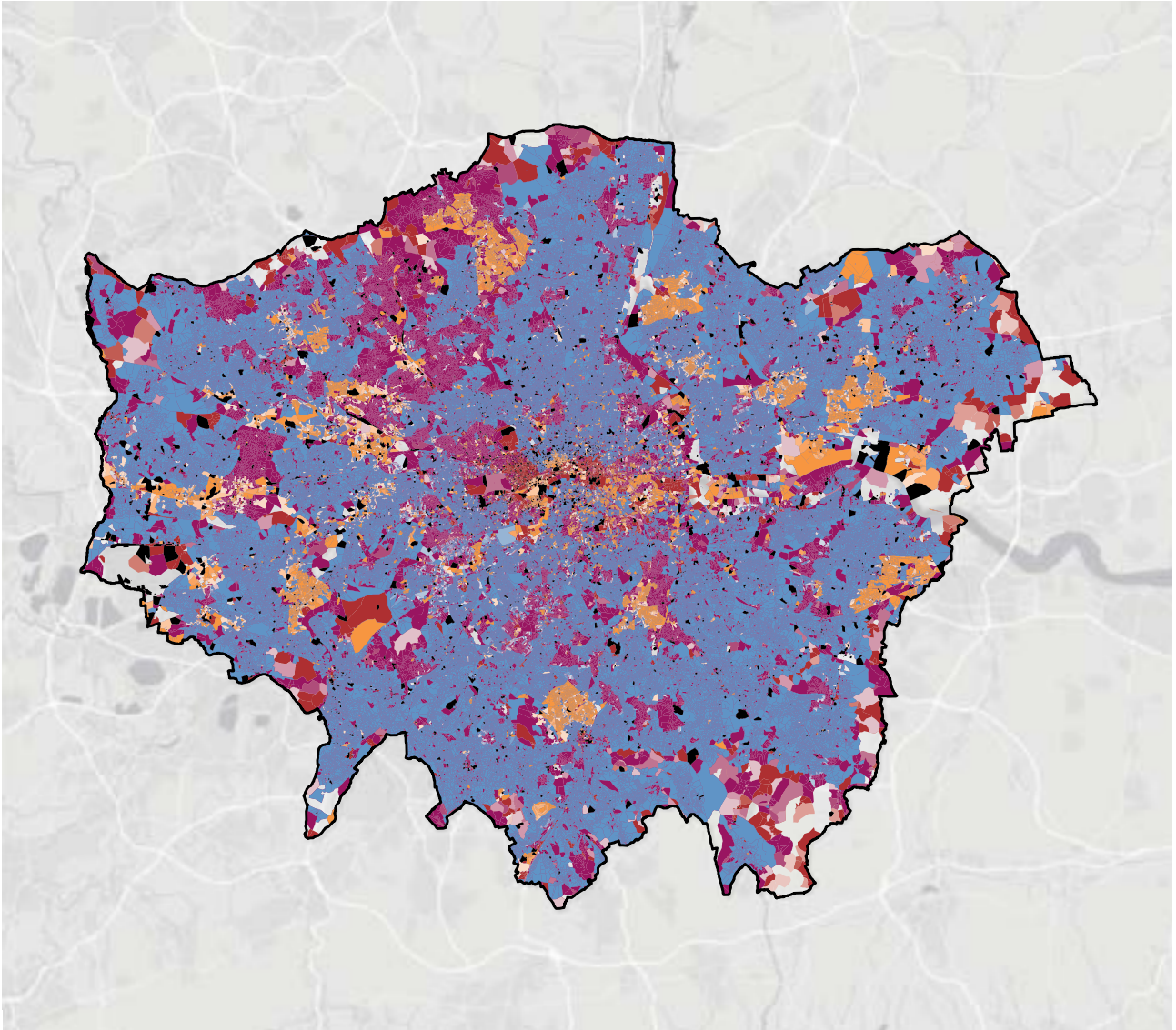


Figure 9.5 - Broadband coverage May 2019



Broadband coverage as of May 2019

Availability (% Premises)

Full Fibre

1 - 20

21 - 40

41 - 60

61 - 80

81 - 100

Ultra-fast
Broadband

1 - 20

21 - 40

41 - 60

61 - 80

81 - 100

Super-fast
Broadband

1 - 20

21 - 40

41 - 60

61 - 80

81 - 100

30Mbit/s
Unavailability

1 - 20

21 - 40

41 - 60

61 - 80

81 - 100

● No Data Available
(Postcode areas)

Source: Ofcom

Contains OS data ©
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database right (2019)

Note for Figure 9.5: For the most up to date broadband coverage and information on broadband connection types please see <https://www.london.gov.uk/what-we-do/business-and-economy/supporting-londons-sectors/connectivity>

Policy SI 7 Reducing waste and supporting the circular economy

- A Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:
- 1) promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
 - 2) encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products
 - 3) ensure that there is zero biodegradable or recyclable waste to landfill by 2026
 - 4) meet or exceed the municipal waste recycling target of 65 per cent by 2030¹⁶³
 - 5) meet or exceed the targets for each of the following waste and material streams:
 - a) construction and demolition – 95 per cent reuse/recycling/recovery
 - b) excavation – 95 per cent beneficial use¹⁶⁴
 - 6) design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

¹⁶³ Based on the EU definition of municipal waste being household waste and other waste similar in composition to household waste. This includes business waste collected by local authorities and by the private sector.

¹⁶⁴ All inert excavation waste should be used for beneficial uses.



- B Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:
- 1) how all materials arising from demolition and remediation works will be re-used and/or recycled
 - 2) how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life
 - 3) opportunities for managing as much waste as possible on site
 - 4) adequate and easily accessible storage space and collection systems to support recycling and re-use
 - 5) how much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy
 - 6) how performance will be monitored and reported.
- C Development Plans that apply circular economy principles and set local lower thresholds for the application of Circular Economy Statements for development proposals are supported.

- 9.7.1 Waste is defined as anything that is discarded. A **circular economy** is one where materials are retained in use at their highest value for as long as possible and are then re-used or recycled, leaving a minimum of residual waste. London should move to a more circular economy as this will save resources, increase the resource efficiency of London's businesses, and help to reduce carbon emissions. The successful implementation of circular economy principles will help to reduce the volume of waste that London produces and has to manage. A key way of achieving this will be through incorporating circular economy principles into the design of developments (see also [Policy D3 Optimising site capacity through the design-led approach](#)) as well as through Circular Economy Statements for referable applications.
- 9.7.2 The adoption of circular economy principles for referable applications means creating a built environment where buildings are designed for **adaptation, reconstruction and deconstruction**. This is to extend the useful life of buildings and allow for the salvage of components and materials for reuse or recycling. Un-used or discarded materials should be brought back to an equal or



comparable level of quality and value and reprocessed for their original purpose (e.g. recycling glass back into glass, instead of into aggregate).

