, concentrates on what happens to the food we throw away. The Committee has looked at how well London is performing in collecting and processing food waste, and our report explores the potential strategies that will make recycling food waste more cost-effective, easier for residents and local authorities, and better managed.



## 2 London's performance: how well do we dispose of food waste?

In recent years, London has greatly reduced the amount of domestic waste it sends to landfill. In 2011/12, about 30 per cent of such waste went to landfill, a major improvement on previous years. Although this figure is better than the average for England (which stands at 38 per cent), London still lags behind other European cities in Germany, Austria and the Nordic countries, many of which have practically phased out landfilling of municipal waste.<sup>6</sup> This should continue to be our aspiration.

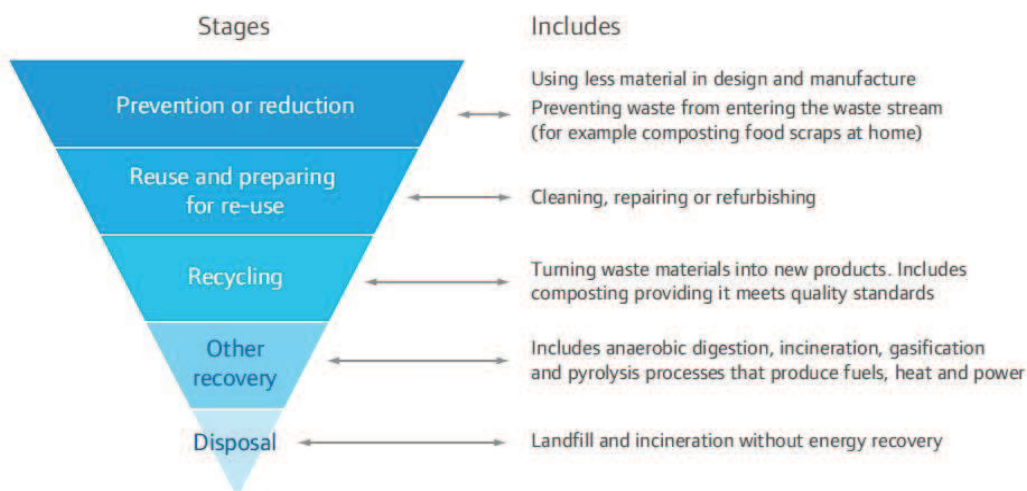
Food waste accounts for around 20 per cent of household waste in the capital. The Waste and Resources Action Programme (WRAP) estimates that 890,000 tonnes of food is thrown away in London each year, of which 540,000 tonnes is avoidable.

Producing a separate collection of food waste can go some way towards improving an authority's overall recycling performance. London already recycles dry waste successfully (paper, plastic and glass). Success in managing food waste, however, is harder to achieve: it is more difficult and costly to process. London boroughs already spend over £50m per year disposing of household food waste, around 20 per cent of London's total waste treatment and disposal cost.<sup>7</sup> As a result, boroughs have been slower to extend their collection and processing of food waste.

### Strategies and initiatives

To achieve the greatest cost savings and environmental benefits, local authorities adopt a 'waste hierarchy' strategy (see below). This strategy seeks to minimise disposal to landfill by concentrating on preventing, reusing and recycling waste. For food waste, this effectively means composting, anaerobic digestion, and incineration, particularly in waste-to-energy facilities.

*The Waste Hierarchy prioritises prevention, reuse and recycling*



Source: *The Mayor's municipal waste management strategy, 2011*

As different methods have similar environmental benefits, local authorities' choices are often determined by cost. For example, according to Sutton and Wandsworth, only very small reductions in carbon are achieved by diverting food waste from an energy-from-waste (EfW) facility to a composting or AD process. Data from the Department of Energy & Climate Change (DECC) and the Department for Environment, Food & Rural Affairs (Defra)<sup>8</sup> indicates that there is often only a small difference in the environmental benefit between anaerobic digestion and other forms of energy recovery. Cost factors therefore become even more significant for strategic decision making.

In their quest to prevent and reduce waste, local authorities are supported by a number of initiatives to reduce food waste. In west London, for example, WRAP's *Love Food Hate Waste* campaign successfully encouraged people to change key targeted behaviours which then reduced the amount of avoidable food waste by an estimated 14 per cent in just six months. The campaign included radio, digital and print advertising along with supporting events, and community engagement such as cookery classes and direct customer engagement through a network of volunteers. Such a model would be relatively easy to replicate in other boroughs and linked with a London-wide strategy.

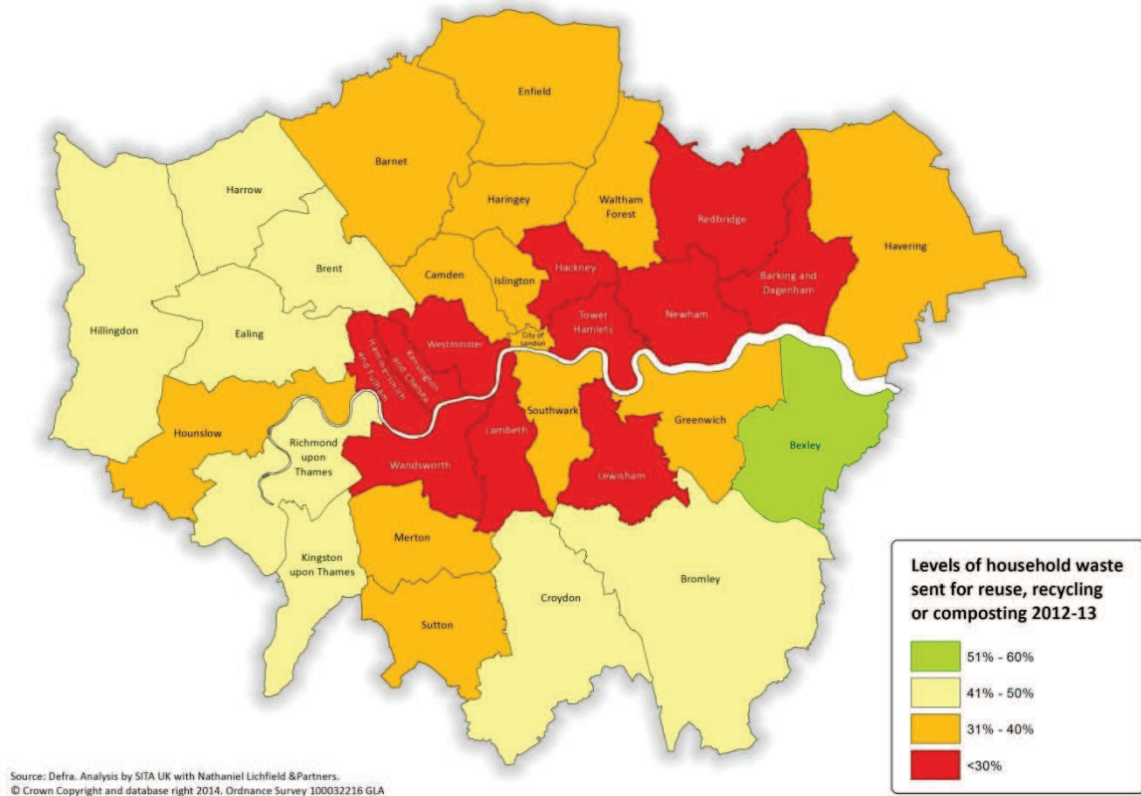
The Mayor's £1 million *FoodSave* scheme helps small and medium-sized businesses to reduce food waste; and there are a number of community or charity schemes in operation such as 'Food for good', a sustainable catering service that uses surplus produce, or 'PlanZHeroes', a matchmaking service to connect businesses with surplus food to charities.

### **Performance**

London as a whole does not stand out nationally for its success in recycling. Since 2008, the amount of London's local authority-controlled waste sent to landfill has declined significantly, but the city, on average, still has one of the lowest household recycling rates among English regions, at 34 per cent. Moreover, London's overall recycling rates have virtually levelled over the last three years with almost half of London boroughs recycling less in 2013/14 than the previous year.<sup>9</sup>

Rates for inner London, at 16 per cent, are exceptionally low. The next poorest performer nationally – the West Midlands – has a total recycling rate of 31 per cent, nearly double that of inner London.<sup>10</sup> However, recycling rates vary widely across London – there are also boroughs that have achieved or exceeded a 50 per cent recycling rate. A complex set of factors influences these rates, including demographics, the materials collected, the systems and containers used, communications, and the composition of housing stock.<sup>11</sup>

Map 1: London's performance in reusing, recycling and composting its household waste is low, particularly in central and north-eastern boroughs



More London boroughs are collecting food and green waste than in the past. According to London Councils, the number of boroughs providing such collection services has steadily increased to 51 per cent of households over the last 10 years, but 10 boroughs still do not collect domestic food waste at all. In its own research, the Committee found that 23 out of the 33 boroughs currently collect food waste separately from other recycling, and from the residual waste, which is often destined for landfill. These collections serve 1.7 million of households, a 14 per cent increase since 2011/12.

