OPDC
OLD OAK AND
PARK ROYAL
DEVELOPMENT
CORPORATION

Policy Formulation Reports Environment and Utilities Chapter

October 2018

MAYOR OF LONDON

EU1: Open Space

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
17	…promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage, or food production);"…
58	Local and neighbourhood planning policies and decisions should aim to ensure that developments: • optimise the potential of the site to accommodate development, create and sustain an appropriate mix of uses (including incorporation of green and other public space as part of developments) and support local facilities and transport networks
73	Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of communities. Planning policies should be based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities and opportunities for new provision. The assessments should identify specific needs and quantitative or qualitative deficits or surpluses of open space, sports and recreational facilities in the local area. Information gained from the assessments should be used to determine what open space, sports and recreational provision is required.
74	Existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless: • an assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements • the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location the development is for alternative sports and recreational provision, the needs for which clearly outweigh the loss.

National Planning Practice Guidance (NPPG)

Policy/ paragraph reference	Policy and paragraph text
Open Space, Sports and Recreation Facilities	
Title: How should open space be taken into account in planning? **Paragraph:** 001	Open space should be taken into account in planning for new development and considering proposals that may affect existing open space. Open space, which includes all open space of public value, can take many forms, from formal sports pitches to open areas within a development, linear corridors and country parks. It can provide health and recreation benefits to people living and working nearby; have an ecological value and contribute to green

Reference ID: 37-001-20140306 **Revision Date:** 06.03.2014	infrastructure, as well as being an important part of the landscape and setting of built development, and an important component in the achievement of sustainable development. It is for local planning authorities to assess the need for open space and opportunities for new provision in their areas. In carrying out this work, they should have regard to the duty to cooperate where open space serves a wider area. See guidance on Local Green Space designation, which may form part of the overall open space network within an area.
Health and Wellbeing	
Title: Health and Wellbeing **Paragraph:** 002 **Reference ID:** 53-002-20140306 **Revision Date:** 06.03.2014	The range of issues that could be considered through the plan-making and decision-making processes, in respect of health and healthcare infrastructure, include how: • opportunities for healthy lifestyles have been considered (eg planning for an environment that supports people of all ages in making healthy choices, helps to promote active travel and physical activity, and promotes access to healthier food, high quality open spaces, green infrastructure and opportunities for play, sport and recreation)
Title: Health and Wellbeing **Paragraph:** 005 **Reference ID:** 53-005-20140306 **Revision Date:** 06.03.2014	A healthy community is a good place to grow up and grow old in. It is one which supports healthy behaviours and supports reductions in health inequalities. It should enhance the physical and mental health of the community and, where appropriate, encourage: • Active healthy lifestyles that are made easy through the pattern of development, good urban design, good access to local services and facilities; green open space and safe places for active play and food growing, and is accessible by walking and cycling and public transport.
Design	
Title: Planning should promote a network of greenspaces (including parks) and public places **Paragraph:** 009 **Reference ID:** 26-009-20140306 **Revision Date:** 06.03.2014	Development should promote public spaces and routes that are attractive, accessible, safe, uncluttered and work effectively for all users – including families, disabled people and elderly people. A system of open and green spaces that respect natural features and are easily accessible can be a valuable local resource and helps create successful places. A high quality landscape, including trees and semi-natural habitats where appropriate, makes an important contribution to the quality of an area.
Title: Planning should promote cohesive and vibrant neighbourhoods	Cohesion relies on a neighbourhood having a robust structure and identity. Local and neighbourhood plans can set aspirations for areas considering what is already successful about them and how they could be improved. This might include movement networks, the

Paragraph: 014 **Reference ID:** 26-014-20140306 **Revision Date:** 06.03.2014	mix of uses and tenures, the amount and position of open space and local vernacular building materials and styles.
Title: Consider scale **Paragraph:** 026 **Reference ID:** 26-026-20140306 **Revision Date:** 06.03.2016	Decisions on building size and mass, and the scale of open spaces around and between them, will influence the character, functioning and efficiency of an area. In general terms too much building mass compared with open space may feel overly cramped and oppressive, with access and amenity spaces being asked to do more than they feasibly can.

London Plan (2016) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 1 Context and Strategy	
Policy 1.1 Delivering the Strategic Vision and Objectives for London	B Growth will be supported and managed across all parts of London to ensure it takes place within the current boundaries of Greater London without: a encroaching on the Green Belt, or on London's protected open spaces
Chapter 2: London's Places	
Policy 2.18 Green Infrastructure: the multi functional network of green and open spaces	Boroughs should: a set out a strategic approach to planning positively for the creation, protection, enhancement and management of networks of green infrastructure by producing green infrastructure strategies that cover all forms of green and open space and the interrelationship between these spaces. These should identify priorities for addressing deficiencies and should set out positive measures for the design and management of all forms of green and open space; Delivery of local biodiversity action plans should be linked to these strategies. b ensure that in and through DPD policies, green infrastructure needs are planned and managed to realise the current and potential value of these to communities and to support delivery of the widest range of linked environmental and social benefits; c in London's urban fringe support, through appropriate initiatives, the vision of creating and protecting an extensive and valued recreational landscape of well-connected and accessible countryside around London for both people and wildlife.
Chapter 3 London's People	
Policy 3.5 Quality and	B The design of all new housing developments should enhance the quality of local places, taking into account physical context; local character;

Design of Housing Developments	density; tenure and land use mix; and relationships with, and provision of, public, communal and open spaces, taking particular account of the needs of children, disabled and older people.
Policy 3.19 Sports Facilities	C Where sports facility developments are proposed on existing open space, they will need to be considered carefully in light of policies on Green Belt and protecting open space (Chapter 7) as well as the borough's own assessment of needs and opportunities for both sports facilities and for green multifunctional open space.
Chapter 7: London's Living Spaces and Places	
Policy 7.1 Lifetime Neighbourhoods	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 7.5 Public Realm	D Boroughs should develop local objectives and programmes for enhancing the public realm, ensuring it is accessible for all, with provision for sustainable management and reflects the principles in Policies 7.1, 7.2, 7.3 and 7.4.
Policy 7.17 Metropolitan Open Land	Any alterations to the boundary of MOL should be undertaken by Boroughs through the LDF process, in consultation with the Mayor and adjoining authorities. To designate land as MOL boroughs need to establish that the land meets at least one of the following criteria: • it contributes to the physical structure of London by being clearly distinguishable from the built up area • it includes open air facilities, especially for leisure, recreation, sport, the arts and cultural activities, which serve either the whole or significant parts of London • it contains features or landscapes (historic, recreational, biodiversity) of either national or metropolitan value • it forms part of a Green Chain or a link in the network of green infrastructure and meets one of the above criteria.
Policy 7.18 Protecting Open Space and Addressing Deficiency	The Mayor supports the creation of new open space in London to ensure satisfactory levels of local provision to address areas of deficiency. Planning decisions The loss of protected open spaces must be resisted unless equivalent or better-quality provision is made within the local catchment area. Replacement of one type of open space with another is unacceptable unless an up to date needs assessment shows that this would be appropriate. LDF preparation When assessing local open space needs LDFs should: • include appropriate designations and policies for the protection open space to address deficiencies • identify areas of open space deficiency, using the open space categorisation set out in Table 7.2 as a benchmark for all the different types of open space identified therein • ensure that future publically accessible open space needs are planned for in areas with the potential for substantial change such as opportunity areas, regeneration areas, intensification areas and other local areas.