- 9.7.3 To assist with the introduction of Circular Economy principles, the Mayor will be providing further guidance on **Circular Economy Statements**. Circular Economy Statements are intended to cover the whole life cycle of development. This will apply to referable schemes and be encouraged for other major infrastructure projects within London. Boroughs are encouraged to set lower local thresholds through Development Plans.
- 9.7.4 In 2015¹⁶⁵ London produced just under 18 million tonnes (mt) of **waste**, comprising:
- 3.1mt household waste – 17 per cent
 - 5.0mt commercial/industrial waste – 28 per cent
 - 9.7mt construction, demolition and excavation waste – 54 per cent
- 9.7.5 Modelling¹⁶⁶ suggests that if London achieves the Mayor’s reduction and recycling targets, it will have sufficient **Energy from Waste** capacity to manage London’s non-recyclable municipal waste, once the new Edmonton and Beddington Lane facilities are operational.
- 9.7.6 The London Environment Strategy sets out a pathway to achieving a municipal recycling target of 65 per cent by 2030 and outlines the Mayor’s approach to **municipal waste** management in detail. This includes London achieving a 50 per cent reduction in food waste and associated packaging waste per person by 2030, and London local authorities needing to provide a minimum level of recycling service, including separate food waste, to residents by 2020. To achieve these recycling targets, it will be important that recycling, storage and collection systems in new developments are appropriately designed. Further detail on how developments should do this is set out in guidance.
- 9.7.7 Re-use and recycling rates for **construction, demolition and excavation waste** and material (CD&E) in London is estimated between 50 – 60 per cent¹⁶⁷ for 2015 with some large construction projects including the Olympic Park achieving 85 – 95 per cent recovery rates. The targets for CD&E waste and material are already

¹⁶⁵ <https://www.london.gov.uk/what-we-do/planning/london-plan/london-plan-technical-and-research-reports>

¹⁶⁶ See objective 7.4 London Environment Strategy, May 2018

¹⁶⁷ Based on CD&E waste data interrogator data 2015. Estimate only as actual CD&E waste performance data is not available and not a requirement to report. Actual performance likely to be higher as waste reused or recycled on-site is not reported through the waste data interrogator.



being set on some projects, but better data (particularly relating to reuse on site) is needed to inform performance. The adoption of circular economy principles in referable applications (and promoted in Local Plans) is expected to help London achieve the CD&E waste and material recovery targets early in the Plan period.

- 9.7.8 The movement and management of household, commercial and industrial, and construction, demolition and excavation waste will be monitored in collaboration with other stakeholders through available data sets (including the Environment Agency's Waste Data Interrogator tool and WasteDataFlow) and reporting against commitments in Circular Economy Statements. This will inform reporting on and **monitoring** of the achievement of the targets set out in this policy, Part A.
- 9.7.9 Part A4 reflects recent **changes to the regulatory regime** that mean that the particular characteristics of excavation waste make it difficult to recover. The Mayor will continue to work with stakeholders to understand the implications of this regulatory change and to promote its beneficial use and limit the amount sent to landfill. The best environmental option practicable for the management of excavation material should be used. This could, for example, include using the material as a resource within the construction of the proposed development, or in other local construction projects, or using the material in habitat creation, flood defences or landfill restoration. In line with circular economy principles, the management of excavation waste should be focused on-site or within local projects.
- 9.7.10 When it is intended to send **waste to landfill** it will be important to show evidence that the receiving facility has the capacity to deal with waste over the lifetime of the development. This information should be made available to the relevant waste planning authority to help plan for future needs.

Policy SI 8 Waste capacity and net waste self-sufficiency

- A In order to manage London's waste sustainably:
- 1) the equivalent of 100 per cent of London's waste should be managed within London (i.e. net self-sufficiency) by 2026
 - 2) existing waste management sites should be safeguarded (see [Policy SI 9 Safeguarded waste sites](#))
 - 3) the waste management capacity of existing sites should be optimised
 - 4) new waste management sites should be provided where required
 - 5) environmental, social and economic benefits from waste and secondary materials management should be created.
- B Development Plans should:
- 1) plan for identified waste needs
 - 2) identify how waste will be reduced, in line with the principles of the Circular Economy and how remaining quantum of waste will be managed
 - 3) allocate sufficient sites, identify suitable areas, and identify waste management facilities to provide the capacity to manage the apportioned tonnages of waste, as set out in Table 9.2 – boroughs are encouraged to collaborate by pooling their apportionment requirements
 - 4) identify the following as suitable locations to manage borough waste apportionments:
 - a) existing waste and secondary material sites/land, particularly waste transfer facilities, with a view to maximising their capacity
 - b) Strategic Industrial Locations and Locally Significant Industrial Sites
 - c) safeguarded wharves with an existing or future potential for waste and secondary material management.
- C Mayoral Development Corporations must cooperate with host boroughs to meet identified waste needs.
- D Development proposals for materials and waste management sites are encouraged where they:
- 1) deliver a range of complementary waste management and secondary material processing facilities on a single site



- 2) support prolonged product life and secondary repair, refurbishment and remanufacture of materials and assets
 - 3) contribute towards renewable energy generation, especially renewable gas technologies from organic/biomass waste, and/or
 - 4) are linked to low emission combined heat and power and/or combined cooling heat and power (CHP is only acceptable where it will enable the delivery or extension of an area-wide heat network consistent with Policy SI 3 Energy infrastructure Part D1c)
- E Developments proposals for new waste sites or to increase the capacity of existing sites should be evaluated against the following criteria:
- 1) the nature of the activity, its scale and location
 - 2) effective implementation of the waste hierarchy and its contribution to London's circular economy
 - 3) achieving a positive carbon outcome (i.e. re-using and recycling high carbon content materials) resulting in significant greenhouse gas savings – all facilities generating energy from waste will need to meet, or demonstrate that steps are in place to meet, a minimum performance of 400g of CO₂ equivalent per kilowatt hour of electricity produced
 - 4) the impact on amenity in surrounding areas (including but not limited to noise, odours, air quality and visual impact) – where a site is likely to produce significant air quality, dust or noise impacts, it should be fully enclosed
 - 5) the transport and environmental impacts of all vehicle movements related to the proposal – the use of renewable fuels from waste sources and the use of rail and waterway networks to transport waste should be supported.
- F When planning for new waste sites or to increase the capacity at existing sites the following should be considered:
- 1) job creation and social value benefits, including skills, training and apprenticeship opportunities
 - 2) local need
 - 3) accessibility of services for local communities and businesses.