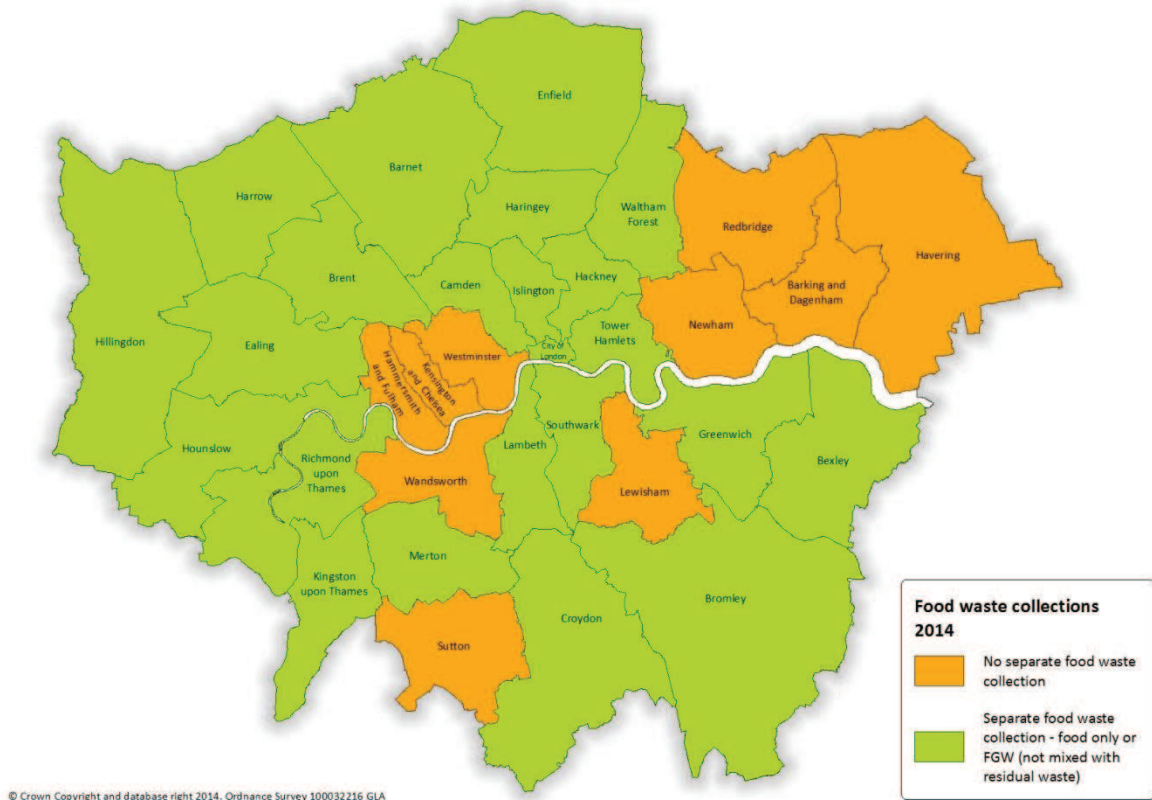
There are 12 unitary authorities responsible for both collection and disposal of its waste in London. For the remaining 21 London boroughs, disposal is arranged across four joint waste disposal authorities comprised of the East London Waste Authority (ELWA), North London Waste Authority (NLWA), Western Riverside Waste Authority (WRWA) and the West London Waste Authority (WRWA).<sup>12</sup>

Map 2: Strategic London Waste Authorities



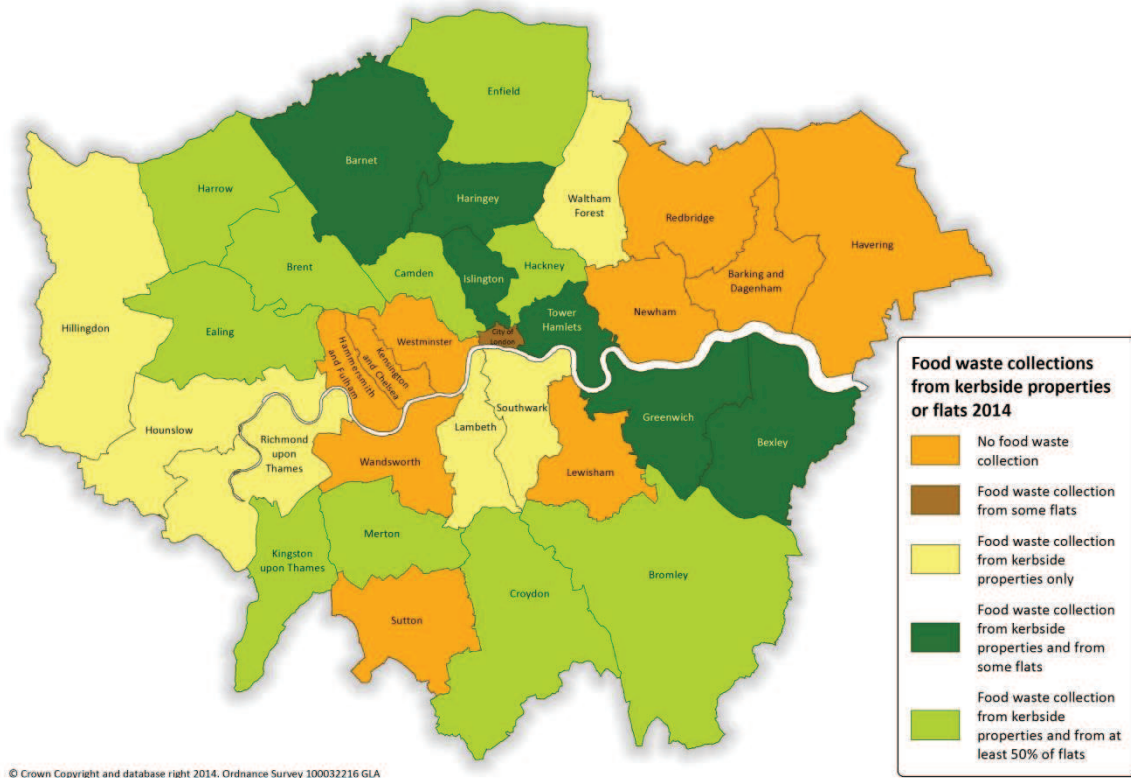
Source: [www.londonwastemap.org](http://www.londonwastemap.org)

Map 3: The majority of London boroughs offer separate food waste collections



London urgently needs to introduce or extend food waste recycling in its high-density housing stock. Most boroughs offer kerbside collections. 17 of the 33 London boroughs also offer collections from multi-storey flats or estates, but coverage is much lower here: only ten have an extended service to more than half of all flats. 16 boroughs do not collect food waste from flats at all; two of these have confirmed that they are introducing a collection service to some flats or estates. The densely populated inner London boroughs, with high proportions of flats, tend not to have separate collections for food waste. Overall, half of London's households still lack access to separate food or organic waste collections.

Map 4: Food waste collection from different property types varies across London

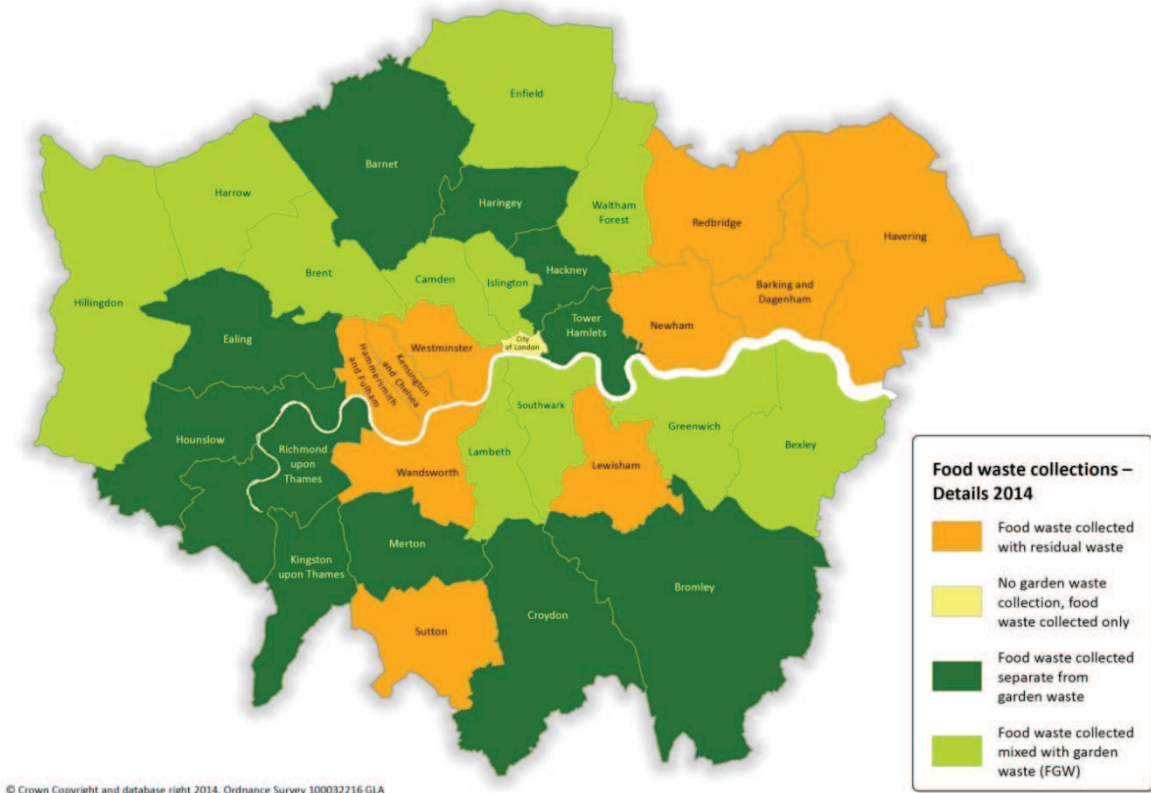


In general, separate food waste collections are likely to make waste management more effective overall. They can increase total recycling rates, which correlate strongly to the rates for organic recycling. Separate collections can also help reduce the amount of food wasted in the home. The London Borough of Hackney and others have reported, for example, that separate collections can prompt residents to notice how much food they are wasting.

Food waste is also one of the few waste streams that residents can directly control. In a recent workshop and survey on recycling, many participants considered collecting food waste the best thing their council could do to help them recycle more. A quarter of a typical household’s waste is food waste: it is easy to identify and separate from other waste.<sup>13</sup>

Some London local authorities collect food waste separate from garden waste while others collect it mixed, which can affect the choice and cost of processing.