	• ensure that open space needs are planned in accordance with green infrastructure strategies to deliver multiple benefits. Boroughs should undertake audits of all forms of open space and assessments of need1. These should be both qualitative and quantitative, and have regard to the cross-borough nature and use of many of these open spaces.
Policy 7.22 Land for Food	Strategic A The Mayor will seek to encourage and support thriving farming and land-based sectors in London, particularly in the Green Belt. B Use of land for growing food will be encouraged nearer to urban communities via such mechanisms as 'Capital Growth'. LDF preparation C Boroughs should protect existing allotments. They should identify other potential spaces that could be used for commercial food production or for community gardening, including for allotments and orchards. Particularly in inner and central London innovative approaches to the provision of spaces may need to be followed, these could include the use of green roofs.

Draft New London Plan (2017) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 1 Planning London's Future	
Policy GG2 Making the best use of land	To create high-density, mixed-use places that make the best use of land, those involved in planning and development must: D Protect London's open spaces, including the Green Belt, Metropolitan Open Land, designated nature conservation sites and local spaces, and promote the creation of new green infrastructure and urban greening.
Chapter 3 Design	
Policy D1 London's form and characteristics	Development Plans, area-based strategies and development proposals should address the following: A The form and layout of a place should: • 7) provide conveniently located green and open spaces for social interaction, play, relaxation and physical activity
Policy D2 Delivering good design	A To identify an area's capacity for growth and understand how to deliver it in a way which strengthens what is valued in a place, boroughs should undertake an evaluation, in preparing Development Plans and areabased strategies, which covers the following elements: 6) open space networks, green infrastructure, and water bodies
Chapter 5 Social Infrastructure	
Policy S5 Sports and recreation facilities	C Where facilities are proposed on existing open space, boroughs should consider these in light of policies on protecting open space (Policy G3 Metropolitan Open Land) and the borough's own assessment of needs and opportunities for sports facilities, and the potential impact that the development will have.
Chapter 8 Green infrastructure and Natural Environment	
Policy G1 Green infrastructure	A London's network of green and open spaces, and green features in the built environment such as green roofs and street trees, should be protected, planned, designed and managed as integrated features of green infrastructure

	B Boroughs should prepare green infrastructure strategies that integrate objectives relating to open space provision, biodiversity conservation, flood management, health and wellbeing, sport and recreation. C Development Plans and Opportunity Area Planning Frameworks should: • identify key green infrastructure assets, their function and their potential function • 2) identify opportunities for addressing environmental and social challenges through strategic green infrastructure interventions.
Policy G3 Metropolitan Open Land	A Metropolitan Open Land (MOL) should be protected from inappropriate development: • 1) development proposals that would harm MOL should be refused • 2) boroughs should work with partners to enhance the quality and range of uses of MOL. B The extension of MOL designations should be supported where appropriate. C Any alterations to the boundary of MOL should be undertaken through the Local Plan process, in consultation with the Mayor and adjoining boroughs. D Boroughs should designate MOL by establishing that the land meets at least one of the following criteria: • 1) it contributes to the physical structure of London by being clearly distinguishable from the built-up area • 2) it includes open air facilities, especially for leisure, recreation, sport, the arts and cultural activities, which serve either the whole or significant parts of London • 3) it contains features or landscapes (historic, recreational, biodiverse) of either national or metropolitan value • 4) it forms part of a strategic corridor, node or a link in the network of green infrastructure and meets one of the above criteria.
Policy G4 Local green and open space	A Local green and open spaces should be protected. B The creation of new areas of publicly-accessible green and open space should be supported, especially in areas of deficiency in access to public open space. C Boroughs should undertake a needs assessment of local green and open space to inform policy. Assessments should identify areas of public green and open space deficiency, using the categorisation set out in Table 8.1 as a benchmark for all the different types required105. D The loss of green and open spaces should be resisted in areas of deficiency. If losses are proposed outside of areas of deficiency, equivalent or better quality provision should be made within the local catchment area unless an up-to-date needs assessment demonstrates this is unnecessary. E Development Plans and Opportunity Area Frameworks should: 1) include appropriate designations and policies for the protection of green and open space to address deficiencies

	2) ensure that future green and open space needs are planned for in areas with the potential for substantial change 3) ensure that green and open space needs are planned in line with objectives in green infrastructure strategies in order to deliver multiple benefits and in recognition of the cross-borough nature of some forms of green infrastructure.

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	Policy and paragraph text
2.2.3	Through careful design, developers should ensure their schemes optimise density. The design should enable the development to sit comfortably within the local context and provide a high quality living or working environment, including the provision of amenity and open space. The delivery of sufficient housing, employment space and supporting infrastructure on existing sites will result in less pressure to development open spaces and other green or public spaces.
2.2.32 – 2.2.33	2.2.32 Where boroughs are aware of a demand for food growing space they can secure landscape designs within developments that provide flexible open spaces which may be adapted for food growing to be undertaken in the future, should there be demand from the local community. Consideration at the design stage will include: • safeguarding south facing spaces • the availability of water, incorporating rain water harvesting • the loading capacity of green roofs and balconies; • planting walls with espaliers or climbing plants; • integrating edible plants with ornamental plants; • proving planters that can be easily converted for food growing; and • management. 2.2.33 Where provided, it may be appropriate to secure (through condition or s106 agreement) the identified space for food growing, as opposed to wider open space uses.

All London Green Grid 2012 (SPG)

Policy/ paragraph reference	Policy and paragraph text
Implementation Point 4 (b)	Development and regeneration proposals should plan, locate and design new and improved green infrastructure and manage the ALGG as an interdependent, integrated and multifunctional open and green space network
Implementation Point 7	The Mayor, boroughs and other stakeholders should work in partnership to address all opportunities to achieve the appropriate range of diverse functions and benefits from the network of green infrastructure both within and around London

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle D2	Proposals should: Deliver a grid of amenity spaces (public, private, communal) that contributes to the creation of healthy Lifetime Neighbourhoods as depicted in figure 14 and that: a. contributes to the delivery of the Mayor's All London Green Grid SPG; b. caters for the needs of new and existing communities; c. are laid out as a well-connected legible grid; d. are well-designed and with clear management and maintenance plans; e. facilitates clear connections between stations; f. protects, improves and connects into existing open spaces; g. includes coordinated urban greening along streets, in public open spaces and along the Grand Union Canal; h. connects biodiversity assets to support habitat resilience; and i. mitigates flood risk through the delivery of sustainable urban drainage measures.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	Alternative policy option
12.6	No alternative policy options have been identified, as alternatives would not be consistent with the NPPF or in general conformity with the London Plan.