Table 9.1 - Forecast arisings of household, commercial and industrial waste by borough 2021-2041 (000's tonnes)

Borough	2021	2041
Barking & Dagenham	214	230
Barnet	315	340
Bexley	225	241
Brent	259	274
Bromley	249	267
Camden	360	374
City of London	230	238
Croydon	305	327
Ealing	291	306
Enfield	305	327
Greenwich	209	226
Hackney	183	195
Hammersmith & Fulham	183	190
Haringey	190	201
Harrow	188	205
Havering	229	249
Hillingdon	347	365
Hounslow	260	275
Islington	241	251
Kensington & Chelsea	201	210
Kingston	152	160
Lambeth	208	219
Lewisham	191	206
Merton	174	184
Newham	244	260
Redbridge	196	216
Richmond	179	190
Southwark	292	308
Sutton	161	172
Tower Hamlets	260	273
Waltham Forest	202	218
Wandsworth	251	264
City of Westminster	722	749
London total	8,217	8,726



Table 9.2 - Borough-level apportionments of household, commercial and industrial waste 2021-2041 (000's tonnes)

Borough	Apportionment *	2021	2041
Barking & Dagenham	6.1	505	537
Barnet	2.6	215	229
Bexley	5.6	457	485
Brent	5.0	412	437
Bromley	2.3	192	204
Camden	1.6	133	141
City of London	1.0	84	90
Croydon	3.1	252	268
Ealing	6.6	542	576
Enfield	4.3	356	379
Greenwich	4.1	338	359
Hackney	1.3	111	118
Hammersmith & Fulham	2.6	210	223
Haringey	2.3	192	203
Harrow	1.9	160	170
Havering	4.5	370	393
Hillingdon	5.1	423	449
Hounslow	5.0	407	432
Islington	1.2	101	108
Kensington & Chelsea	1.4	116	123
Kingston	2.3	187	199
Lambeth	1.7	143	152
Lewisham	2.2	184	195
Merton	2.9	238	253
Newham	4.7	383	407
Redbridge	1.8	151	160
Richmond	1.8	148	157
Southwark	1.8	150	159
Sutton	2.6	211	224
Tower Hamlets	2.4	195	207
Waltham Forest	2.4	199	211
Wandsworth	3.2	264	280
City of Westminster	2.3	188	200
London total	100.0	8,217	8,726

* Apportionment is per cent share of London's total waste to be managed by borough



Table 9.3 - Projected net exports of household, commercial and industrial waste from London (000's tonnes)

Type	2015	2021	2026	2041
London's arisings	8,100	8,216	8,299	8,726
London's exports	3,449	1,725	0	0

Note: 2015 is an actual figure (SLR May 2017), data for 2021, 2026 and 2041 are projections

- 9.8.1 In 2015, London managed 7.5mt of its own waste and exported 11.4mt of waste. London also imported 3.6mt of waste. This gives London a current waste **net self-sufficiency figure** of approximately 60 per cent. Around 5mt (49 per cent) of waste exported from London went to the East of England and 4.2mt (42 per cent) to the South East. The bulk of this waste is CD&E waste. Approximately 1.3mt of waste was exported overseas. The term net self-sufficiency is meant to apply to all waste streams, with the exception of excavation waste. The particular characteristics of this waste stream mean that it will be challenging for London to provide either the sites or the level of compensatory provision needed to apply net self-sufficiency to this waste stream.
- 9.8.2 In 2015, 2.9mt of the waste sent to the East of England went to landfill and 2.2mt went to landfill in the South East. Some 32 per cent of London's waste that was biodegradable or recyclable was sent to landfill. The Mayor is committed to **sending zero biodegradable or recyclable waste to landfill by 2026**.
- 9.8.3 Waste contracts do not recognise administrative boundaries and waste flows across borders. Therefore, sufficient sites should be identified within London to deal with the equivalent of 100 per cent of the waste apportioned to the boroughs as set out in Table 9.2. The Mayor will work with boroughs, the London Waste and Recycling Board, and the London and neighbouring Regional Technical Advisory Bodies to address **cross-boundary waste flow issues**. Examples of joint working include ongoing updates to the London Waste Map, sharing data derived from Circular Economy Statements, the monitoring of primary waste streams and progress to net self-sufficiency, supporting the Environment Agency's annual monitoring work, and collaboration on management solutions of waste arisings from London.
- 9.8.4 Waste is deemed to be managed in London if any of the following activities take place within London:
- waste is used for energy recovery



- the production of solid recovered fuel (SRF), or it is high-quality refuse-derived fuel (RDF) meeting the Defra RDF definition as a minimum¹⁶⁸ which is destined for energy recovery
- it is sorted or bulked for re-use (including repair and re-manufacture) or for recycling (including anaerobic digestion)
- It is reused or recycled (including anaerobic digestion).

9.8.5 Supporting the production of **SRF and high-quality RDF feedstock** will promote local energy generation and benefit Londoners, improving London's energy security, helping to achieve regional self-sufficiency and possibly reducing leakage of SRF and RDF overseas. London facilities should produce high-quality waste feedstock with very little recyclable content (i.e. plastics), supporting renewable energy generation.

9.8.6 Table 9.1 shows projected arisings for household, commercial and industrial waste for each borough. National policy guidance requires boroughs to have regard to the **waste apportionments** set out in the London Plan. The Plan's waste apportionment model defines the proportion of London's total household, commercial and industrial waste that each borough should plan for, and these apportionments are set out in Table 9.2. Part B3 requires boroughs to allocate sufficient land (sites and/or areas) and identify waste management facilities to provide the capacity to manage their apportioned tonnages of waste. Boroughs are encouraged to collaborate by pooling their apportionment requirements. Boroughs with a surplus of waste sites should offer to share these sites with those boroughs facing a shortfall in capacity before considering site release.

9.8.7 Boroughs should examine in detail **how capacity can be delivered at the local level** and demonstrate how this can be provided for through the allocation of sufficient sites and the identification of suitable areas in Development Plans to meet their apportionment, and should aim to meet their waste apportionment as a minimum. It may not always be possible for boroughs to meet their apportionment within their boundaries and in such circumstances boroughs will need to agree the transfer of apportioned waste. Where apportionments are pooled, boroughs must demonstrate how their joint apportionment targets will be met, for example through joint waste Development Plan Documents, joint evidence papers or bilateral agreements.

9.8.8 **Mayoral Development Corporations** (MDCs) must cooperate with host boroughs to meet identified waste needs; this includes boroughs'

¹⁶⁸

See <http://www.sita.co.uk/services-and-products/our-products/rdf-srf> for an explanation of the differences between SRF and RDF.



apportionment requirements. This could be widened to cover boroughs in the relevant waste planning group where appropriate. In future iterations of the Plan full consideration will be given to apportioning waste needs to MDCs.