Map 5: Food and garden waste can be collected separately or mixed in London



### Outlook: can the boroughs do better?

The Committee appreciates that it can be difficult for some London boroughs to extend or introduce separate collections for food waste. The Environmental Services Association (ESA) strongly supports separate collections, but is not in favour of making them mandatory (as suggested in the past by the EU Commission). The Association believes that there is no ‘one size fits all’ collection system which is best in all circumstances and notes: *“The design of waste collection schemes is complex and depends on factors such as the demographics, geography, housing stock and proximity to treatment facilities”*.<sup>14</sup>

Authorities may find it harder in the future to find the advice they need. Defra continues to help authorities sustainably manage their food waste, with technical support and information about appropriate treatment options.<sup>15</sup> At the end of 2013, however, the Department announced that it would scale back support to local authorities in this area.<sup>16</sup>

London waste authorities have offered us other reasons for not implementing separate food waste collections. In their evidence to us, they have cited the need to meet costs, to address existing waste contracts, to achieve high participation rates, and to manage collections from high-rise properties as barriers to progress. Opportunities to instigate and extend food waste collections will arise, however, such as when existing waste contracts end. We believe that authorities should plan now to take advantage of these opportunities.

### **Recommendation 1**

Following the final local government finance settlement for 2015/16, every London borough should allocate available resources to include separate food waste collections in their waste management regimes, across all property types.

### **Data collection and monitoring**

Reliable data on food waste is hard to come by. At the national level, information about local authority collected waste is reasonably well gathered, through reporting and tracking systems such as Defra's WasteDataFlow. But the House of Lords' European Union Committee concluded in a recent report that "food waste is a data-poor area".<sup>17</sup> Information on consumer participation or capture rates, which would give a picture of how much food waste remains in residual bins, is particularly scant. The data that does exist varies greatly in substance and format: many boroughs do not analyse waste composition or participation levels.

### **Recommendation 2**

The London Waste and Recycling Board (LWARB), in partnership with the GLA, Boroughs and the Waste and Resources Action Programme (WRAP) should improve data collection on food waste so that better projections of need and demand can be made, and the impact of food waste on London's overall recycling and landfill targets can be assessed. Annual food waste recycling statistics for local authorities should be made available on the London Data Store.

## 3 Funding and costs

For London boroughs, the biggest barriers to collecting food waste are financial. To begin with, local authorities must be convinced that separate food waste collection can be cost-effective. They must receive adequate financial support to set up and operate the schemes. Contractual arrangements need to be flexible enough to allow boroughs to rationalise and share services if necessary. The costs of landfill continue to rise and London boroughs currently do not benefit from devolved landfill tax, in the way that authorities in Scotland and Wales do.

### Making food waste disposal cost-effective

The financial benefits of separate food waste collections must outweigh the costs. One critical factor is take-up rate among residents. Effective food waste collection can reduce the amount of waste generated in the first place, potentially making the organics service cost-neutral. Enough people must use the service to offset the costs of set-up and collection.<sup>18</sup> The following chapter points to ways of ensuring good participation rates.

Evidence from elsewhere suggests that separate food waste collection schemes need not be more expensive than schemes that include bio-waste with other municipal waste. Many innovative and cost-effective separate collection schemes have been implemented in the south of Europe, in parts of the UK and in some new EU Member States.<sup>19</sup> For example, in Milan, Italy, between 80 and 90 percent of households, mostly in blocks of flats, are regularly separating their food waste, while in Hackney good levels of participation are recorded for street-level properties. In Waltham Forest an improved waste collection service achieved significant financial savings (see box below).

A number of factors influence feasibility: the availability of funding, the costs of landfill disposal, participation rates, contractual arrangements and, not least, the costs of equipment. Providing free bags, for example, is an obvious cost, although they are popular among users.<sup>20</sup> Offering new users free bags for an initial period might help to limit costs overall.

### Case study – costs and benefits

The London Borough of Waltham Forest negotiated a new waste collection contract in 2011 with specifications designed around the preferences of residents as expressed in a consultation the previous year. The new service maintains a weekly residual and dry recycling collection and has increased an existing food and garden waste service. By using split-body vehicles and double-shift working on recycling collections, the scheme has saved £2 million per year. By giving residents recycling bins instead of boxes and reducing the size of residual waste bins, the authority has increased the amount of recycling materials collected from the kerbside by 17.6 per cent in the last year. At the same time, resident satisfaction with the waste collection service has risen to 82 per cent - an increase of 32 per cent since 2011.<sup>21</sup>



### **Opportunities for rationalising and sharing waste services**

There are opportunities for waste authorities to rationalise their operations and achieve significant savings. Data collected by the Committee shows that existing food waste collection arrangements vary greatly across London: In 20 boroughs, food and residual waste is being collected by five different operators; the other 13 boroughs manage the service themselves. Waste is sent, by 12 different operators, to 14 different locations within and outside London for processing (nine locations for food that was collected separately from the residual waste). In comparison, in Berlin, a city of 3.5 million people, only two operators manage the separate waste collection, recycling and processing, as well as street cleaning and other services.

### **Public funding schemes and other support**

Programmes that offer authorities public funding and technical advice have been noticeably successful. LWARB, for example, has established a 'Flats Recycling Programme' and a 'Driving Up Performance Fund', which have helped to extend food waste collections to around 95,000 households across seven London boroughs. The Department of Communities and Local Government (DCLG) has offered funds to seven boroughs, through its Weekly Collection Support Scheme, to help extend food waste collections.

Such support for local authorities must continue and expand. London Councils has asked the Government to provide further support for separate food and organic waste collection services. The House of Commons Environment, Food and Rural Affairs Committee has made a similar call: in its recent inquiry on waste management in England, it heard that, despite the success of high-profile campaigns such as 'Recycle Now' or 'Love Food Hate Waste' over the past ten years, Defra has cut funding for WRAP and Keep Britain Tidy.<sup>22</sup>

LWARB has in the past received capital and revenue grant funding from Defra. This funding, which has been gradually reduced of the past years, is due to run out this year. LWARB is expected to continue covering its operational costs and carry on investing in a pipeline of investment opportunities through its own revolving investment fund. It has also announced a partnership programme with WRAP.

### **Recommendation 3**

The Mayor should join London Councils in its efforts to secure additional resources from the Government to develop separate food and organic waste collection services.

#### **Recommendation 4**

Alongside government funding the Mayor should make available from his own resources ongoing funding for waste reduction and recycling programmes such as the Waste and Resources Action Programme (WRAP) or Recycle for London.

Should the London Waste and Recycling Board's (LWARB) self-financing capabilities not be sufficiently achieved, the Mayor should make a long-term commitment to protect LWARB's budget, thereby enabling LWARB to continue its programmes to support boroughs and successfully embed food waste recycling in their waste management strategies. This could be achieved, for example, by including funding for LWARB in the GLA budget plans through to 2018/19, or by entering into contracts with LWARB for funding in return for delivery.

#### **Landfill tax and gate fees**

The costs of landfilling continue to rise. Although boroughs have significantly reduced their reliance on landfill in recent years, some (for example, Wandsworth) have not saved enough on landfill tax to cover the cost of providing a separate food waste collection.

At present, the landfill tax raised is not returned to London boroughs, as it is in Scotland and Wales. Devolving this tax would allow authorities to invest more in food waste recycling and other sustainable waste management practices. The London Finance Commission has already argued that London should enjoy greater financial and fiscal control.<sup>23</sup> London Councils has subsequently asked the Government to consider devolving the landfill tax to London.<sup>24</sup>

For boroughs that send residual waste for incineration with energy recovery, the cost issue is not landfill tax but gate fees. Gate fees for organic waste treatment plants are generally lower than for residual waste plants. For some authorities (Bexley, for example), the residual waste gate fee is the financial motivator to set up a separate food waste collection; for others, this potential saving can be negated by the higher costs involved in collecting, providing equipment and promoting the scheme.

#### **Recommendation 5**

In line with the London Finance Commission's calls that London government should be allowed to make additional self-determined investments in its own infrastructure, the Mayor should lobby the Government for the devolution of landfill tax to London.

## 4 Resident participation and communication

Even when separate food waste collections are available, participation rates can remain low because of people's misconceptions, especially about vermin and odour.

Communication is essential to increasing participation, and communication strategies need to be clear and consistent. A strategic, pan-London approach would be beneficial. Thus, the Committee recommends that the Mayor should work with LWARB and London Councils to establish a more consistent, London-wide approach to communication about food waste. Additionally, boroughs should look for ways to extend and diversify their approach to inform residents more successfully about food waste recycling.

### Communicating with residents

The most common reasons given by residents for not recycling food waste tend to be assumptions rather than real problems. Residents spoke to the Committee, for example, of their concerns about hygiene, odour or vermin – issues that were considered significantly less important by those residents who participated in the collections.<sup>25</sup> Many households believe that they are not producing enough food waste to make participating in recycling worthwhile. In fact, WRAP has shown in its 'The Food We Waste' study that even households claiming to generate no food waste at all produce on average 2.9 kg per week.<sup>26</sup>

Most of these issues can be addressed by consistent, clear and regular communication.<sup>27</sup> Many people do not understand what happens to their waste after it leaves their home. Residents have called for more detailed information to build their trust in the system, as well as interest in the environmental benefits. Charlotte Morton, Chief Executive at the Anaerobic Digestion & Bioresources Association said: *"It is really important for people, the population as a whole, to understand why they are being asked to segregate their food waste and what the benefit is to them. That would probably improve the rates as well."*<sup>28</sup> Residents are also often confused by the range of services and collection systems provided in different areas.<sup>29</sup>

### Improving equipment and schedules

People are more likely to participate in food recycling if containers are the right size and easy to use. Containers outside a property are inconvenient; residents interviewed during both SITA's and Defra's studies also mention that stolen or damaged bins have stopped them from recycling.<sup>30</sup> Indoor caddies for interim storage can be more acceptable, especially for wet items. Free biodegradable bin liners also encourage participation and reduce the danger of contamination. Providing bags, however, represents a cost for local authorities; in some cases, using newspaper to wrap waste has been successfully promoted.