Key Consultation Issues

Regulation 18 consultation

What the issue is	Who raised the issue	What we're doing to address the issue
Delivering open space: The policy should provide a stronger commitment to delivering open space.	Brent Council	Change proposed. The revised Local Plan is supported by an Environmental Standards Study. This is informing more detailed requirements for open space in Local Plan, which are set out in Policy SP8 (Green Infrastructure and Open Space), the place policies (chapter 4), Policy EU1 (open space) and EU2 (Urban Greening and Biodiversity). This includes the requirement to deliver 30% public open space as

		part of development proposals outside of SIL and the delivery of 3 new local parks (2ha+) in Old Oak
Open space: Some stakeholders supported the open space provision in Old Oak North being provided as one large space, stating that it would allow for a wider range of recreational and sporting activities Other stakeholders supported the provision of a series of linked smaller spaces, as this would enable more doorstep access to open space, whilst still providing for a wide variety of functions One consultee felt it best to maintain flexibility and allow proposals to either provide the open space as one large space of a series of linked spaces	Brent Council, Hammersmith and Fulham Council, Hammersmith and Fulham Historic Buildings Group, 3 local residents Midland Terrace Resident's Group, Old Oak Interim Forum, 2 local residents Old Oak Park (DP9)	Change proposed. The Old Oak North place policy (P2) requires the delivery of a new minimum 2 ha local park in Old Oak North, to provide for a variety of leisure and recreation functions. The need for this space is evidenced in OPDC's Environmental Standards Study. The policy for Old Oak North also requires development in Old Oak North to contribute to the delivery of the Grand Union Canal local park, also of a minimum of 2ha, with the remainder of the park being provided by development coming forward in Old Oak South. Policy SP8 (Green Infrastructure and Open Space) and EU1 (open space) require that development delivers 30% of the developable area as public open space and that in addition to local parks, provision should be made of smaller open spaces and green streets.
Green space: There is a need for more green space in North Acton. It is not clear in the Plan whether existing open space will be protected and what the approach is towards greenspace, landscaping/tree planting.	Grand Union Alliance, 3 local residents	Change proposed. The Local Plan policy EU1 looks to protect existing open spaces, unless it is re-provided with at least an equivalent quantum and quality. Policy SP8 and EU1 also requires the provision of new open space, including requiring 30% of the developable area outside of SIL being provided as public open space. Policy EU2 supports high quality

		urban greening and the delivery of a diverse range of ecology.
Management of open space: Policies D2 and D3 should set out how it is considering the long term management of open spaces and public realm in light of local council resources.	Brent Council, The Hammersmith Society, 1 local resident.	Noted. Policy SP8, EU1 and EU2 set out the importance of securing appropriate management and maintenance arrangements for open space. The Local Plan does not specify the exact arrangements as there would need to be detailed consideration of the most appropriate management arrangements on a case by case basis.
Amount and types of open space: Policy D3 should specific quantum and range of open space needed to meet the needs of the new community. Open spaces should provide a range of roles including for attractions, social gatherings, biodiversity/nature, community events, street markets and quiet places.	Brent Council, Diocese of London, Grand Union Alliance, The Hammersmith Society, Hammersmith and Fulham Historic Buildings Group, 4 local residents	Change proposed. Policy EU1 (which supersedes D3) identifies that outside of Strategic Industrial Location (SIL), development should look to deliver a minimum 30% of the area as publicly accessible open space. The policy sets out that this should be delivered through local parks in locations identified in the places chapter, smaller open spaces, green streets and where it is not possible or desirable to deliver 30%, a contribution in lieu would be sought.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
MOL should be offered stronger protection in the policy and resupplying MOL elsewhere is not sufficient if MOL is lost. This policy does not accord with London Plan para 7.56	Wormwood Scrubs Charitable Trust	No change proposed. Metropolitan Open Land (MOL) benefits from the same national guidance as Green Belt. OPDC considers that policy EU1 accords with the National Planning Policy Framework paragraph 88. Strong protection to Wormwood Scrubs as MOL is also set out in Policy P12.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Wording of Policy EU1 should be amended to justify the loss of underutilised open space.	Diageo	No change proposed. OPDC does not agree that underutilised open space should be lost. Currently there is a lack of open space across the area and a need for additional provision. Where open space is poorly utilised OPDC will seek to improve utilisation by securing enhancements to the open space and securing improved access.
Concern that the policy is too prescriptive and could undermine opportunities to deliver open space that may not fulfil the criteria but could be beneficial	Castlepride Ltd	No change proposed. OPDC consider that the criteria are reasonably broad and flexible whilst ensuring that sufficient green space is provided which will fulfil the functional requirements of green infrastructure.
The separation of MOL and other areas of open space insinuates weaker protection for non MOL open spaces.	Sport England	No change proposed. MOL has special status in planning and OPDC therefore believes that it is important to highlight this. However, OPDC also recognises the importance of all open space and therefore has policies to protect green space in SP8 and EU1 and to expand the provision of spaces for recreation, sport, amenity and ecology.
Policy a) in EU1 which states development in WWS will only be permitted in very special circumstances is inconsistent with other policies in the local plan, e.g.: P12c) which refers to the enhancement of Wormwood Scrubs by providing play space and improving functionality and accessibility in 3.88	Old Oak Park Ltd	No change proposed. OPDC does not consider that policy EU1, which provides the strongest protection for MOL and conforms with the London Plan, conflicts with the enhancement of Wormwood Scrubs. The two policies are not mutually exclusive.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Requirement for 30% of developable area as public open space is excessive given the proximity to Wormwood Scrubs	Old Oak Park Ltd	No change proposed. OPDC does not consider 30% open land to be excessive. The evidence collected suggests that 30%, which equates to 4.1m2 per person across Old Oak is modest. This has been benchmarked against other large-scale regeneration projects in London in order to derive an appropriate target. By comparison, the average across the LBHF is 13 m2 per person. Access to Wormwood Scrubs is currently constrained. Evidence collected by the GLA suggests that providing open and accessible space within 400ms of homes, close to schools and along safe routes significantly increases the amount of time people spend in parks, helps to improve healthy outcomes and can contribute to better air quality, SuDS, and quality of place.
Objection to requiring payments for residents and workers separately as they would use the same open space but at different times	Old Oak Park Ltd	No change proposed. The overall target is to ensure that 30% of the area is open green space. To achieve this, residential and non-residential developments will be required to make a contribution to open space where this target cannot be achieved on-site. The contribution will be calculated based on the population yield of the development. Some developments will be exclusively residential, some will be non-residential and others will include a mix of uses. OPDC consider that the fairest way to determine how much space should be delivered or what the contribution should be, is to share the contribution across both residential and commercial development but to reflect the higher importance residents place on provision of accessible open space.
Support the delivery of a minimum of 30% of publicly accessible open space as long as this does not include open space being provided to make up for losses elsewhere in the OPDC area. This should be clearly identified in the AMR.	LBHF	No change proposed. The target is for a total of 30% of the area to be public open space. Currently there is a significant shortage of public open space and reprovision will not in itself achieve the target.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Information needed on how contributions for open space will be calculated and what happens if open space cannot be delivered off site.	LBHF	No change proposed. Further details on calculations will be included in OPDC's Planning Obligations SPD. There are a significant number of public open spaces around and within the OPDC area in need of enhancement and OPDC is therefore contented that there will be the ability to utilise off-site contributions.
Welcome part d) of policy	LBHF	Noted.
there is a chronic lack of green space	Local resident	No change proposed. OPDC's policies seek to increase green space provision across policies SP8, EU1 and EU2.
lack of monitoring details	Martin Cain, Friary Park Preservation Group	No change proposed. The approach to monitoring is addressed in OPDC's key performance indicators.
Policy unsound - no justification	Sarah Abrahart, Local Resident	No change proposed. OPDC considers that the policy is sound.
Need a variety of open space provision and creation of a sense of ownership	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The Local Plan supports the delivery of a range of open spaces. OPDC will work with developers to encourage a sense of local ownership and to ensure that space is accessible to all.
Broadly support EU1 policy	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted.
Should reference that Wormwood Scrubs MOL derives its protection from an Act but that ownership and management are through LBHF	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Reference to the need for the WSCT and LBHF to agree any proposals is made in Policy P12