- 9.8.9 Waste planning authorities and groups should plan to meet the identified waste management needs of their local area and are encouraged to identify suitable **additional capacity for waste**, including those waste streams not apportioned by the London Plan, where practicable. This could include, waste transfer sites, new sites managing construction, demolition and excavation waste, or the reconfiguration and intensification of existing uses that increase management capacity.
- 9.8.10 Plans or agreements **safeguarding waste sites** should take a flexible approach. They should be regularly reviewed and updated to take account of development that may lead to the integration of waste sites or appropriate relocation of lost waste sites. Waste plans should be responsive to strategic opportunities across borough and joint waste planning boundaries for optimising capacity on existing waste sites, or that help to unlock investment in developing new waste sites. Where a waste site may be lost, compensatory capacity should first be explored within the borough. In cases where this can't be provided, and suitable capacity is found in another borough, the receiving borough or joint waste planning group is encouraged to take on the apportionment and include it as part of their Development Plan.
- 9.8.11 Land in Strategic Industrial Locations will provide the main opportunities for locating waste treatment facilities. Existing waste management sites should be clearly identified and safeguarded for waste use. Boroughs should also look to Locally Significant Industrial Sites and intensification of existing waste management sites. Large-scale redevelopment opportunities and redevelopment proposals should incorporate waste management facilities within them. The London Waste Map¹⁶⁹ shows the locations of London's permitted waste facilities and sites that may be suitable for waste facility location.
- 9.8.12 As noted above, waste flows across boundaries and London exported 3.4mt of household, commercial and industrial waste in 2015. To meet the Mayor's policy commitment of net self-sufficiency by 2026 there needs to be a reduction in exports or an increase in imports in the lead up to 2026. Table 9.3 is included to help neighbouring authorities plan for London's expected household, commercial and industrial waste exports.

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London Waste Map, <https://maps.london.gov.uk/webmaps/waste/>

- 9.8.13 Tables 9.1, 9.2 and 9.3 only refer to household, commercial and industrial waste, not construction, demolition and excavation waste. As the **reliability of CD&E waste data is low**, apportionments for this waste stream are not set out. For a fuller discussion of the issues around CD&E waste data see paragraph 9.7.7 and the SLR consulting report (task 2) (May 2017).
- 9.8.14 To support the shift towards a low-carbon circular economy, all facilities generating energy from waste should meet, or demonstrate that they can meet in future, a measure of minimum greenhouse gas performance known as the **carbon intensity floor** (CIF). The CIF is set at 400g of CO₂ equivalent generated per kilowatt hour (kwh) of electricity generated. The GLA's free on-line ready reckoner tool can assist boroughs and applicants in measuring and determining performance against the CIF.¹⁷⁰ Achieving the CIF effectively rules out traditional mass burn incineration techniques generating electricity only. Instead, it supports techniques where both heat and power generated are used, and technologies are able to achieve high efficiencies, such as when linked with gas engines and hydrogen fuel cells. More information on how the CIF has been developed and how to meet it can be found in the London Environment Strategy.
- 9.8.15 Waste to energy facilities should be equipped with a **heat off-take** from the outset such that a future heat demand can be supplied without the need to modify the heat producing plant in any way or entail its unplanned shut-down. It should be demonstrated that capacity of the heat off-take meets the CIF at 100 per cent heat supply. In order to ensure it remains relevant, the CIF level will be kept under review.
- 9.8.16 Examples of the '**demonstrable steps**' required under Part E3 are:
- a commitment to source truly residual waste – waste with as little recyclable material as possible
 - a commitment (via a Section 106 obligation) to deliver the necessary means for infrastructure to meet the minimum CO₂ standard, for example investment in the development of a heat distribution network to the site boundary, or technology modifications that improve plant efficiency
 - an agreed timeframe (via a Section 106 agreement) as to when proposed measures will be delivered
 - the establishment of a working group to progress the agreed steps and monitor and report performance to the consenting authority.

- 9.8.17 To assist in the delivery of 'demonstrable steps' the GLA can help to advise on **heat take-off opportunities** for waste to energy projects, particularly where these are linked to GLA supported energy masterplans.
- 9.8.18 In 2015 around 324,000 tonnes of **hazardous waste** was produced in London. Hazardous waste makes up a component of all waste streams and is included in the apportionments for household, commercial and industrial waste set out in Table 9.2. London sends small amounts of hazardous waste to landfill outside of London, approximately three per cent of the national total. The amount of such waste produced has continued to grow in the short and medium term. Without sustained action, there remains the risk of a major shortfall in our capacity to treat and dispose of hazardous waste safely. This could lead to storage problems, illegal disposal (including fly tipping) and rising public concern about health and environmental impacts. There is therefore a need to continue to identify hazardous waste capacity for London. The main requirement is for sites for regional facilities to be identified. Boroughs will need to work with neighbouring authorities to consider the necessary facilities when planning for their hazardous waste.
- 9.8.19 **Waste processing facilities** should be well designed. They should respect context, not be visually overbearing and should contribute to the local economy as a source of new products and new jobs. They should be developed and designed in consultation with local communities, taking account of health and safety within the facility, the site and adjoining neighbourhoods. Developments supporting circular economy outcomes such as re-use, repair and re-manufacture, will be encouraged. Where movement of waste is required, priority should be given to facilities for movement by river or rail. Opportunities for combined heat, power and cooling should be taken wherever possible. Although no further landfill proposals in London are identified or anticipated within the Plan period, if proposals do come forward for new or extended landfill capacity or for land-raising, boroughs should ensure that the resultant void-space has regard to the London Environment Strategy.
- 9.8.20 Following the Agent of Change principle, developments adjacent to waste management sites should be designed to **minimise the potential for disturbance and conflicts of use**. Developers should refer to the London Waste and Recycling Board's design guide for ensuring adequate and easily accessible storage space for high-rise developments, see Part E of [Policy D6 Housing quality and standards](#).

Policy SI 9 Safeguarded waste sites

- A Existing waste sites should be safeguarded and retained in waste management use.
- B Waste facilities located in areas identified for non-waste related development should be integrated with other uses as a first principle where they deliver clear local benefits.
- C Waste plans should be adopted before considering the loss of waste sites. The proposed loss of an existing waste site will only be supported where appropriate compensatory capacity is made within London that must be at or above the same level of the waste hierarchy and at least meet, and should exceed, the maximum achievable throughput of the site proposed to be lost.
- D Development proposals that would result in the loss of existing sites for the treatment and/or disposal of hazardous waste should not be permitted unless compensatory hazardous waste site provision has been secured in accordance with this policy.
- E Development proposals for the relocation of waste sites within London are supported where strategic waste management outcomes are achieved.

- 9.9.1 London has approximately 500 **waste sites**, defined as land with planning permission for a waste use or a permit from the Environment Agency for a waste use. This applies to land used for any waste stream. These sites cover a wide range of waste activities and perform a valuable service to London, its people and economy.
- 9.9.2 Any **proposed release of current waste sites** or those identified for future waste management capacity should be part of a plan-led process, rather than done on an ad-hoc basis. Waste sites should only be released to other land uses where waste processing capacity is re-provided elsewhere within London, based on the maximum achievable throughput of the site proposed to be lost. When assessing the throughput of a site, the maximum throughput achieved over the last five years should be used; where this is not available potential capacity of the site should be appropriately assessed.
- 9.9.3 Policy SI 8 Waste capacity and net waste self-sufficiency promotes **capacity increases at waste sites** where appropriate to maximise their use. If such increases are implemented over the Plan period, it may be possible to justify the



release of waste sites if it can be demonstrated that there is sufficient capacity available elsewhere in London at appropriate sites over the Plan period to meet apportionment and that the target of achieving net self-sufficiency is not compromised. In such cases, sites could be released for other land uses.