The most effective food waste schemes offer a weekly collection. Evidence collected by WRAP and other organisations suggests that collections can achieve high levels of public support where food waste is collected weekly, even if residual waste is collected fortnightly.

### Collecting from estates and blocks of flats

Participation in separate food waste recycling generally declines with rising urban density.<sup>31</sup> Around half of London's housing stock is multi-occupancy – the proportion is much higher in inner London – and it generates 40 per cent of municipal waste.<sup>32</sup> Collecting this waste presents particular difficulties: storage space is extremely limited, and residents can find it hard to carry waste to a central collection point. Authorities struggle to promote recycling to the often diverse and hard-to-reach groups living in flats and estates. As a result, recycling performance from these properties is, on average, only 10 per cent.

### Maximising participation in high-density housing areas

Experience suggests that boroughs should make targeted interventions to encourage residents in these areas to recycle their food waste. Such interventions can include:

- bin cleaning advice or services;
- a range of bin and container options, to cater for the needs of different households;
- free caddies or bin liners;
- suggestions for alternatives to using a kitchen container or biodegradable bags, for example to wrap food waste in newspaper;
- more information on the scheme itself, including the end uses for compost and digestate;
- regular reminders, particularly to capture new in-movers, for example with Council Tax bills; and
- incentives or rewards, for example Council Tax reduction for participants (see box below).

#### Case study - Incentives

The London Borough of Bexley specifically targets residents in blocks of flats to join its Green Points scheme, part funded by LWARB. Points are awarded for increased recycling which residents can use to claim discounts and offers provided by retailers on local high streets. Recycling rates have gone up since the scheme began and it is now being rolled out to more properties.<sup>33</sup>

#### Recommendation 6

Boroughs should consider introducing specific measures and incentives to increase resident participation in separate food waste recycling collections, particularly in flats and estates, thereby reducing the amount of food waste in the residual waste stream.

## Communication and marketing approaches

Communication is an essential element in increasing levels of participation in food recycling. Successful trials in various countries have highlighted the benefit of educating communities on the merits of recovering food waste.<sup>34</sup> London boroughs can learn from these initiatives, both in promoting the benefits of collecting food waste and offering practical advice.

Communication strategies need to be consistent. Promotional campaigns must present potentially competing messages as a package: on prevention, home composting and recycling food. The public often has little grasp of the waste hierarchy, and authorities need to explain how Londoners should prioritise their behaviour.

A strategic, pan-London approach is essential, but currently not sufficiently visible. Residents living and working in different boroughs, for example, need to be provided with consistent messages. London Councils identifies London's increasingly transient population, especially people that do not speak English as a first language, as particularly hard to engage. Collaboration between boroughs and other authorities is essential: standard messages, slogans and graphics, jointly adopted by all participating boroughs, could help raise awareness and change behaviours more widely.

The 2014 report 'The Ur[bin] Issue' stresses that: *"The Mayor and LWARB could provide the sort of leadership to help find a better balance between localisation and the devolvement of decisions and choices on recycling, combining local insight and knowledge with a national framework that the public and businesses can easily understand"*.<sup>35</sup>

Support for boroughs in developing their communication strategies is available from LWARB. In June 2014, the Board re-launched its Borough Communication Support Programme, including a £100,000 fund which offers support and advice, mainly through WRAP. One of the priority areas for this new fund is low performing areas such as estates and large blocks of flats.

## Tools and messages

London boroughs can use a range of communication tools to raise awareness and engage communities. They should send out messages that address people's concerns about recycling, explain the environmental benefit of separating food waste, and offer simple solutions. Boroughs can choose the tools that are most suited to local circumstance, or follow a joint approach with other boroughs to generate more consistent messages beyond borough boundaries (see box overleaf).

## Tools that work

- Mail drops with letters and leaflets, booklets or bin stickers
- Door knocking and canvassing exercises, particularly aimed at low participation areas
- A dedicated enquiry hotline during the early weeks of a new or changed scheme
- A dedicated webpage combined with the use of social media such as Twitter
- Press adverts and articles in the local press/borough magazines and local radio adverts
- Outdoor adverts on bus backs, refuse vehicles, bus stops, town centre banners, cyclists' jackets, local shops, or community notice boards
- Offering advice at roadshows, drop in sessions, information stalls in town centres and at local markets
- Establishing "Green Champions" to target specific groups or communities and to support council staff
- Use of colour coded bin stickers with pictorial images of items including a budget for replacement bin stickers at reasonable intervals

## Messages that work

- Fostering a better understanding about end uses for recycled household food waste and promoting the value of these uses
- Communicating reasons why people should want to participate and explaining how home composting and food waste collection complement each other
- Setting out practical information on making food waste recycling as easy and convenient as possible such as clear 'dos and don'ts'
- Including feedback and updates on how residents and the waste authorities have been performing, providing positive feedback
- Including incentives like a voucher for free caddy liners, prize competitions, or a points scoring system to access incentives
- Combine cohesive and consistent messages and branding, for example by applying standard WRAP iconography across all types of communication

Sources<sup>36</sup>

Boroughs in London and beyond use a range of messages and tools to communicate with residents. Greater Manchester, for example, has successfully run its 'Right stuff, right bin' campaign, which used tags to highlight the correct separation of materials, and included follow-up visits to households where continued contamination occurred. Other boroughs use imagery and messaging to promote forthcoming collection schemes, give instructions and offer practical suggestions.

*Bournemouth Council promotes its new food waste scheme*



Source: [www.bournemouth.gov.uk](http://www.bournemouth.gov.uk)

*Hackney Council includes practical suggestions in its food recycling campaign*



Source: [www.hackney.gov.uk](http://www.hackney.gov.uk)

Greater Manchester campaign seeks to reduce waste contamination using bin tags



Source: [www.manchester.gov.uk](http://www.manchester.gov.uk)

Greater Manchester bin tags



Bexley Council food caddy with pictorial images



Recycle for Scotland adds images to the instructions for using food waste caddies

An infographic from "recycle for Scotland" titled "How to use your caddies". It features a "Top tip" box that says "Remember to only use the liners supplied" with an image of a liner. Below are five numbered steps with corresponding images:
 

- Put one of the free liners into your indoor caddy
- Transfer any cooked or uncooked food waste to the caddy
- When the liner is full, tie and remove from caddy and replace with a new liner
- Place the full liner into your outdoor caddy
- Place your outdoor caddy at the kerbside on your collection day and we will collect it

 The infographic also includes the "ZERO WASTE SCOTLAND" logo and the website [www.recycleforscotland.com](http://www.recycleforscotland.com).

Source: [www.recycleforscotland.org](http://www.recycleforscotland.org)

Basildon Council integrates national recycle logos and food symbols

An infographic from Basildon Council titled "FOOD WASTE RECYCLING". It features a large illustration of a bin overflowing with food waste. Below the illustration are six icons representing different food categories: bread & pastries, fruit & vegetables, fish, dairy, tea & coffee grounds, and cooked/uncooked meat & bones. At the bottom, it includes the "recycle for Basildon" logo and the "Basildon Council" logo with the address "BASILDON • BILLERICAY • WICKFORD".

Source: [www.basildon.gov.uk](http://www.basildon.gov.uk)



### Involving schools and the wider community

As well as targeting residents and households, boroughs can promote food waste recycling through the wider community (see box below). In particular, they can:

- provide collections or composting schemes for schools, community-based organisations and faith groups; and
- teach about recycling in schools and embed the topic within the curriculum.

#### Case study – School engagement

In the London Borough of Southwark, the Council's recycling and waste partner Veolia is running a scheme that seeks to get as many Southwark schools as possible to recycle their food waste and educates school children about the environmental value of reducing and collecting food waste. It is hoped that the children will integrate this in their home life as well and encourage family members to recycle.<sup>37</sup>

Merton Council is similarly rolling out its food waste collection service to every school in the borough. Catering and school staff will be trained to educate the school children about recycling food waste and helping to protect the environment.<sup>38</sup>

*Merton pupils recycling food waste*



*Source: [www.merton.gov.uk](http://www.merton.gov.uk)*

#### Recommendation 7

The Mayor should work with LWARB and London Councils to introduce mechanisms for a consistent, London-wide approach to communication about food waste by April 2016. Collaboration with networks like the Association of London Cleansing Officers (ALCO) or the London Recycling Officers Group (LROG) as well as specialist organisations like the Waste and Resources Action Programme (WRAP) and Keep Britain Tidy would be beneficial.

Boroughs should consider extending and diversifying their communication and engagement approach to inform residents more successfully about food waste recycling, for example, by:

- ensuring a recurring scheme of promotion including circulating correspondence to new residents;
- more regularly engaging with residents through dedicated waste advisors or local 'green champions'; and
- setting up school and community engagement schemes and aiming to offer food waste collection services to all schools.

## 5 Estates and blocks of flats

London urgently needs to improve its performance in recycling food waste from its high-density housing stock. 17 London boroughs offer food waste collections from flats, but the number of households reached by the service is often low. As a result, London is underperforming in the European context: in Berlin, Germany, for example, organic waste is collected from 80 per cent of all multi-occupancy buildings.