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Question whether Eu1d) will be effective as concerned that private open space intended for public access cannot be appropriately protected through conditions.	Old Oak Interim Neighbourhood Forum, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Public access to private realm can be controlled through S106. Controls in respect of this are set out in Policy D2.
Not an effective policy as it fails to recognise different types of green space	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. A wide range of open space provision has been addressed in the Local Plan. Part d) of the policy requires open space to provide for a variety of functions, including incorporating biodiversity and urban greening. In addition, developers will be required to conform with London Plan provision for play areas and other amenity. Policy EU2 also requires development to be biodiversity positive.
Support the target but warn that 30% public open space could result in tall buildings impacting on surrounding areas	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Proposals for tall buildings would need to be assessed against relevant planning policy, including policies in the local plan, London Plan and against other material planning considerations.
OPDC has not notified or supported communities establishing Local Green Spaces	Hammersmith Society, Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. This is dealt with in policy DI3 which supports community build, ownership and management arrangements. OPDC will seek to work with local communities to identify and establish local open spaces where viable.
Concern over who provides publicly accessible open space and how access is guaranteed in the long run if it is in private hands. Also issue of definition of publicly accessible open space and public open space.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette	Change proposed. The wording has been standardised through the Local Plan to 'publicly accessible open space'.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
	Hollender, Jeremy Aspinall, Thomas Dyton	
Need provision of public open space in Park Royal for workforce	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC recognises the need for public open space in Park Royal and the place policies have identified where these should be delivered. It is not considered appropriate to secure 30% public open space in SIL, where schemes are likely to be industrial led and compromise public open space quality and function.
Accessible greenspace suitable for children from Wells House Road should be provided as part of new development.	Wells House Road Residents Association, Catherine Sookha, Joanna Betts, Ralph Scully	No change proposed. The Local Plan covers provision of publicly accessible open space throughout the area and will work to ensure that adequate publicly accessible open space is provided.
The second statement in bullet point a) is not considered to be in accordance with national or London Plan policy on MOL. Bullet point (b) is also unacceptable. Currently there is scope for developers to comply with the policy but cause undesirable impacts in terms of access to open space. Para 6.14 should not allow developers to obviate their responsibilities to contribute to the overall quota of Open Space.	LBHF, Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. Access has been added to the policy. OPDC considers that the policy complies with the NPPF and is in general conformity with the London Plan and NPPF. Paragraph 6.14 does not allow developers to obviate their responsibility but rather recognises and makes allowances for the fact that on some sites there is insufficient land or the land that is available is in a location that will not make a valuable contribution to the overall provision of green space.
Query about whether the list of requirements in d) is required of every private and communal open space	Old Oak Park Ltd, Castlepride Ltd	Change proposed. The wording has been amended to recognise that it is a number of the requirements, not necessarily all.
Policy EU1 should recognise the function of open space in providing sport and recreation.	Sport England	Change proposed. This has been added to the policy.
Role of sport and recreation in open spaces has not been given enough prominence and should be mentioned specifically in the policy including protection against the loss of playing fields given the difficulty in reproviding in an area of this character.	Sport England	Change proposed. The role of sport and recreation will be further strengthened in Policy TCC6 which will cross reference EU1. In addition, the wording in supporting text has been amended to strengthen this objective.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
The requirement for 30% publicly accessible open space is excessive given the presence of Wormwood Scrubs.	Old Oak Park Limited	Noted. See response to comment EU1/6 from the first regulation 19 draft Local Plan.
Objection to requiring payments for residents and workers separately as they would use the same open space but at different times	Old Oak Park Limited	Noted. See response to comment EU1/7 from the first regulation 19 draft Local Plan.
Support the objective to deliver a minimum 30% of developable area as publicly accessible open space, but this requirement should also apply to SIL.	The Inland Waterways Association	No change proposed. OPDC recognises the need for public open space in Park Royal and Policy SP8 and the Park Royal place policies have identified where new space should be delivered. It is not considered appropriate to secure 30% public open space in SIL, where schemes are likely to be industrial led and compromise public open space quality and function.
Welcome amendment to Policy EU1 recognising the function of open space in providing recreation and sports space.	Sport England	Noted.
LBHF, as local authority provider for the maintenance and management of open space, should be party to any plans or agreements for the maintenance of open space to ensure additional costs do not occur as a result of new development .	London Borough of Hammersmith and Fulham	Noted. Policy SP8 requires proposals to submit a Green Infrastructure and Open Space Strategy and Management Plan (GIOSSMP) where they will be expected to outline arrangements for the management and upkeep of green infrastructure provision, including longer term revenue funding. For larger public spaces, developers will be expected to consult with the relevant local authority early in the planning process to determine whether public adoption and management of new public open spaces is appropriate and/or feasible. Further guidance of the

What is the issue?	Who raised the issue?	What are we doing to address the issue?
		management arrangements for public open spaces will be included within the Planning Obligations SPD and potential other supplementary guidance.
Policy EU1 should be revised to remove reference to the loss of MOL being offset by provision of an equivalent quantum elsewhere. This is not considered appropriate, and is not in accordance with London Plan.	London Borough of Hammersmith and Fulham	No change proposed. Metropolitan Open Land (MOL) benefits from the same national guidance as Green Belt, and Policy EU1 accords with the National Planning Policy Framework paragraph 88 by stating that the loss of MOL will only be permitted in very special circumstances set out in the NPPF. The requirement to for re-provision resulting in loss or harm to MOL in an additional requirement Policy EU1 places on relevant proposals, and will only be applied where proposals satisfy the very special circumstances required by the NPPF.
Support specific references in the Policy and supporting text to SuDS in relation to the range of functions that open space in the OPDC area should provide.	London Borough of Hammersmith and Fulham	Noted.
New open spaces should also have a function of remedying deficiencies in access to open spaces for existing residential areas.	Grand Union Alliance	No change proposed. Policy SP8 notes that future areas of publicly accessible open space in the OPDC area will provide for the needs of people living and working in the area. This includes existing residential communities.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations

Environmental Standards Study	The development should support the delivery of the spatial vision by delivering and/or contributing towards a high quality, multi-functional green and blue infrastructure network, i.e. accessible for play and recreation, promotes walking or cycling safely, and supports wildlife, urban cooling and flood management. Proposals should: A. Provide a minimum of 30% of Old Oak's total area allocated to publicly accessible open space, which should consist of a network of well-managed, high quality, multi-functional green and civic open spaces and Green Streets, which are linked to the wider London Green Grid and Blue Ribbon Network; • This equates to approximately 4.14sqm per resident and 1sqm per worker. • In addition to provision of at least 30% accessible open space, developers should contribute towards ensuring that these spaces provide a good mix of facilities, are fully accessible, well located and properly managed and maintained; • Wormwood Scrubs is excluded from the 30% but it would be required to fulfil the role of a district park, providing good quality access to outdoor sports facilities and open space. An open space strategy will review the capacity of this open space and its facilities to identify what facilities should be provided within the development site and where facilities and open space on Wormwood Scrubs could be enhanced through developer contributions; B. Contribute towards and/or deliver 3 new local parks that are no less than 2ha in size and a range of small public open spaces and pocket parks; C. Provide a minimum 10sqm of dedicated play equipment per child; D. Incorporate a Grand Union Canal Linear Park; E. Limit overshading of open spaces. Public and private spaces should benefit from good light and microclimate, at least 2 hours of daylight on 21st March into 50% of space in line with BRE guidance; F. Aim to be biodiversity positive, in which biodiversity rich, multi-benefit, multifunctional green spaces and water bodies are highly interconnected and closely integrated with the wider green infrastructure network in a clear functional hierarchy; G. Make a positive contribution towards climate change. Green infrastructure should be maximised to provide summer shade and cooling, to the buildings and external environment, and appropriate provision for localised surface water attenuation, including sustainable drainage techniques; H. In order to ensure the long term quality and performance of green infrastructure is sustained, developments will be expected to contribute to its management and maintenance. Developers will be required to provide a detailed management plan which should set out the longer term revenue funding arrangements for open spaces and commitments around continual public access; **Private and Semi-Private Amenity Space** All new housing must be designed in accordance with the London Plan provision and standards of private amenity space. A minimum of 5sqm of private outdoor space should be provided for all 2 person dwellings and an extra 1sqm for each additional occupant. The required minimum width and minimum depth for all balconies and other private external space is 1500mm. Communal gardens for residents, such as courtyards and terraces need to be: • Of sufficient size to be useable and inviting;

	• Well designed and integral to the character of the development; At least 50% of each residential courtyard space should be sunlit for at least 2 hours a day on 21 March. **Local Food Production** New allotments for local food growing spaces will be supported, including the temporary use of vacant or derelict land or buildings. Use of incidental open space on housing estates or other open space areas will also be supported where this does not conflict with other policy objectives or land use priorities. Areas such as roofs, balconies, walls, courtyards and amenity areas can also be used for food growing.
Infrastructure Delivery Plan	• Identifies the infrastructure required to support the regeneration of the area, including social, transport, utility and green infrastructure. • **5.2. Open Space:** In the creation of this new part of London the provision of open space and the ability of the population to access open space will be extremely important and contribute to the success of the area in a number of ways including social cohesion, health and wellbeing, as well as general environmental and biodiversity benefits. There are a range of open space projects identified in the Infrastructure Schedule. There are those that identify existing open space that would benefit from enhancement and the creation of new open spaces. Some spaces will be designed to perform more of a civic function while others are intended for green space.
Public Realm, Walking and Cycling Strategy	• Open Spaces should be easily accessible from Old Oak High Street and visible to provide places to stop, relax for people of all ages and groups.
Precedent Study	• Takes lessons from local and international schemes relevant to the type of development envisioned within the OPDC area on how to deliver quality open spaces.
Sites of Importance for Nature Conservation Statement	• A summary of the evidence and approach used in designating Sites of Importance for Nature Conservation (SINC) as part of the OPDC Local Plan.

Other evidence base

Supporting study	**Recommendations**

The Mayor's Green Infrastructure Taskforce Report	• Green infrastructure in a future city should be informed by and deliver the following five objectives:
	  o Promoting Healthy Living
	  o Strengthening Resilient Living
	  o Encouraging Active Living
	  o Creating Living Landscapes
	  o Enhancing Living Space
	• The economic value of green infrastructure needs to be measured based on the full range of benefits it provides.
	• New mechanisms for the funding and management of green infrastructure us required.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	• This standard (Old Oak open space) would also be appropriate for new build in Park Royal (SIL);	• Open space requirements for developments within the Park Royal SIL will be addressed through a future Park Royal SPD

Other evidence base

Supporting Study	Recommendations
The Mayor's Green Infrastructure Taskforce Report	• Green infrastructure in a future city should be informed by and deliver the following five objectives: o Promoting Healthy Living o Strengthening Resilient Living o Encouraging Active Living o Creating Living Landscapes o Enhancing Living Space • The economic value of green infrastructure needs to be measured based on the full range of benefits it provides. • New mechanisms for the funding and management of green infrastructure us required.

EU2: Urban Greening and Biodiversity

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
7	There are three dimensions to sustainable development: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles: • An **environmental** role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.
9	Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life, including (but not limited to): • moving from a net loss of bio-diversity to achieving net gains for nature;
17	.promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage, or food production);"…
99	Local Plans should take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure.
109	The planning system should contribute to and enhance the natural and local environment by: • minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
114	Local planning authorities should: • Set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure • Maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast
117	To minimise impacts on biodiversity and geodiversity, planning policies

	should: • plan for biodiversity at a landscape-scale across local authority boundaries; • identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation; • promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; • aim to prevent harm to geological conservation interests; and • where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.
118	When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:.. • Opportunities to incorporate biodiversity in and around developments should be encouraged…

National Planning Practice Guidance

Policy/ paragraph reference	**Policy and paragraph text**
Open Space, Sports and Recreation Facilities	
Title: How should open space be taken into account in planning? Paragraph: 001 Reference ID: 37-001-20140306 Revision Date: 06.03.2014	Open space should be taken into account in planning for new development and considering proposals that may affect existing open space. Open space, which includes all open space of public value, can take many forms, from formal sports pitches to open areas within a development, linear corridors and country parks. It can provide health and recreation benefits to people living and working nearby; have an ecological value and contribute to green infrastructure, as well as being an important part of the landscape and setting of built development, and an important component in the achievement of sustainable development. It is for local planning authorities to assess the need for open space and opportunities for new provision in their areas. In carrying out this work, they should have regard to the duty to cooperate where open space serves a wider area. See guidance on Local Green Space designation, which may form part of the overall open space network within an area.
Natural Environment	
Title: How should local planning authorities set about planning for biodiversity and geodiversity? **Paragraph:** 008 **Reference ID:**	Local and neighbourhood plans and planning decisions have the potential to affect biodiversity or geodiversity outside as well as inside designated areas of importance for biodiversity or geodiversity. Equally, they should consider the opportunities that individual development proposals may provide to enhance biodiversity and contribute to wildlife and habitat connectivity in the wider area.

8-008-20140306 **Revision Date:** 06.03.2014	
Title Is there a statutory basis for planning to seek to minimise impacts on biodiversity and provide net gains in biodiversity where possible? **Paragraph** 007 **Reference ID:** 8-007-20140306 **Revision Date:** 06 03 2014	Yes. Section 40 of the Natural Environment and Rural Communities Act 2006, which places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and decision making throughout the public sector, which should be seeking to make a significant contribution to the achievement of the commitments made by government in its Biodiversity 2020 strategy. Guidance on statutory obligations concerning designated sites and protected species is published separately because its application is wider than planning and links are provided to external guidance. Local planning authorities should take a pragmatic approach – the aim should be to fulfil statutory obligations in a way that minimises delays and burdens. The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.
Title: How are ecosystems services taken into account in planning? **Paragraph:** 013 **Reference ID:** 8-013-20160211 **Revision Date:** 11 02 2016	The National Planning Policy Framework states that the planning system should recognise the wider benefits of ecosystem services. Information about ecosystems services is in Biodiversity 2020: A strategy for England's biodiversity and ecosystems services. An Introductory guide to valuing ecosystems services has also been published by Defra along with a practice guide, which could, where appropriate, inform plan-making and decision-taking on planning applications. The National pollinator strategy: for bees and other pollinators in England is a 10 year plan to protect pollinating insects which support our food production and the diversity of our environment.
Title: How should biodiversity be taken into account in preparing a planning application? **Paragraph:** 016 **Reference ID:** 8-016-20140612 **Revision Date:** 12 06 2014	Information on biodiversity impacts and opportunities should inform all stages of development (including, for instance, site selection and design including any pre-application consultation as well as the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate. Pre-application discussion can help scope whether this is the case and, if so, the survey work required. Where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present. Separate guidance is to be published by Defra on statutory obligations in regard to protected