Policy SI 10 Aggregates

- A An adequate supply of aggregates to support construction in London will be achieved by:
- 1) encouraging re-use and recycling of construction, demolition and excavation waste within London, including on-site
 - 2) extracting land-won aggregates within London
 - 3) importing aggregates to London by sustainable transport modes.
- B Development Plans should:
- 1) make provision for the maintenance of a landbank (i.e. seven years' supply) of at least five million tonnes of land-won aggregates up to 2041, in particular through a landbank apportionment of:
 - a) at least 1.75 mt to London Borough of Havering
 - b) at least 0.7 mt to London Borough of Redbridge
 - c) at least 1.75 mt to London Borough of Hillingdon
 - d) at least 0.7 mt to London Borough of Hounslow.
 - 2) ensure sufficient capacity of aggregates wharves and aggregate rail depots is available to ensure a steady and adequate supply of imported and marine aggregates to London and maximise the movement of aggregates by sustainable modes
 - 3) support the production of recycled/secondary aggregates and, where practicable, expand capacity at/or adjacent to aggregates wharves and rail depots and quarries during their operational life, within or adjacent to major construction projects.
- C All Mineral Planning Authorities should, in Development Plans:
- 1) identify mineral safeguarding areas to protect sand and gravel resources from development that would otherwise sterilise future potential extraction

- 2) identify and safeguard sites and facilities, including wharves and railheads, with existing, planned or potential capacity for transportation, distribution, processing and/or production of primary and/or secondary/ recycled aggregates.

- D To reduce the environmental impact of aggregate sites and facilities development proposals should:
- 1) demonstrate that appropriate measures to deal with aftercare, restoration and re-use of minerals sites following extraction are in place; with particular emphasis on promoting green infrastructure and biodiversity
 - 2) ensure that potential impacts, in particular to the natural and historic environment and to human health, are assessed and effectively controlled.
- E Development proposals should be designed to avoid and mitigate potential conflicts with sites safeguarded for the transportation, distribution, processing and/or production of aggregates, in line with the Agent of Change principle.

- 9.10.1 London needs a **reliable supply of construction materials** to support continued growth. National planning policy requires Mineral Planning Authorities to maintain a steady and adequate supply of aggregates. These include land-won sand and gravel, crushed rock, marine sand and gravel, recycled materials and secondary aggregates created from construction, demolition and excavation (CD&E) and industrial waste. Most aggregates used in the capital come from outside London, including marine sand and gravel and land-won aggregates, principally crushed rock from other regions. There are relatively small resources of workable land-won sand and gravel in London.
- 9.10.2 A realistic **landbank** (i.e. seven years' supply) of at least 5 million tonnes of land-won aggregates for London throughout the Plan period has been apportioned to boroughs as set out in this policy. There remains some potential for extraction beyond the four boroughs identified, including within the Lee Valley. Boroughs with aggregates resources should consider extraction opportunities when preparing Development Plans.
- 9.10.3 Those boroughs with an apportionment should plan to meet their landbank target and plan for the steady and adequate supply of **minerals** through the



identification of specific sites where viable resources are known to exist, preferred areas where known resources are likely to get planning permission, and areas of search where mineral resources might reasonably be anticipated.

- 9.10.4 Aggregates are bulky materials so Development Plans should maximise their use and re-use and minimise their movement, especially by road. The objective of proximity dictates that the best option is the use of local materials where feasible. The **re-use/recycling** of building materials and aggregates is a significant and well established component of the circular economy advocated in [Policy SI 7 Reducing waste and supporting the circular economy](#) and reduces the demand for natural materials.
- 9.10.5 Boroughs should identify and safeguard existing, planned and potential **sites for aggregate extraction, transportation, processing and manufacture** – and recognise where there may be benefits in their co-location. Existing and future wharf capacity is essential, especially for transporting marine-dredged aggregates, and should be protected in accordance with [Policy SI 5 Water infrastructure](#). Equally important are railway depots for importing crushed rock from other parts of the UK. Railheads are vital to the sustainable movement of aggregates and boroughs should safeguard these sites in line with [Policy T7 Deliveries, servicing and construction](#). Boroughs should also safeguard sites for the production and distribution of aggregate products.
- 9.10.6 Development proposals and planning decisions should ensure that **impacts to environment, heritage and amenity values** are considered, including the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality. Principal issues include noise, dust, air quality, lighting, archaeological and heritage features, traffic, land contamination, impacts to surface and ground water and land stability.
- 9.10.7 **Sites for depots** may be particularly appropriate in preferred industrial locations and other employment areas. Boroughs should examine the feasibility of using quarries as CD&E recycling sites once mineral extraction has finished.
- 9.10.8 Mineral Planning Authorities are required to prepare an annual **Local Aggregates Assessment** (LAA). The Mayor will work with boroughs and the London Aggregates Working Party to explore options for the preparation of joint LAAs in the future.

Policy SI 11 Hydraulic fracturing (Fracking)

A Development proposals for exploration, appraisal or production of shale gas via hydraulic fracturing should be refused.

- 9.11.1 In line with the Plan's policy approach to energy efficiency, renewable energy, climate change, air quality, and water resources, the Mayor does not support fracking in London.
- 9.11.2 The British Geological Survey concluded in a 2014 report for the Department of Energy and Climate Change that "there is no significant Jurassic shale gas potential in the Weald Basin".¹⁷¹ It is highly unlikely that there is any site that is geologically suitable for a fracking development in London.
- 9.11.3 Should any London fracking proposal come forward there is a high probability that it would be located on **Green Belt or Metropolitan Open Land**. Furthermore, London and the south east of England are **seriously water-stressed areas**. Fracking operations not only use large amounts of water but also presents risks of potential contamination, presenting significant risks to London.
- 9.11.4 In addition to avoiding or mitigating adverse construction and operational impacts (noise, dust, visual intrusion, vehicle movements and lighting, on both the natural and built environment, including air quality and the water environment), any fracking proposal would need to take full account, where relevant, of the following **environmental constraints**:
- Areas of Outstanding Natural Beauty
 - Sites of Special Scientific Interest
 - Groundwater Source Protection Zone 1
 - Special Protection Areas (adopted or candidate)
 - Special Areas of Conservation (adopted or candidate)
 - Sites of Metropolitan Importance for Nature Conservation
 - groundwater or surface water

¹⁷¹

The Jurassic shales of the Weald Basin: geology and shale oil and shale gas resource estimation, British Geological Survey, 2014



- 9.11.5 The United Kingdom Onshore Oil and Gas Group (UKOOG), which represents the industry, has established a **Community Engagement Charter** for new onshore oil and gas proposals.¹⁷² The Charter sets out a number of commitments for operators which includes engagement with local communities at each of the three main stages of operations (exploration, appraisal and production). Where any proposals for fracking to come forward, applicants who are members of UKOOG would be expected to comply with these commitments.