### Case study – door to door approach

In the city of Milan, despite high population density and high levels of multi-occupancy housing, over 90 kg per person of food waste is collected annually, compared with around 40 kg in London. An intensive door-to-door system was adopted in 2012 and accompanied by a high profile communication campaign. Through ongoing collection of waste data, the performance of the scheme is under constant surveillance.<sup>39</sup>

In principle, the options used by boroughs to collect dry waste could also be applied to food waste, but there are challenges in doing so. Boroughs currently use a range of methods, including kerbside collection, door-to-door collection, and collection from a central point on each floor and communal bins.<sup>40</sup> Food waste presents particular challenges. For example, people in flats often have no outdoor space for storage, making it difficult to clean bins properly. They often also have very small kitchens with little space for a food caddy.<sup>41</sup> To compound the problem, retrospective changes to the existing waste infrastructure on estates can be difficult, unpopular and costly.

### Housing design and planning

Given these challenges in existing blocks of flats and estates, it is crucial that new developments are designed to accommodate recycling. Elsewhere in the world, planning requirements to support recycling in blocks of flats have been utilised successfully. For example, in the city of Markham, Canada, developers of high-rise blocks are now required to install tri-sorter chutes with a colour-coded button system to include organics, recycling and waste.

Planning and design policies in London could take note of such schemes (see box overleaf). Recycling should be integrated into the design of new housing developments through greater early stage planning, retrofit consideration and support. Housing associations or local authorities should be required to reach higher standards of hygiene, as well as factoring recycling infrastructure into new builds.<sup>42</sup>

The GLA can set criteria for new housing developments, including the provision of waste storage facilities. Planning conditions can be used to ensure that these criteria are met. A number of other initiatives are available to promote more effective recycling in new developments.

- London Councils is currently investigating how to integrate the needs for waste storage and collection in planning enforcement practices in the boroughs.
- More specifically, the London Plan sets out that suitable waste and recycling storage facilities are required in all new developments.
- To support the London Plan, the Mayor's Housing Supplementary Planning Guidance 2012 provides standards to ensure that communal refuse and recycling containers, communal bin enclosures and refuse stores are accessible to all residents.
- Finally, the London Housing Design Guide provides strict criteria around housing design, including space standards for the provision of waste storage. Future versions of the guide could specify standards to enable better waste separation or composting of household waste.

### Case study – design guidance

The 2010 ADEPT guide 'Making space for waste' provides comprehensive information for developers and local authorities to help ensure waste and recycling are considered in the planning process. The guide notes that:

*"Inappropriate waste storage in new developments can impact on the appearance and environmental quality of the adjoining public realm. All design of waste storage facilities should be integrated into the initial design process for the whole public realm to give identity and enhance the sense of place. This coordination of design for all elements of the street scene will help to avoid clutter and confusion."*

It also highlights the importance of factoring in collection frequencies, residential storage, manual transport to and from collection points, and home composting.<sup>43</sup>

### Alternatives to communal collection schemes and retrofitting options

Residents of large housing estates often need to find innovative ways of managing food waste locally. Food waste does not always have to be collected at the kerbside and then sent to a large waste plant for treatment. Individual or communal storage may not be available, and a dedicated food waste collection may not be possible. Alternatives include:

- community composting;
- composting waste at home, which usually requires a garden or larger balcony;
- disposing via in-sink drainage systems, which can be costly to maintain and requires drainpipes to be at a certain gradient to avoid blockages;
- the installation or upgrading of chute systems; and
- disposing via an on-site small scale anaerobic digestion facilities with methane recovery in larger developments.

Some boroughs have supported estates in local composting schemes. Wandsworth, where food is not currently collected, promotes home composting, including kitchen and garden solutions, and provides discounts to residents for purchasing equipment such as home food waste digesters or balcony wormeries. In Hackney and Camden, although food waste collections are offered, a number of estates offer community composting schemes that work well. These are largely resident-led but receive support from the borough's waste team where needed. Compost produced is mostly used on the estates' gardens and balconies, but is also sold on to garden centres and marketed online.

*Committee Members visited different community composting schemes in Hackney*



Also in Camden, a micro anaerobic digester at Camley Street Nature Park generates heat and electricity from locally collected food waste. Further sites have been secured to form a wider network, but construction has not yet begun. The pilot has demonstrated that such a scheme has technological benefits and can support educational initiatives about environmental issues. Finding suitable space for installing micro AD is the main challenge.

There are other emerging and new technologies - similar to micro AD - that could be of interest. For example bio-thermic digesters come in different capacity sizes and can process organic waste very rapidly.<sup>44</sup> Some technological solutions for processing food waste in large-scale developments are more controversial.

- In-sink food waste disposers (FWD) are installed under the kitchen sink and shred food waste into pieces small enough to pass through the plumbing. Approximately 50 per cent of households in the USA have an FWD; in some cities more than 90 per cent have them. The Chartered Institution of Water and Environmental Management (CIWEM) is in favour of FWDs after conducting a range of international studies.<sup>45</sup> Thames Water, in contrast, remains strongly opposed to these units because they could cause sewer blockages.
- Chute schemes for food waste can be built into new developments and retrofitted in existing buildings. However, they are expensive to install and maintain: WRAP has recorded good dry recycling rates in existing schemes, but many chutes would need frequent and intensive cleaning.<sup>46</sup>

### Targeted communication and support programmes

The LWARB Flats Recycling Programme has played a key role in helping London boroughs to address low recycling performance in flats. The scheme allowed LWARB to fund boroughs flexibly; as a result, boroughs could improve their recycling services for flats to suit their existing local services and demographic.<sup>47</sup>

### Recommendation 8

Design for housing development should enable waste minimisation and separation:

For new housing developments, the Mayor and Boroughs should use their planning and housing investment powers to 'design out waste', for example by prioritising funding for schemes that meet the highest levels of waste minimisation, and by promoting best practice for separating and recycling food waste. The proposed 2015 review of the Mayor's Housing Supplementary Planning Guidance should consider these ideas and also make particular reference to the requirements for food waste separation and storage.

For existing housing developments, the Mayor and LWARB should provide additional financial and technical support to waste collection authorities and community groups to retrofit alternative waste solutions, such as composting schemes or the removal of single stream waste chutes.

## 6 Processing and recycling household food waste

London urgently needs new treatment facilities for organic waste. Technology offers opportunities, both economic and environmental, to meet the Mayor's targets for sustainable waste management. But land values, limited public funding and EU regulation make investment difficult.

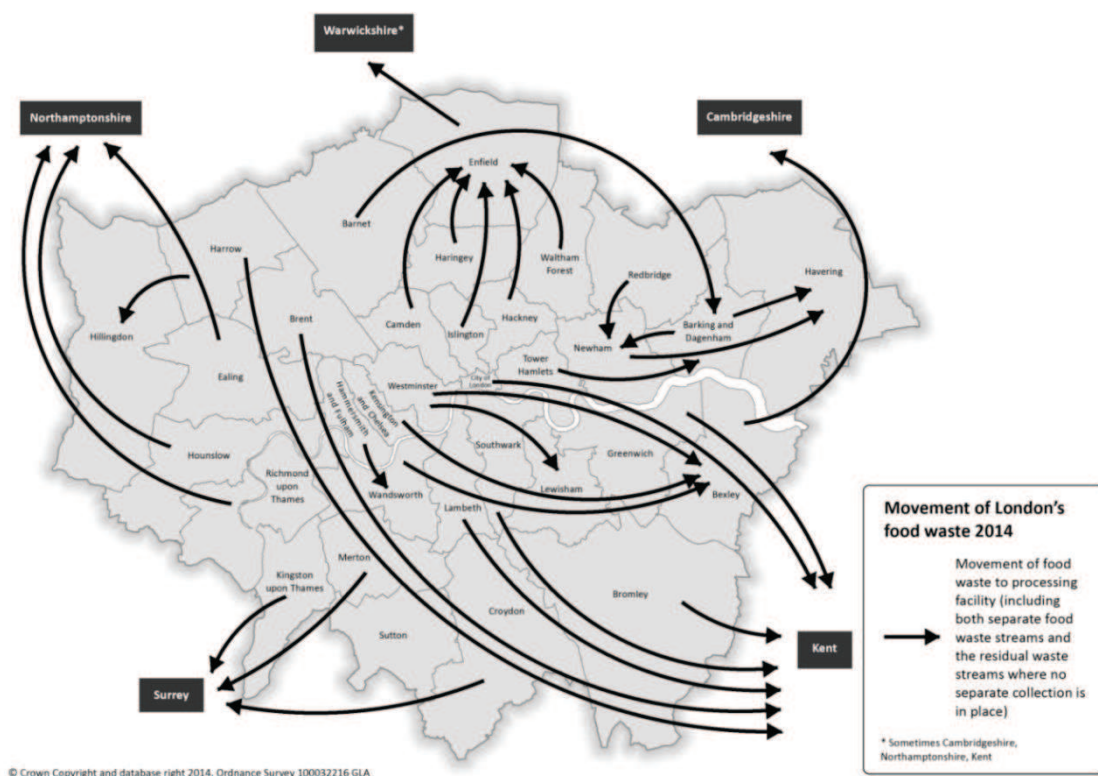
### Processing options

Technologies for managing food waste have varying degrees of environmental impact. The main processing technologies applicable to food waste include in-vessel composting (IVC), anaerobic digestion (AD), mechanical biological treatment (MBT), and energy from waste (EfW). Compared with other processing options, AD and IVC minimise environmental harm and can also recover useful materials (the Glossary at Appendix 2 provides more detail on these).

Currently, most of London's food waste is treated through IVC or AD. The Mayor has strategies addressing waste and climate change in London, and supports the development of food waste infrastructure. He is technology-neutral and supports technologies with the greatest carbon benefits and cost-savings, which generally means supporting AD.