	species which will replace the advice set out in Circular 06/05: biodiversity and geological conservation. Local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. Further guidance on information requirements is set out in making an application. Planning conditions, legal agreements or undertakings may be appropriate in order to provide for monitoring and/or biodiversity management plans where these are needed.
Title: How can development not only protect but also enhance biodiversity? **Paragraph:** 017 **Reference ID:** 8-017-20140306 **Revision Date:** 06 03 2014	Biodiversity maintenance and enhancements through the planning system have the potential to make a significant contribution to the achievement of Biodiversity 2020 targets. Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include: • habitat restoration, re-creation and expansion; • improved links between existing sites; • buffering of existing important sites; • new biodiversity features within development; and • securing management for long term enhancement.
Title: Where significant harm to biodiversity is unavoidable, how can mitigation or compensation measures be ensured? **Paragraph:** 020 **Reference ID:** 8-020-20140306 **Revision Date:** 06.03.2014	The usual means to ensure that mitigation or compensation measures are secured is through planning conditions or planning obligations, depending on circumstances. Where compensation is required a number of avenues have been available. The applicant might offer a scheme tailored to the specific context, or consider the potential for biodiversity offsetting with the local planning authority. Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for residual adverse biodiversity impacts arising from a development after mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity. Special compensation considerations apply in the case of sites protected by the European Habitats and Wild Birds Directives. If harm to such sites is to be allowed (because there are no alternatives and 'imperative reasons of overriding public interest' can be shown) the Directive requires that all necessary compensatory measures are taken to ensure the overall coherence of the network of European sites as a whole is protected.
Green Infrastructure	
Title: Why is green infrastructure important	Green infrastructure is important to the delivery of high quality sustainable development, alongside other forms of infrastructure such as transport, energy, waste and water. Green infrastructure provides multiple benefits, notably ecosystem services, at a range

to delivering sustainable development? **Paragraph:** 028 **Reference ID:** 8-028-20160211 **Revision Date:** 11 02 2016	of scales, derived from natural systems and processes, for the individual, for society, the economy and the environment. To ensure that these benefits are delivered, green infrastructure must be well planned, designed and maintained. Green infrastructure should, therefore, be a key consideration in both local plans and planning decisions where relevant.
Title: What is a strategic approach to green infrastructure? **Paragraph:** 029 **Reference ID:** 8-029-20160211 **Revision Date:** 11 02 2016	To assist in planning positively for green infrastructure local planning authorities may wish to prepare an authority-wide green infrastructure framework or strategy. This should be evidence-based by, for example, including an assessment of current green infrastructure provision that identifies gaps in the network and the components and opportunities for improvement. The assessment can inform the role of green infrastructure in local and neighbourhood plans, infrastructure delivery plans and Community Infrastructure Levy (CIL) schedules. Local Plans should identify the strategic location of existing and proposed green infrastructure networks. Where appropriate, supplementary planning documents can set out how the planning, design and management components of the green infrastructure strategy for the area will be delivered. This strategic approach to green infrastructure may cross administrative boundaries. Therefore neighbouring authorities, working collaboratively with other stakeholders including Local Nature Partnerships (LNPs) and Local Enterprise Partnerships (LEPs), may wish to consider how wider strategies for their areas can help address cross-boundary issues and help meet the Duty to Cooperate.
Title: How can green infrastructure help to deliver wider planning policy? **Paragraph:** **030** **Reference ID:** 8-030-20160211 **Revision Date:** 11 02 2016	Green infrastructure can help to deliver a variety of planning policies including: Building a strong, competitive economy: Green infrastructure can drive economic growth and regeneration, helping to create high quality environments which are attractive to businesses and investors. Delivering a wide choice of high quality homes: Green infrastructure can help deliver quality of life and provide opportunities for recreation, social interaction and play in new and existing neighbourhoods. More broadly, green infrastructure exists within a wider landscape context and can reinforce and enhance local landscape character, contributing to a sense of place. Green infrastructure is also an important approach to delivering ecosystem services and ecological networks. Requiring good design: Well-designed green infrastructure helps create a sense of place by responding to, and enhancing, local landscape character. Green infrastructure can also help create safe and accessible

	environments in new development and the regeneration of brownfield sites in existing built up areas. Promoting healthy communities: Green infrastructure can improve public health and community wellbeing by improving environmental quality, providing opportunities for recreation and exercise and delivering mental and physical health benefits. Green infrastructure also helps reduce air pollution, noise and the impacts of extreme heat and extreme rainfall events. Meeting the challenge of climate change, flooding and coastal change: Green infrastructure can help urban, rural and coastal communities mitigate the risks associated with climate change and adapt to its impacts by storing carbon; improving drainage (including the use of sustainable drainage systems) and managing flooding and water resources; improving water quality; reducing the urban heat-island effect and; where appropriate, supporting adaptive management in coastal areas. Green infrastructure networks also help species adapt to climate change by providing opportunities for movement. Conserving and enhancing the natural environment: The components of green infrastructure exist within the wider landscape context and should enhance local landscape character and contribute to place-making. High quality networks of multifunctional green infrastructure provide a range of ecosystem services and can make a significant contribution to halting the decline in biodiversity.
Air Quality	
Title: How can an impact on air quality be mitigated? **Paragraph:** 008 **Reference ID:** 32-008-20140306 **Revision Date:** 06.03.2014	Mitigation options where necessary will be locationally specific, will depend on the proposed development and should be proportionate to the likely impact. It is important therefore that local planning authorities work with applicants to consider appropriate mitigation so as to ensure the new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met. Examples of mitigation include: • Using green infrastructure, in particular trees, to absorb dust and other pollutants
Design	
Title: Planning should promote a network of greenspaces (including parks) and public places Paragraph: 009 Reference ID:	Development should promote public spaces and routes that are attractive, accessible, safe, uncluttered and work effectively for all users – including families, disabled people and elderly people. A system of open and green spaces that respect natural features and are easily accessible can be a valuable local resource and helps create successful places. A high quality landscape, including trees and semi-natural habitats where appropriate, makes an important contribution to the quality of an area.

26-009-20140306 Revision Date: 06.03.2014	
Climate Change	
Title: How can adaption and mitigation approaches be integrated? **Paragraph:** 004 **Reference ID:** 6-004-20140612 **Revision Date:** 12.06.2014	When preparing Local Plans and taking planning decisions local planning authorities should pay particular attention to integrating adaptation and mitigation approaches and looking for 'win-win' solutions that will support sustainable development. This could be achieved in a variety of ways, for example: • Through the provision of multi-functional green infrastructure, which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle.