Policy SI 12 Flood risk management

- A Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.
- B Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.
- C Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.
- D Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.
- E Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.

¹⁷² Community Engagement Charter – oil and gas from unconventional reservoirs, UKCOOG, 2013, <http://www.ukoog.org.uk/community/charter>



- F Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.
- G Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

- 9.12.1 In London, the boroughs are **Lead Local Flood Authorities** (LLFAs) and are responsible, in particular, for local surface water flood risk management and for maintaining a flood risk management assets register. They produce Local Flood Risk Management Strategies. LLFAs should cooperate on strategic and cross-boundary issues.
- 9.12.2 The **Regional Flood Risk Appraisal** (RFRA) considers all sources of flood risk including tidal, fluvial, surface water, sewer, groundwater and reservoir flooding and has been updated in collaboration with the Environment Agency. The RFRA provides a spatial analysis of flood risk including consideration of risks at major growth locations such as Opportunity Areas and Town Centres and key infrastructure assets. The Government's updated allowances for climate change are reflected in the expected sea level rise and increased flood risks considered in the RFRA. The updated allowances consider the lifetime, vulnerability and location of a development.
- 9.12.3 The **Thames Estuary 2100 Plan** (TE2100), published by the Environment Agency, and endorsed by Government, focuses on a partnership approach to tidal flood risk management. It requires the ability to maintain and raise some tidal walls and embankments. The Environment Agency estimates that a new Thames Barrier is likely to be required towards the end of the century. Potential sites will be needed in Kent and/or Essex requiring close partnership working with the relevant local authorities.
- 9.12.4 The concept of Local Authorities producing **Riverside Strategies** was introduced through the TE2100 Plan to improve flood risk management in the vicinity of the river, create better access to and along the riverside, and improve the riverside environment. The Mayor will support these strategies.

- 9.12.5 The Environment Agency's Thames River Basin District **Flood Risk Management Plan** is part of a collaborative and integrated approach to catchment planning for water. Measures to address flood risk should be integral to development proposals and considered early in the design process. This will ensure they provide adequate protection, do not compromise good design, do not shift vulnerabilities elsewhere, and are cost-effective. Natural flood risk management in the upper river catchment areas can also help to reduce risk lower in the catchments. Making space for water when considering development proposals is particularly important where there is significant exposure to flood risk along tributaries and at the tidal-fluvial interface. The Flood Risk Management Plan should inform the boroughs' Strategic Flood Risk Assessments.
- 9.12.6 In terms of mitigating **residual risk**, it is important that a strategy for resistance and then resilience including safe evacuation and quick recovery to address such risks is in place; this is also the case for utility services. In the case of a severe flood, especially a tidal flood, many thousands of properties could be affected. This will make rescue and the provision of temporary accommodation challenging. Designing buildings such that people can remain within them and be safe and comfortable in the unlikely event of such a flood, will improve London's resilience to such an event.

Policy SI 13 Sustainable drainage

- A Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed.
- B Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:
- 1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
 - 2) rainwater infiltration to ground at or close to source
 - 3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)

- 4) rainwater discharge direct to a watercourse (unless not appropriate)
 - 5) controlled rainwater discharge to a surface water sewer or drain
 - 6) controlled rainwater discharge to a combined sewer.
- C Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.
- D Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

- 9.13.1 London is at particular risk from surface water flooding, mainly due to the large extent of impermeable surfaces. Lead Local Flood Authorities have responsibility for managing surface water drainage through the planning system, as well as ensuring that appropriate maintenance arrangements are put in place. **Local Flood Risk Management Strategies and Surface Water Management Plans** should ensure they address flooding from multiple sources including surface water, groundwater and small watercourses that occurs as a result of heavy rainfall.
- 9.13.2 Development proposals should aim to get as close to greenfield run-off rates¹⁷³ as possible depending on site conditions. The **well-established drainage hierarchy** set out in this policy helps to reduce the rate and volume of surface water run-off. Rainwater should be managed as close to the top of the hierarchy as possible. There should be a preference for green over grey features, and drainage by gravity over pumped systems. A blue roof is an attenuation tank at roof or podium level; the combination of a blue and green roof is particularly beneficial, as the attenuated water is used to irrigate the green roof.
- 9.13.3 For many sites, it may be appropriate to use **more than one form of drainage**, for example a proportion of rainwater can be managed by more sustainable methods, with residual rainwater managed lower down the hierarchy. In some cases, direct discharge into the watercourse is an appropriate approach, for example rainwater discharge into the tidal Thames or a dock. This should include suitable pollution prevention filtering measures, ideally by using soft engineering or green infrastructure. In addition, if direct discharge is to a watercourse where

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The runoff that would occur from a site in undeveloped natural state.



the outfall is likely to be affected by tide-locking, suitable storage should be designed into the system. However, in other cases direct discharge will not be appropriate, for example discharge into a small stream at the headwaters of a catchment, which may cause flooding. This will need to be assessed on a case-by-case basis, taking into account the location, scale and quality of the discharge and the receiving watercourse. The maintenance of identified drainage measures should also be considered in development proposals.

- 9.13.4 The **London Sustainable Drainage Action Plan** complements this policy. It contains a series of actions to make the drainage system work in a more natural way with a particular emphasis on retrofitting.

Policy SI 14 Waterways – strategic role

- A Development Plans and development proposals should address the strategic importance of London's network of linked waterways, including the River Thames, and should seek to maximise their multifunctional social, economic and environmental benefits.
- B To ensure coordination and alignment at the interface between terrestrial and marine planning, Development Plans and development proposals should take account of the emerging Marine Spatial Plans prepared by the Marine Management Organisation.
- C Boroughs are encouraged to work together on policies or other appropriate area-based strategies that address cross-boundary waterways issues.
- D To reflect the distinctiveness of areas that specifically relate to the River Thames, relevant Development Plans should designate, and ensure the maintenance of, Thames Policy Areas (TPAs). Setting the boundary of TPAs should be done in consultation with neighbouring boroughs, including those across the river. Boroughs are encouraged to plan for TPAs through joint Thames Strategies.
- E Joint Thames Strategies and other area-based joint waterways strategies should consider:
- the local character of the river/waterway
 - water-based passenger and freight transport nodes
 - development sites and regeneration opportunities