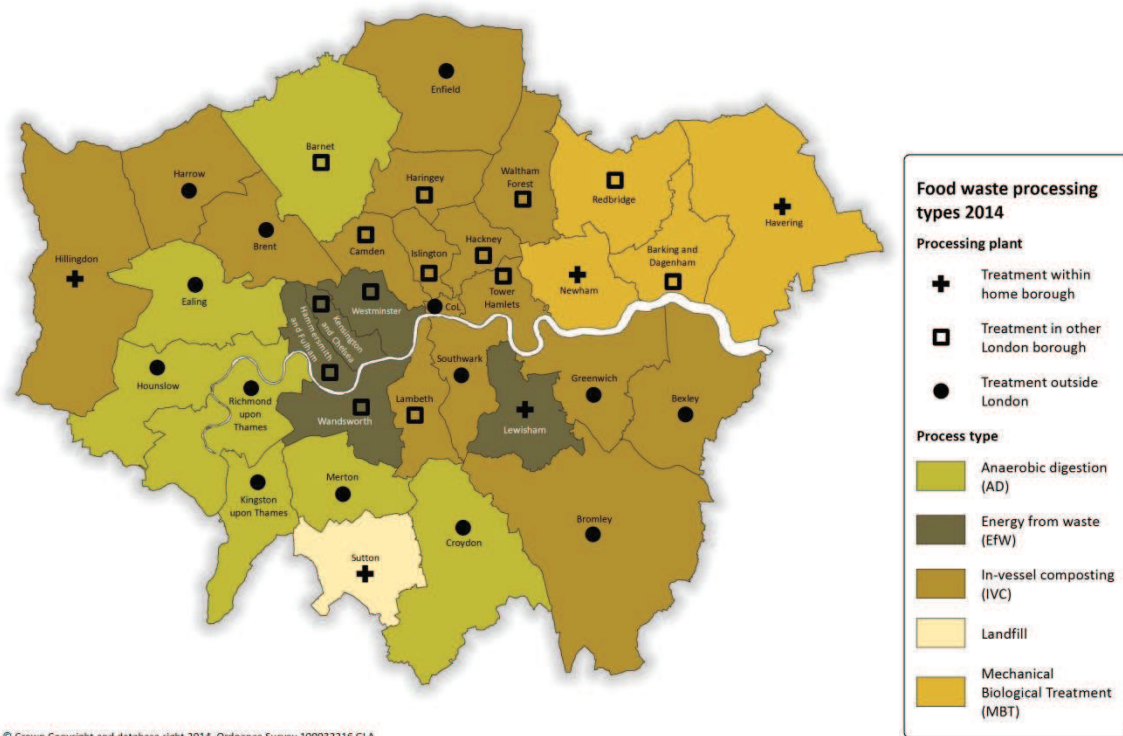
### Where and how is London's food waste treated?

*Map 6: Around half of London's food waste is transported outside London to be treated*



Less than half of London’s food waste is processed in London. The city currently lacks sufficient treatment facilities; as a result, the majority of waste authorities send their separated green waste – garden and food – to composting and AD facilities outside London, including in Kent, Surrey, Cambridgeshire, Warwickshire, and Northamptonshire. Some food waste is treated in the London Boroughs of Enfield, Hillingdon and Barking & Dagenham. Food waste that is not collected separately, but together with residual waste, is treated mostly within London’s boundaries, at EfW and MBT facilities in Wandsworth, Lewisham and Bexley. Some waste is landfilled at Sutton.

Map 7: Most of London’s food waste is treated through IVC or AD but less than half of that takes place in facilities located in London



### Developing food waste infrastructure in London

London currently requires facilities to process about one million extra tonnes of food and green waste.<sup>48</sup> Based on anticipated requirements and known projects in development, LWARB has identified regional “capacity gaps” for municipal waste. SITA UK estimates that, for every one million tonnes of waste diverted from landfill, 10 to 20 new treatment facilities will be needed.<sup>49</sup> Future requirements to collect more waste separately could increase this need still further, although campaigns to prevent and reduce food waste at source may mitigate this increase.

At present, only one plant in London provides dedicated organic waste treatment. TEG’s facility, situated on the GLA-owned London Sustainable Industries Park (LSIP), near Dagenham, provides both IVC and AD. There are currently two other IVC facilities in London. Planning permissions have been granted for a second AD facility for LSIP and a third in Sutton, but these have yet to be built.

The Mayor is encouraging the development of further sustainable waste treatment facilities in London. The London Plan sets a target date for boroughs to achieve “zero biodegradable or recyclable waste to landfill” and “managing the equivalent of 100 per cent of London’s waste within London”. Draft Further Alterations, published in January 2014, propose to bring forward the target date from 2031 to 2026.

It is hard to see where funding can be found to develop new treatment facilities in London. High land values are likely to dissuade commercial waste treatment operators from investing in projects within Greater London’s boundaries. There have been calls for public funding to build plants, for example from LWARB, possibly with support from the GLA in terms of land provision or planning consent. However, given the extent of the capacity gap and the capital cost associated with infrastructure development, LWARB will not have the funds to meet the entire capacity gap requirements of London’s waste infrastructure by 2031.

It is likely that other solutions will have to be found to meet the Mayor’s targets. The LSIP presents an opportunity for increasing London’s capacity to handle bio-waste but there is also potential for more decentralised, community-level facilities.

### **Recommendation 9**

In developing future asset management strategies, the Mayor should consider how he can utilise GLA land holdings to enable waste infrastructure and sustainable development, providing small and commercial-scale anaerobic digestion plants on these sites.

### **Co-treating sewage sludge and food waste**

The water industry is interested in co-digesting food waste with sewage sludge in their existing AD plants. These plants currently have a small amount of spare capacity (about 10 to 20 per cent). Thames Water has recognised the commercial benefits of co-digestion, particularly in generating energy (although they also point out that co-digestion makes treatment more complicated).<sup>50</sup> Involving the water industry could also create more competition in the market for organic waste management, encouraging other AD projects to come forward.<sup>51</sup>

However, using sewage treatment facilities would require EU regulations to change. Under these regulations, sewage sludge is currently excluded from the feedstocks allowed in order for a digestate to meet End of Waste criteria. Consequently, mixed digestion would cause all digestate to be treated as waste, rather than a useable recycled product. Work to reform these regulations appears to have stalled.

### **Recommendation 10**

The Government should press for EU regulations to be changed, namely the Sludge Directive, to allow anaerobic digestion of sewage sludge and organic waste such as food waste alongside each other (co-treatment) and the Mayor should support this call.



## 7 Investing in treatment plants: forging greater collaboration

The London Plan's 2026 targets create significant commercial opportunities for the waste management industry. To realise these opportunities, however, collection and treatment systems must develop in tandem: developers need consistent long-term plans, and boroughs need the assurance that facilities are available to process any food waste that they collect.

Long-term direction and security are, therefore, key to decision making and delivery. If boroughs are to meet their targets – zero biodegradable waste going to landfill; all London waste to be managed within London's boundaries – then policy makers need to make wise strategic decisions to create the right amount and mix of infrastructure.

The needs of local authorities and the waste industry are not always aligned. Boroughs may hesitate to instigate new food waste collections because of a lack of treatment facilities;<sup>52</sup> investors may hesitate to commit to developing such plants because the economic case for them is shaky. There can also be uncertainty over how successful waste prevention measures will be – a greatly reduced waste stream could result in lower revenues for the industry,

The London Borough of Bexley believes that: *“there is often a ‘chicken and egg’ stalemate in regards to new processes. The waste industry will not build a plant unless a material stream is collected and waste authorities will not collect unless there is a plant to process it. They will also be nervous of newer less proven technology.”*

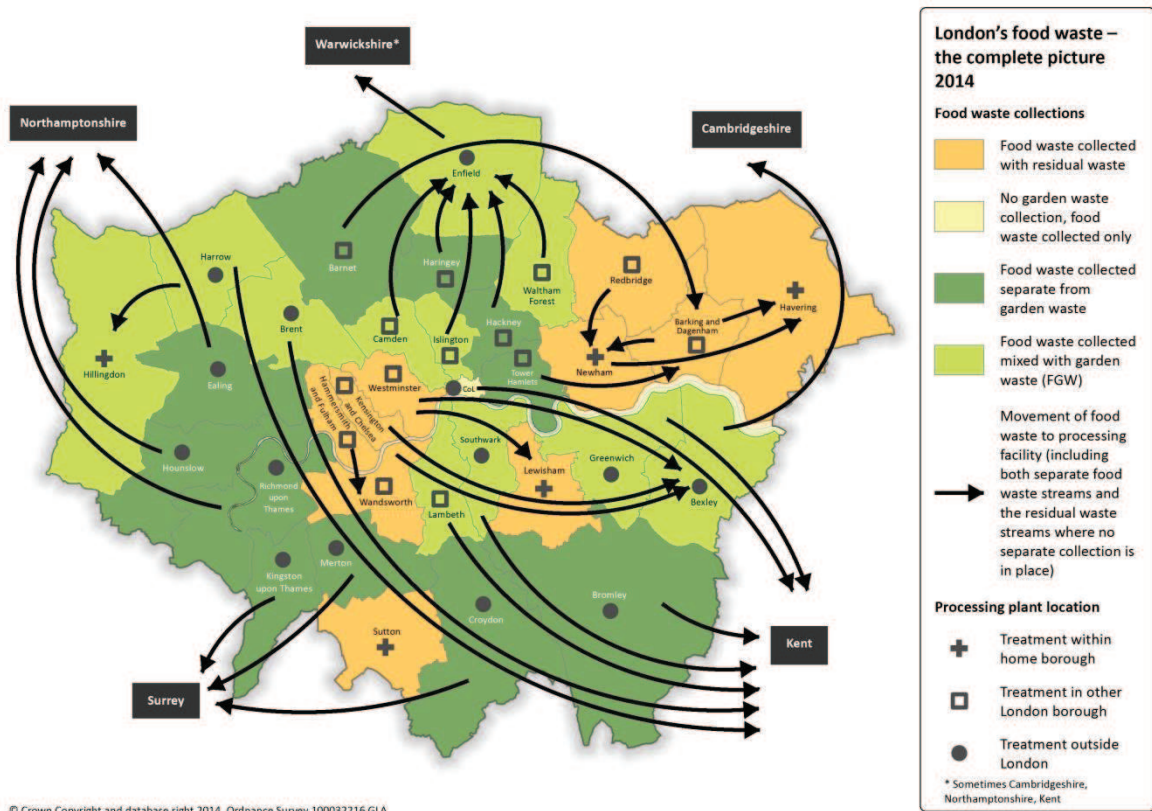
There is a perception within the waste industry that London is a complicated place to do business. Markets for compost and digestate (which is mostly animal feed) are more limited than in rural areas, and can be further from the treatment plant. Because local authorities typically focus on short procurement terms, developers are unlikely to be able to offer competitive prices, let alone unlock sources of funding. Potential funders will also want some guarantee that facilities will produce a decent amount of good-quality feedstock.