London Plan (2016) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 2: London's Places	
Policy 2.18 Green Infrastructure: the multi-functional network of green and open spaces	Boroughs should: • set out a strategic approach to planning positively for the creation, protection, enhancement and management of networks of green infrastructure by producing green infrastructure strategies that cover all forms of green and open space and the interrelationship between these spaces. These should identify priorities for addressing deficiencies and should set out positive measures for the design and management of all forms of green and open space; • Delivery of local biodiversity action plans should be linked to these strategies. • ensure that in and through DPD policies, green infrastructure needs are planned and managed to realise the current and potential value of these to communities and to support delivery of the widest range of linked environmental and social benefits; • in London's urban fringe support, through appropriate initiatives, the vision of creating and protecting an extensive and valued recreational landscape of well-connected and accessible countryside around London for both people and wildlife.
Chapter 5: London's Response to Climate Change	
Policy 5.3 Sustainable Design and Construction	Planning decisions • Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:

	o promoting and protecting biodiversity and green infrastructure. LDF preparation • Within LDFs boroughs should consider the need to develop more detailed policies and proposals based on the sustainable design principles outlined above and those which are outlined in the Mayor's supplementary planning
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 20501. Planning decisions • 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 • Boroughs should identify areas where urban greening and green infrastructure can make a particular contribution to mitigating
Policy 5.11 Green roofs and development environs	Planning decisions • 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: o a adaptation to climate change (ie aiding cooling) o b sustainable urban drainage o c mitigation of climate change (ie aiding energy efficiency) o d enhancement of biodiversity o e accessible roof space o f improvements to appearance and resilience of the building o g growing food. LDF preparation • 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.
Chapter 7: London's Living Spaces and Places	
Policy 7.18 Protecting open space and addressing deficiency	The Mayor supports the creation of new open space in London to ensure satisfactory levels of local provision to address areas of deficiency. Planning decisions The loss of protected open spaces must be resisted unless equivalent or better-quality provision is made within the local catchment area. Replacement of one type of open space with another is unacceptable unless an up to date needs assessment shows that this would be appropriate.

	LDF preparation When assessing local open space needs LDFs should: • include appropriate designations and policies for the protection open space to address deficiencies • identify areas of open space deficiency, using the open space categorisation set out in Table 7.2 as a benchmark for all the different types of open space identified therein • ensure that future publically accessible open space needs are planned for in areas with the potential for substantial change such as opportunity areas, regeneration areas, intensification areas and other local areas. • ensure that open space needs are planned in accordance with green infrastructure strategies to deliver multiple benefits. Boroughs should undertake audits of all forms of open space and assessments of need1. These should be both qualitative and quantitative, and have regard to the cross-borough nature and use of many of these open spaces.
Policy 7.19 Biodiversity and access to nature	The Mayor will seek to encourage and support thriving farming and land-based sectors in London, particularly in the Green Belt. Use of land for growing food will be encouraged nearer to urban communities via such mechanisms as 'Capital Growth'. Boroughs should protect existing allotments. They should identify other potential spaces that could be used for commercial food production or for community gardening, including for allotments and orchards. Particularly in inner and central London innovative approaches to the provision of spaces may
Policy 7.21 Trees and woodlands	Strategic • 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 has produced 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 a green infrastructure strategy. Planning decisions • 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'1. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species. LDF preparation • Boroughs should follow the advice of paragraph 118 of the NPPF to protect 'veteran' trees and ancient woodland where these are not already part of a protected site. • Boroughs should develop appropriate policies to implement their borough tree strategy.

Draft New London Plan (2017) Policies

Policy/ paragraph reference	Policy and paragraph text
Chapter 1 Planning London's Future	
Policy GG2 Making the best use of land	To create high-density, mixed-use places that make the best use of land, those involved in planning and development must: D Protect London's open spaces, including the Green Belt, Metropolitan Open Land, designated nature conservation sites and local spaces, and promote the creation of new green infrastructure and urban greening.
Policy GG3 Creating a healthy city	To improve Londoners' health and reduce health inequalities, those involved in planning and development must: E Plan for improved access to green spaces and the provision of new green infrastructure
Chapter 3 Design	
Policy D1 London's form and characteristics	Development Plans, area-based strategies and development proposals should address the following: B Development design should: • 5) provide spaces and buildings that maximise opportunities for urban greening to create attractive resilient places that can also help the management of surface water
Policy D7 Public realm	Development Plans and development proposals should: H Incorporate green infrastructure into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, manage heat and increase biodiversity.
Chapter 8 Green Infrastructure and Natural Environment	
Policy G1 Green infrastructure	A London's network of green and open spaces, and green features in the built environment such as green roofs and street trees, should be protected, planned, designed and managed as integrated features of green infrastructure. B Boroughs should prepare green infrastructure strategies that integrate objectives relating to open space provision, biodiversity conservation, flood management, health and wellbeing, sport and recreation. C Development Plans and Opportunity Area Planning Frameworks should: 1) identify key green infrastructure assets, their function and their potential function 2) identify opportunities for addressing environmental and social challenges through strategic green infrastructure interventions.
Policy G5 Urban greening	A Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage. B Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development.
Policy G6 Biodiversity	A Sites of Importance for Nature Conservation (SINCs) should be protected. The greatest protection should be given to the most significant sites.

and access to nature	B In developing Development Plan policies, boroughs should: 1) use the relevant procedures to identify SINCs and green corridors. When undertaking comprehensive reviews of SINCs across a borough or when identifying or amending Sites of Metropolitan Importance boroughs should consult the London Wildlife Sites Board 2) identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them 3) seek opportunities to create habitats that are of particular relevance and benefit in an urban context 4) include policies and proposals for the protection and conservation of priority species and habitats and opportunities for increasing species populations 5) ensure sites of European or national nature conservation importance are clearly identified and appropriately assessed. C Where harm to a SINC (other than a European (International) designated site) is unavoidable, the following approach should be applied to minimise development impacts: 1) avoid adverse impact to the special biodiversity interest of the site 2) minimise the spatial impact and mitigate it by improving the quality or management of the rest of the site 3) seek appropriate off-site compensation only in exceptional cases where the benefits of the development proposal clearly outweigh the biodiversity impacts. D Biodiversity enhancement should be considered from the start of the development process. E Proposals which create new or improved habitats that result in positive gains for biodiversity should be considered positively, as should measures to reduce deficiencies in access to wildlife sites.
Policy G7 Trees and woodlands	A Trees and woodlands should be protected, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees. B In their Development Plans, boroughs should: 1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site 2) identify opportunities for tree planting in strategic locations. C Development proposals should ensure that, wherever possible, existing trees of quality are retained108. If it is imperative that trees have to be removed, there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.
Chapter 9 Sustainable Infrastructure	
Policy SI4 Managing heat risk	B Major development proposals should demonstrate through an energy strategy how they will reduce the potential for overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy: 2) reduce the amount of heat entering a building through orientation, shading, albedo, fenestration, insulation and the provision of green roofs and walls

Policy SI13 Sustainable drainage	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 in line with the following drainage hierarchy: 1) rainwater harvesting (including a combination of green and blue roofs) 2) infiltration techniques and green roofs D Drainage should be designed and implemented in ways that address issues of water use efficiency, river water quality, biodiversity, amenity and recreation.
Chapter 10 Transport	
Policy T2 Healthy Streets	B Development Plans should: 2) identify opportunities to improve the balance of space given to people to dwell, walk, cycle, and travel on public transport and in essential vehicles, so space is used more efficiently and streets are greener and more pleasant.