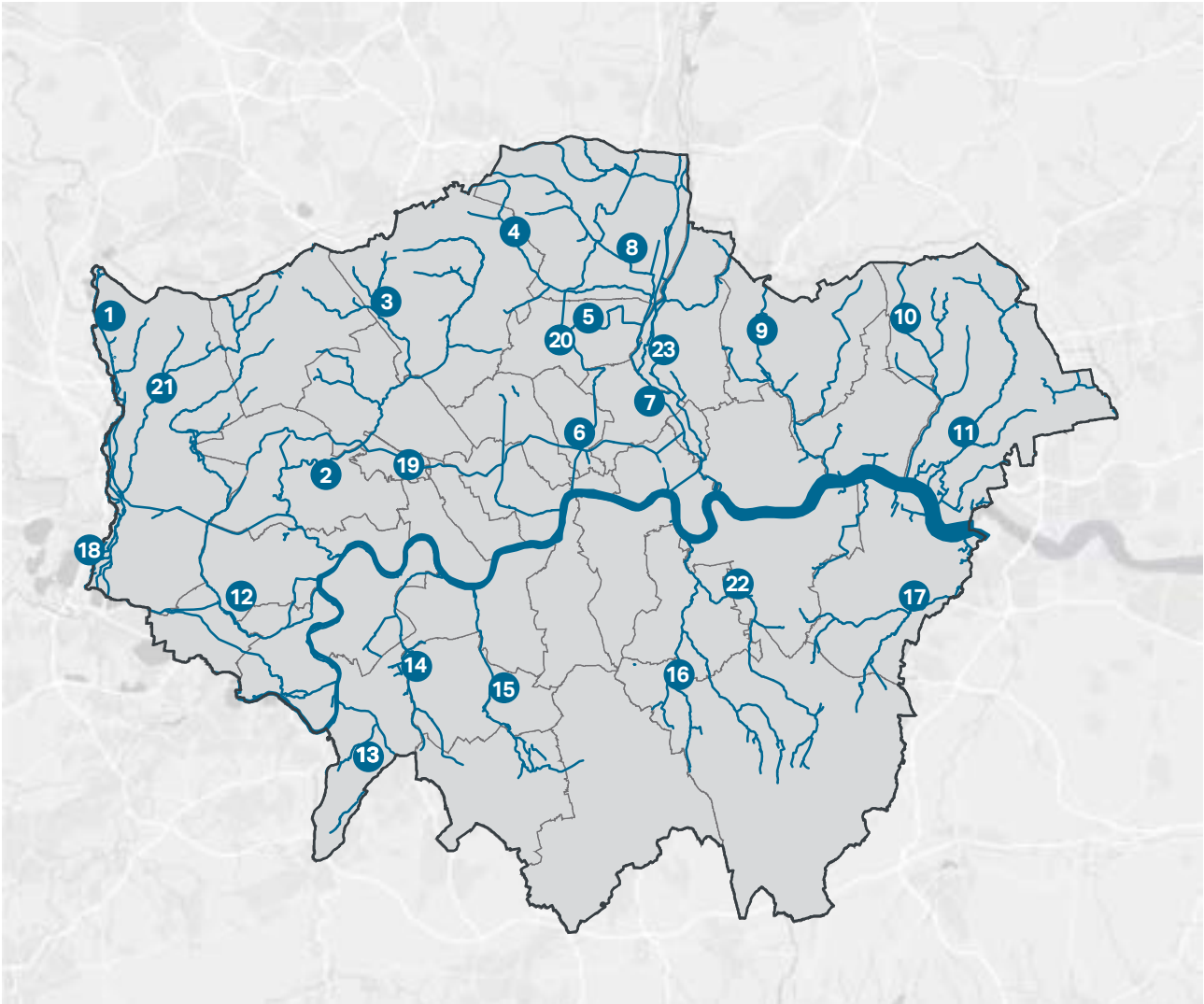
- opportunities for environmental/ecological and urban design improvements
- sites of ecological, historic, or archaeological importance
- sites, buildings, structures, landscapes and views of particular sensitivity or importance
- focal points of public activity
- inclusive public access
- strategic cultural value
- recreation and marine infrastructure
- river crossings and other structures
- indicative flood risk and water quality.

9.14.1 The term 'waterways' does not only refer to the River Thames, its tributary rivers and canals, but also to other water spaces including docks, lakes and reservoirs. **This network of linked waterways** – also known as the Blue Ribbon Network – is of strategic importance for London. Every London borough contains some waterways – 17 border the Thames and 15 contain canals (see [Figure 9.6](#)).

9.14.2 London's **waterways are multifunctional assets**. They provide transport and recreation corridors; green infrastructure; a series of diverse and important habitats; a unique backdrop for important heritage assets, including World Heritage Sites, landscapes, views, cultural and community activities; as well as drainage, flood and water management and urban cooling functions. As such, they provide environmental, economic and health and wellbeing benefits for Londoners and play a key role in place making. They also provide a home for Londoners living on boats. The waterways are protected and their water-related use – in particular safe and sustainable passenger and freight transport, tourism, cultural, community and recreational activities, as well as biodiversity – is promoted. Many of these functions are also supported by boroughs' local Riverside Strategies, the Environment Agency's Thames River Basin Management Plan and the Port of London Authority's Vision for the Thames. In addition to the Thames, other water spaces, and in particular canals, have a distinct value and significance for London and Londoners.



Figure 9.6 - London's Network of Waterways (the Blue Ribbon Network)