Stakeholders within the waste industry are calling for greater leadership and more coordinated policies.<sup>53</sup> Producers and consumers, investors and managers, have been reported to be *“crying out for some time now for greater ambition, consistency and coordination on waste [and] resource policy”*.

There is clearly a need for a greater exchange of knowledge and understanding of need and demand, both between authorities and between the public and private sectors. Bexley has suggested, as an initial practical step, that groups of authorities should consider committing to an organic collection scheme and tendering collectively for a new shared treatment facility.

More widely, both sides would benefit from a stronger brokerage role taken up by LWARB. LWARB could expand and supplement its current role in funding and supporting the development of waste infrastructure in and near London. All those involved in strategic planning for, and investment in, waste treatment facilities would have a single point of reference for information, advice and support.

Map 8: London's food waste – the complete picture



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### Recommendation 11

LWARB should expand its brokerage role to promote mutual interests between London's waste authorities and the waste industry. This could include hosting or facilitating a regular "forum of exchange", providing technical expertise where needed, or assisting with developing suitable business models.

# Appendix 1 Recommendations

## Recommendation 1

Following the final local government finance settlement for 2015/16, every London borough should allocate available resources to include separate food waste collections in their waste management regimes, across all property types.

## Recommendation 2

The London Waste and Recycling Board (LWARB), in partnership with the GLA, Boroughs and the Waste and Resources Action Programme (WRAP) should improve data collection on food waste so that better projections of need and demand can be made, and the impact of food waste on London's overall recycling and landfill targets can be assessed. Annual food waste recycling statistics for local authorities should be made available on the London Data Store.

## Recommendation 3

The Mayor should join London Councils in its efforts to secure additional resources from the Government to develop separate food and organic waste collection services.

## Recommendation 4

Alongside government funding the Mayor should make available from his own resources ongoing funding for waste reduction and recycling programmes such as the Waste and Resources Action Programme (WRAP) or Recycle for London.

Should the London Waste and Recycling Board's (LWARB) self-financing capabilities not be sufficiently achieved, the Mayor should make a long-term commitment to protect LWARB's budget, thereby enabling LWARB to continue its programmes to support boroughs and successfully embed food waste recycling in their waste management strategies. This could be achieved, for example, by including funding for LWARB in the GLA budget plans through to 2018/19, or by entering into contracts with LWARB for funding in return for delivery.

## Recommendation 5

In line with the London Finance Commission's calls that London government should be allowed to make additional self-determined investments in its own infrastructure, the Mayor should lobby the Government for the devolution of landfill tax to London.

## Recommendation 6

Boroughs should consider introducing specific measures and incentives to increase resident participation in separate food waste recycling collections, particularly in flats and estates, thereby reducing the amount of food waste in the residual waste stream.

## Recommendation 7

The Mayor should work with LWARB and London Councils to introduce mechanisms for a consistent, London-wide approach to communication about food waste by April 2016. Collaboration with networks like the Association of London Cleansing Officers (ALCO) or

the London Recycling Officers Group (LROG) as well as specialist organisations like the Waste and Resources Action Programme (WRAP) and Keep Britain Tidy would be beneficial.

Boroughs should consider extending and diversifying their communication and engagement approach to inform residents more successfully about food waste recycling, for example, by:

- ensuring a recurring scheme of promotion including circulating correspondence to new residents;
- more regularly engaging with residents through dedicated waste advisors or local 'green champions'; and
- setting up school and community engagement schemes and aiming to offer food waste collection services to all schools.

### **Recommendation 8**

Design for housing development should enable waste minimisation and separation: For new housing developments, the Mayor and Boroughs should use their planning and housing investment powers to 'design out waste', for example by prioritising funding for schemes that meet the highest levels of waste minimisation, and by promoting best practice for separating and recycling food waste. The proposed 2015 review of the Mayor's Housing Supplementary Planning Guidance should consider these ideas and also make particular reference to the requirements for food waste separation and storage. For existing housing developments, the Mayor and LWARB should provide additional financial and technical support to waste collection authorities and community groups to retrofit alternative waste solutions, such as composting schemes or the removal of single stream waste chutes.

### **Recommendation 9**

In developing future asset management strategies, the Mayor should consider how he can utilise GLA land holdings to enable waste infrastructure and sustainable development, providing small and commercial-scale anaerobic digestion plants on these sites.

### **Recommendation 10**

The Government should press for EU regulations to be changed, namely the Sludge Directive, to allow anaerobic digestion of sewage sludge and organic waste such as food waste alongside each other (co-treatment) and the Mayor should support this call.

### **Recommendation 11**

LWARB should expand its brokerage role to promote mutual interests between London's waste authorities and the waste industry. This could include hosting or facilitating a regular "forum of exchange", providing technical expertise where needed, or assisting with developing suitable business models.

## Appendix 2 Glossary

**Anaerobic Digestion (AD)** – a process by which microorganisms break down organic matter, in the absence of oxygen, into biogas (a mixture of carbon dioxide (CO<sub>2</sub>) and methane) and digestate (a nitrogen-rich fertiliser). The biogas can be used directly for heat or Combined Heat and Power (CHP), or kept as fuel. This has long been used in the treatment of sewage and farm slurries and is now also being used for food waste.

**Bio-waste** includes garden and park waste, and food and kitchen waste from households and commercial premises. It should not be confused with the wider term biodegradable waste which also includes other organic materials such as wood, paper, cardboard or sewage sludge.

**CO<sub>2</sub> equivalent (CO<sub>2</sub>e)** – a measure of the warming effect of mixtures of greenhouse gases, expressed as a standard concentration of CO<sub>2</sub>.

**Digestate** – a nutrient-rich substance produced by anaerobic digestion that can be used as a fertiliser. It can be used straight from the digester, in which case it is called whole digestate. Alternatively it can be separated into liquor and fibre. Digestate is not compost, although it has some similar characteristics. Compost is produced by aerobic micro-organisms, meaning they require oxygen from the air.

**Energy from Waste (EfW)** – the process of recovering the energy embedded in material through a variety of processes. Traditionally this has meant incineration of unsorted household and similar waste that remains after waste prevention and recycling to generate energy in the form of steam, electricity or hot water, but has expanded to include anaerobic digestion (AD), mechanical and biological treatment (MBT) and a variety of other processes.

**Greenhouse Gas (GHG)** – in the atmosphere, GHGs such as CO<sub>2</sub> trap sunlight as heat, thus contributing to the greenhouse effect which keeps the Earth's surface warmer than it would otherwise be.

**In-vessel composting (IVC)** can compost organic waste such as meat and fish as well as other food and garden waste which is loaded into vessels (tunnels).

**Mechanical and Biological Treatment (MBT)** uses a combination of mechanical and biological processes to separate and transform the residual waste into several outputs. Some of these are then recovered or recycled, but a fraction will still go to landfill.

**Municipal waste** is everyday waste from households and can also include other waste which, because of its nature or composition, is similar to waste from households.

**Recovery** of waste means obtaining value through recycling, composting, anaerobic digestion (AD), mechanical-biological treatment (MBT) or energy-from-waste production (EfW).

**Residual waste** – the remainder of collection after recycling or food waste has been removed.

**Waste and Resources Action Programme (WRAP)** – the government’s main delivery body which works to reduce waste, increase recycling and develop markets for recycled and recovered products and materials.

**Windrow composting** is used for processing garden waste, such as grass cuttings, pruning and leaves (excluding catering and animal waste) in an open air environment or within where the material can break down in the presence of oxygen. This is similar to home composting but on a larger scale.

## Appendix 3 Orders and translations

### How to order

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#### Chinese

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Email 与我们联系。

#### Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang  
tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện  
thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

#### Greek

*Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα  
σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί  
μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.*

#### Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini  
okumak isterseniz, lütfen yukarıdaki telefon  
numarasını arayın, veya posta ya da e-posta  
adresi aracılığıyla bizimle temasa geçin.

#### Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ  
ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ  
ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

#### Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में  
चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये  
गये डाक पते या ई मेल पते पर हम से संपर्क करें।

#### Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান,  
তাহলে দয়া করে ফো করবেন অথবা উল্লিখিত ডাক ঠিকানায় বা  
ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

#### Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں  
درکار ہو تو، براہ کرم نمبر پر فون کریں  
یا مذکورہ بالا ڈاک کے پتے یا ای میل  
پتے پر ہم سے رابطہ کریں۔

#### Arabic

الوصول على ملخص لهذا المستند بلغتك،  
فارجاء الاتصال برقم الهاتف أو الاتصال على  
العنوان البريدي العادي أو عنوان البريدي  
الالكتروني أعلاه.

#### Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં  
જોઈતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો  
અથવા ઉપર આપેલ ટપાલ અથવા ઈ-મેઇલ સરનામા  
પર અમારો સંપર્ક કરો.

## Appendix 4 Endnotes

- 
- <sup>1</sup> [WRAP \(2013\): Household Food and Drink Waste in the United Kingdom 2012. Final Report](#)
  - <sup>2</sup> [United Nations Food and Agriculture Organization \(FAO\) \(2013\): Food wastage footprint. Impacts on natural resources. Summary Report](#)
  - <sup>3</sup> [European Commission – Moving towards a circular economy](#)
  - <sup>4</sup> [Edie.net website \(2014\): European Commission scraps Circular Economy Package, 'more ambitious' proposal awaits](#)
  - <sup>5</sup> [Defra \(2011\): Government Review of Waste Policy in England 2011. Action Plan](#)
  - <sup>6</sup> [London Councils \(2013\): Waste management in London - Key challenges](#)
  - <sup>7</sup> [WRAP \(2013\): West London food waste campaign](#)
  - <sup>8</sup> What are greenhouse gas conversion factors? In order to report the greenhouse gas emissions associated with an organisation's activities, users must convert 'activity data' such as distance travelled, litres of fuel used or tonnes of waste disposed into carbon emissions.
  - <sup>9</sup> [London Datastore - Household waste recycling rates 2004-2014](#)
  - <sup>10</sup> [EEA \(2013\): MSW Management in the UK](#)
  - <sup>11</sup> *ibid*
  - <sup>12</sup> [London Waste Map – London's municipal waste management arrangements](#)
  - <sup>13</sup> [Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue; with Background report by BritainThinks](#)
  - <sup>14</sup> [ESA \(2014\): Biowaste in a Circular Economy](#)
  - <sup>15</sup> [Defra \(2012\): 'Progress Report' on the delivery of commitments from the Government's 'Review of Waste Policy in England'](#)
  - <sup>16</sup> [Letter to stakeholders from Dan Rogerson Parliamentary Under Secretary for Water, Forestry, Rural Affairs and Resource Management, Defra, 6 November 2013](#)
  - <sup>17</sup> [House of Lords European Union Committee \(2014\): Counting the Cost of Food Waste: EU Food Waste Prevention](#)
  - <sup>18</sup> [Defra \(2010\): Enhancing participation in kitchen waste collections: International review of overseas experience; Submission from London Borough of Wandsworth](#)
  - <sup>19</sup> [Waste Management World website \(no date\): The biowaste directive](#)
  - <sup>20</sup> [Enhancing participation in kitchen waste collection. Defra Waste & Resources Evidence programme WR 2009 – Final Project Report](#)
  - <sup>21</sup> [LGA \(2013\): Wealth from waste](#)
  - <sup>22</sup> [House of Commons Environment, Food and Rural Affairs Committee \(2014\): Waste management in England](#)
  - <sup>23</sup> [London Councils \(2013\): Waste management in London - Key challenges](#)
  - <sup>24</sup> [Submission from London Councils; Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue](#)
  - <sup>25</sup> [WRAP \(2009\): Evaluation of separate food waste collections](#)
  - <sup>26</sup> [WRAP \(2008\): The food we waste](#)
  - <sup>27</sup> [Environment Committee meeting, July 2014](#)
  - <sup>28</sup> *ibid*
  - <sup>29</sup> [Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue; with Background report by BritainThinks](#)



- 
- <sup>30</sup> Research undertaken by Defra between 2006 and 2009; [Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue](#)
- <sup>31</sup> [Enhancing participation in kitchen waste collection. Defra Waste & Resources Evidence programme WR 2009 – Final Project Report](#)
- <sup>32</sup> [EEA \(2013\): MSW Management in the UK](#)
- <sup>33</sup> [London Borough of Bexley website \(no date\): green points scheme](#)
- <sup>34</sup> [Defra \(2010\): Enhancing participation in kitchen waste collections: International review of overseas experience](#)
- <sup>35</sup> [Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue](#)
- <sup>36</sup> A range of sources, for example [Wrap \(2013\): Impact of the West London LFHW campaign](#) or [Enhancing participation in kitchen waste collection. Defra Waste & Resources Evidence programme WR 2009 – Final Project Report](#)
- <sup>37</sup> [London SE1 Community website \(2014\): Bermondsey primary school pupils learn to recycle food waste](#)
- <sup>38</sup> [London Borough of Merton website \(2014\): Food waste collection for every school in the borough](#)
- <sup>39</sup> [LinkedIn website \(no date\): Food waste collection in Milan; Presentation from Dr Marco Ricci, Environment Committee meeting, July 2014](#)
- <sup>40</sup> [Brent Council \(2009\): Increasing participation in Recycling in Flats](#)
- <sup>41</sup> [Enhancing participation in kitchen waste collection. Defra Waste & Resources Evidence programme WR 2009 – Final Project Report](#)
- <sup>42</sup> [Sita/Keep Britain Tidy \(2014\): The Ur\[bin\] Issue](#)
- <sup>43</sup> [Association of Directors of Environment, Economy, Planning and Transport \(ADEPT\) \(2010\): Making Space For Waste](#)
- <sup>44</sup> [Resource efficient business website \(2014\): New bio-thermic digester technology could help eliminate organic waste to landfill](#)
- <sup>45</sup> [CIWEM Policy Position Statement on Food Waste Disposers](#)
- <sup>46</sup> [Brent Council \(2009\): Increasing participation in Recycling in Flats; Wrap – Flats chute recycling schemes](#)
- <sup>47</sup> [LWARB \(2013\): Evaluation Report Flats recycling programme](#)
- <sup>48</sup> [Imperial College London \(2014\): Waste Infrastructure Requirements for England](#)
- <sup>49</sup> [Sita \(2014\): Mind the Gap. UK residual waste infrastructure capacity requirements, 2015 to 2025](#)
- <sup>50</sup> [Thames Water Utilities Ltd \(2008\): Consultation on Thames Water’s Draft Strategic Proposals for Sludge Management](#)
- <sup>51</sup> [Office of Fair Trading \(2011\): Organic waste. An OFT market study](#)
- <sup>52</sup> [Defra \(2010\): Enhancing participation in kitchen waste collections – Technical report](#)
- <sup>53</sup> [House of Commons Environment, Food and Rural Affairs Committee \(2014\): Waste management in England; BusinessGreen website \(2014\): MPs slam Defra’s decision to bin waste management policies](#)

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# Subject: Environment Committee Work Programme

**Report to: Environment Committee**

**Report of: Executive Director of Secretariat**

**Date: 3 March 2015**

**This report will be considered in public**

## 1. Summary

- 1.1 This report covers the process for completing the Committee's 2014/15 work programme and preparing for the 2015/16 work programme.

## 2. Recommendations

- 2.1 **That the Committee notes its work programme.**
- 2.2 **That the Committee delegates authority to the Chair, in consultation with party Group Lead Members, to agree the report on severe weather risks and adaptations.**
- 2.3 **That the Committee delegates authority to the Chair, in consultation with party Group Lead Members, to agree the report on diesel emissions.**
- 2.4 **That the Committee delegates authority to the Chair, in consultation with party Group Lead Members, to agree any necessary response to a written briefing from GLA officers on plans to consult on changes to the Local Air Quality Management framework.**
- 2.5 **That the Committee notes any oral update from the Chair on initial proposals for the 2015/16 work programme, and delegates authority to the Chair, in consultation with party Group Lead Members, to agree the topic for the June 2015 meeting of the Committee, subject to confirmation at the London Assembly's Annual Meeting scheduled for 13 May 2015.**

## 3. Background

- 3.1 The Committee receives a report monitoring the progress of its work programme at each meeting.

## 4. Issues for Consideration

### Forthcoming Meetings and Other Business

- 4.1 The Committee has no further meetings scheduled in the 2014/15 Assembly year. The current meeting will discuss an update to the Mayor's Biodiversity Strategy – further information can be found at Agenda Item 5.
- 4.2 Further to the Committee's meetings of May and October 2014 and February 2015, a report is in preparation on the risks of severe weather and how London can adapt to them. Members are being consulted on the draft. To enable publication and formal agreement of the report without undue delay, Members are recommended to delegate authority to the Chair, in consultation with party Group Lead Members, to agree this report.
- 4.3 Further to the Committee's meetings of November and December 2014, and the Committee's response to the consultation on the proposed Ultra Low Emission Zone, a report is also in preparation on air pollution from diesel emissions. Members will also be consulted on this draft report. Subject to other Assembly business and the restrictions on publicity in the pre-election period, it is also hoped to publish this report shortly and so Members are recommended to delegate authority to the Chair, in consultation with party Group Lead Members, to agree this report.
- 4.4 It is anticipated that there will be a GLA consultation in summer 2015 on the Local Air Quality Management (LAQM) framework. Members of the Committee have been offered a written briefing on this work, and will have an opportunity to give comments on it, sometime after this meeting but before the Committee's first meeting of 2015/16. Therefore, the Committee is recommended to delegate authority to the Chair to agree a response to the briefing on LAQM.
- 4.5 Members have expressed an interest in visiting the London Array wind farm, and at its meeting on the 9 July 2014, the Committee delegated authority to the Chair to make arrangements for any site visit under the 2014/15 work programme.

## 5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

## 6. Financial Implications

- 6.1 There are no financial implications arising from this report.

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### List of appendices to this report:

None

<b>Local Government (Access to Information) Act 1985</b>
List of Background Papers: None
Contact Officer: Ian Williamson, Scrutiny Manager
Telephone: 020 7983 6541
E-mail: <a href="mailto:scrutiny@london.gov.uk">scrutiny@london.gov.uk</a>