London's Waterways

● Waterways

Note: Not all tributaries shown

Source: OS Open Rivers

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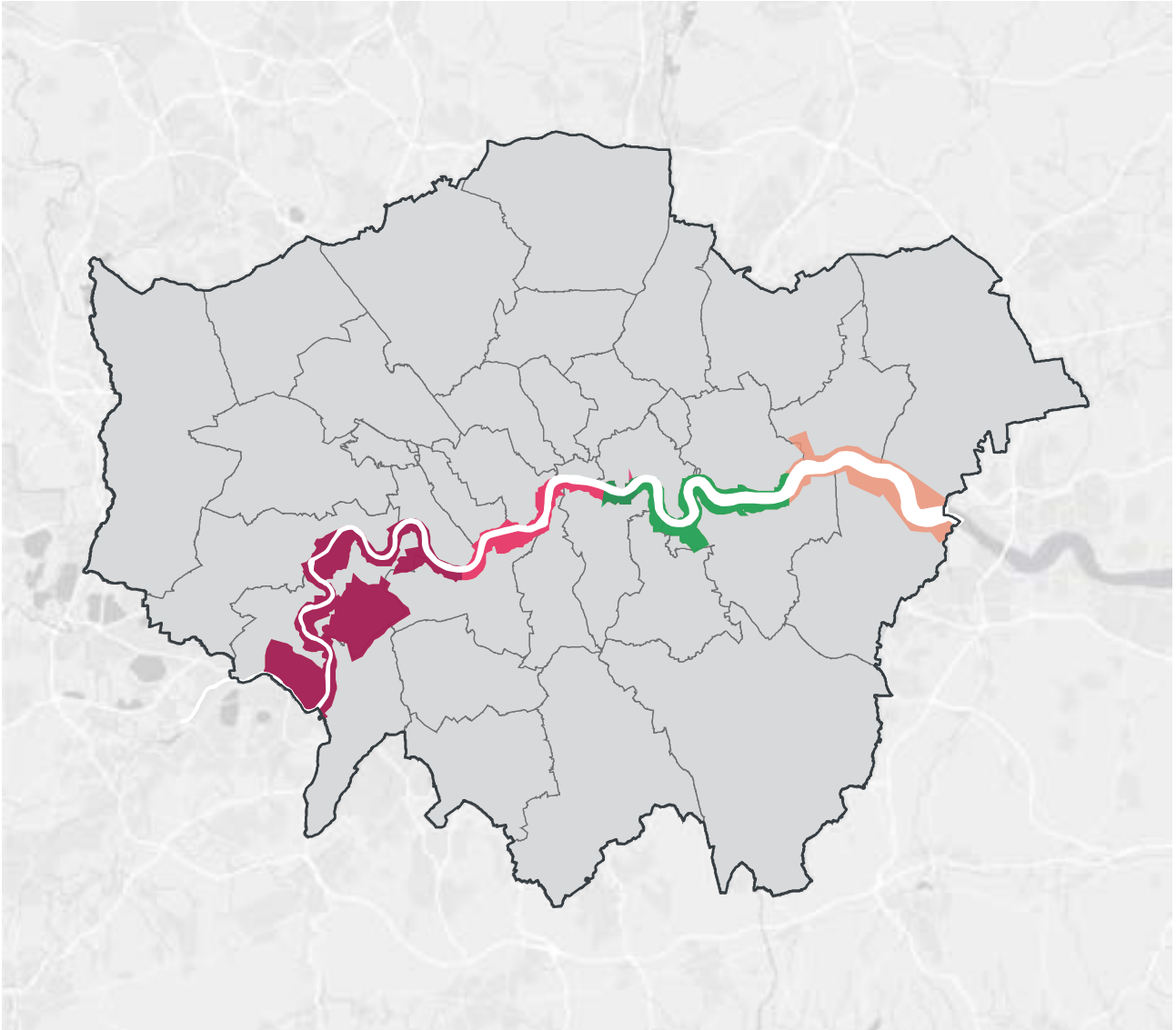
- | | | | |
|----------------------|---------------------|---------------------|--------------------|
| 1. Grand Union Canal | 7. Lee Navigation | 13. Hogsmill River | 19. Paddington Arm |
| 2. River Brent | 8. Salmons Brook | 14. Beverley Brook | 20. New River |
| 3. Silk Stream | 9. River Roding | 15. R. Wandle | 21. River Pinn |
| 4. Pymmes Brook | 10. River Rom | 16. Ravensbourne R. | 22. River Quaggy |
| 5. Moselle Brook | 11. Ingrenbourne R. | 17. River Cray | 23. River Lea |
| 6. Regents Canal | 12. R. Crane | 18. River Colne | |

- 9.14.3 The **Thames and London Waterways Forum**¹⁷⁴ has been established jointly by the GLA, TfL and the Port of London Authority to address waterways priorities set out in this Plan, the Mayor's Transport Strategy, the London Environment Strategy and the Port of London Authority's Vision for the Thames.
- 9.14.4 As London's waterways cross borough boundaries, it is important to plan for their management strategically. Boroughs are encouraged to work together to develop appropriate policies or **joint area-based waterways strategies** to maximise the multifunctional benefits waterways provide.
- 9.14.5 The River Thames is a strategically-important and iconic feature of London. It is a focal point for London's identity reflecting its heritage, natural and landscape values as well as cultural opportunities. Its character changes on its way through London. Where **Thames Policy Areas** (TPAs) are not defined in Development Plans, the boundaries defined in [Figure 9.7](#) apply. Within TPAs, lower-height thresholds for referable planning applications apply (25m compared to 30m elsewhere).
- 9.14.6 In **defining TPA boundaries**, boroughs should work collaboratively and have regard to the following:
- proximity to the Thames
 - clear visual links between areas, buildings and the river
 - specific geographical features such as main roads, railway lines and hedges
 - the whole curtilage of properties or sites adjacent to the Thames
 - areas and buildings whose functions relate or link to the Thames
 - areas and buildings that have an historic, archaeological or cultural association with the Thames
 - consistent boundaries with neighbouring authorities.
- 9.14.7 **Joint Thames Strategies** should specifically identify and address deficiencies in: water-based passenger, tourism and freight transport; sport, leisure and mooring facilities; marine support infrastructure; and inclusive access and safety provision. Thames Strategies are in place for Hampton–Kew, Kew–Chelsea and East (of Tower Bridge). No joint strategy currently exists for the central section of the Thames (Chelsea–Tower Bridge).

¹⁷⁴

The Forum replaces the former London Waterways Commission and the River Concordat Group.



Figure 9.7 - Thames Policy Areas**Thames Policy Areas**

- Hampton to Wandsworth
- Wandsworth to Bermondsey
- Bermondsey to Woolwich
- Woolwich to Crayford Ness

Source: Town and Country Planning (Mayor of London) Order, CLG, 2008

Contains OS data © Crown copyright and database right (2017)

- 9.14.8 The interface between terrestrial land-side and marine planning is at the centre of on-going coordination and engagement with the Marine Management Organisation (MMO). The **South East Inshore Marine Plan** is currently under development as part of a suite of Marine Spatial Plans¹⁷⁵ under the Marine Policy Statement. It covers the coastline from Felixstowe to Dover, including the tidal Thames. Development Plans and development proposals should take account of these plans.

Policy SI 15 Water transport

- A Development proposals should protect and enhance existing passenger transport piers and their capacity. New piers will be supported in line with the Port of London Authority and Transport for London's Pier Strategy. The necessary provision of moorings, waste and sewage facilities for passenger vessels should be provided.
- B Existing boatyard sites should be protected and development proposals to increase their capacity or range of services should be supported. Alternative use of a boatyard site should only be accepted if the facilities of the site are re-provided at a site with equivalent or enhanced facilities in Greater London. Proposals for a new strategic-scale boatyard site, at an appropriate site within London, will be supported.
- C Development proposals to facilitate an increase in the amount of freight transported on London's waterways should be supported.
- D The Mayor will keep the network of safeguarded wharves under regular review. Boroughs should protect existing locations and identify new locations for additional waterborne freight. There may be opportunities to consolidate wharves as part of strategic land use change, in particular, within Opportunity Areas; these will need to ensure that the existing and potential capacity and operability of the safeguarded wharves is retained and where possible expanded.
- E Safeguarded wharves should only be used for waterborne freight-handling use, including consolidation centres. The redevelopment of safeguarded wharves for other land uses should only be accepted if the wharf is no longer

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South East Inshore Marine Plan, Marine Management Organisation, <https://www.gov.uk/government/collections/south-east-marine-plan>