Mayor of London's All London Green Grid 2012 (SPG)

Policy/ paragraph reference	**Policy and paragraph text**
4.15	There are over 1500 wildlife sites across London covering 18% of the city's area. These sites have been designated for protection due to their importance for nature conservation, ranging from nationally important Sites of Special Scientific Interest (SSSIs) to community managed reserves. They are the priorities for protection and management for biodiversity. They need to be conserved and enhanced for their own sake, as a resource of local, national and international importance in a city that is comparatively more wildlife-rich than much of its intensively farmed rural hinterland.
4.39 to 4.41	Promote sustainable design, management and maintenance 4.39 The design, management and maintenance of green infrastructure need to be of a high standard in order to meet the ALGG vision. Green infrastructure that plugs in to the existing green space network needs to be planned and designed as an integrated part of all new development proposals and regeneration programmes and the resources for management and maintenance identified and secured. 4.40 Understanding the context of green space within the urban environment is an essential prerequisite to ensuring a more sustainable approach to design, management and maintenance. An approach recognising that existing green spaces can provide a wide range of benefits over and above their recreation functions and aesthetic values ensures that management plans and investment strategies fully address the future requirements of the space as part of a network of green infrastructure assets (Policies 2.18 and 7.1). 4.41 For example, incorporating Sustainable Drainage Systems (SUDS) can reduce surface water runoff in a more natural way as well as providing amenity value and benefits for wildlife. There are a number of SUDS design approaches that can be applied to suit the circumstances of the location including: • rainwater harvesting; • swales;

	• soakaways; • green roofs; • gravel and grass; • permeable and porous pavements; and • basins, ponds and reed beds that can store water. Incorporating green roofs into the design and delivery of projects and proposals can have a wide range of benefits including: • Helping to manage surface water; • Reducing the Urban Heat Island effect; • Enhancing biodiversity; • Providing insulation; • Reducing pollution; and • Helping to protect and prolong the life of the roof.

Mayor of London's Sustainable Design and Construction (SPG)

Policy/ paragraph reference	**Policy and paragraph text**
Use Less Energy 2.4.10	2.4.10 Following are some of the easiest and most cost-effective measures developments can incorporate to help them reach the London Plan carbon dioxide targets. Some measures can be directly influenced through design and therefore are direct planning matters. Other internal design features and mechanical systems are influenced by the Building Regulations. Both types of measures will need to be implemented to help developments reach the London Plan carbon dioxide targets. In their energy assessment developers should demonstrate how they have considered, and where practical included the following measures: Passive and design measures • incorporate green roofs, green walls and other green infrastructure which can keep buildings warm or cool and improve biodiversity and contribute to sustainable urban drainage;
2.8 Nature Conservation and Biodiversity	2.8.2 Developments should be sensitively designed so that there is no net loss in the quality and quantity of habitat across a development site and to enhance biodiversity and increase connectivity between patches of urban habitat. Protected species 2.8.3 Certain species are protected under UK and European legislation. Natural England provides a list of protected species as well as guidance relating to these protected species. 2.8.4 Certain development activities within the vicinity of protected species and their habitats require a licence from Natural England. It is the developer's responsibility establish the likelihood of the presence of any protected and priority species on their site, or within the vicinity of their site. Initial information can be identified from a local or the London wide54 records centre or a survey by a competent person may be required. The detail and length of the survey period will depend on the suspected likelihood of the presence of protected species and what the species is. The site may only be used for part of the year by a protected species. It is also the developer's responsibility to ensure that they have complied with all legislation with regards to protected species when developing their site. The protected

	species most likely to be encountered on development sites in London are bats, badgers, water vole, great crested newt and reptiles (grass snake, common lizard and slow-worm). Specialist advice on how to manage and protect specific species can be found on Natural England's website and from the London Wildlife Trust or from specialist conservation bodies for individual species such as the Royal Society for the Protect of Birds (RSPB), Buglife and the Bat Conservation Trust. Protected sites 2.8.5 Certain sites are protected by UK and European legislation. Sites include those designated as: • International55 - special areas of conservation (SACs), special protected areas (SPAs) and Rasmar sites; and • National - Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs). Other sites protected by land-use planning policy • London wide - sites of metropolitan importance for nature conservation; and • Local - sites of borough and local importance for nature conservation. 2.8.6 Where proposals are in the vicinity of these sites developers will have to carry out an assessment of the potential impacts the scheme could have on these sites, including the connectivity of this site with other nature conservation sites. The assessment should be commensurate to the scale of the development and the statutory or non-statutory protection afforded to the site . The assessment needs to have informed the design of the development, which should minimise impacts, including on the connectivity of green corridors. Where it is assessed there will be adverse impacts on biodiversity or the connectivity of ecological sites sufficient mitigation measures are to be incorporated into the construction and occupation stages. The assessment needs to be submitted alongside the planning application. 2.8.7 The development of land use policy documents and some large development proposals or projects will need to be informed by Appropriate Assessments under the European Union Habitats Directives if they are likely to have an impact on European sites (SACS and SPAs). This assessment is the responsibility of the determining authority . Biodiversity Action Plans 2.8.8 Developers and local planning authorities should have regard to additional species and habitats that are identified at the national, London or local level as priorities for protection and enhancement. This includes species which are of a particular conservation priority in London such as, for example swifts and stag beetles . Development proposals 2.8.9 In accordance with London Plan Policy 7.19 developers should adhere to the following hierarchy when considering biodiversity on their development site: 1. avoid adverse impact to the biodiversity interest by: • identifying the biodiversity interest within the site • considering the particular structure of landscape or vegetation required by any important plant or animal species;

	• carefully considering the location, design, form and foundation requirements for the development to protect existing biodiversity as well as the length and timing of the construction phase and the specific processes involved ; and • considering the implications of the development on changes to the local natural environment over time, for example space required for maturing trees, the impact of additional lighting and noise. 2. minimise impact and seek mitigation, biodiversity impacts should be reduced as far as reasonably possible. This can be achieved by undertaking appropriate ecological surveys in advance of any planning application to guide and inform the design of the development (as set out in paragrapgh 2.8.4. These steps should be followed and an explanation provided with planning applications: • give priority to retaining any existing valuable habitat, vegetation, species populations or ecological features; • provide connectivity to existing green and nature conservation spaces by contributing to 'buffer habitat', 'stepping stones' and 'corridors; and • provide new habitat within the development of equal or greater biodiversity value. See paragraph 2.8.11 for examples of habitat creation. 3. only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation which could include: • provision of off-site replacement habitat; and • provision of a financial contribution or other resources to enable adjacent land managers to improve the quality of their ecological resource. 2.8.10 Where required, an assessment needs to be submitted alongside a planning application. It should be noted that for important species or habitat, knowledge of seasonal fluctuations and dependencies may be necessary, requiring surveying effort that adequately captures a full annual cycle. Also any mitigation or compensation measures need to be identified at planning application stage and secured by condition or s106 agreement. All compensation habitat must be maintained to ensure its establishment and long term survival. Details of management and maintenance measures to be put in place are to be set out in a management plan. All biodiversity assessments and proposal for protection, mitigation and replacement should be prepared by a suitably qualified person. Developers are encouraged to provide this data to the Greenspace Information for Greater London (GIGL). Promoting the creation of additional Habitat 2.8.11 In addition to following the hierarchy described above new habitat provision should be provided as part of a development's urban greening measures. This can include ecologically sensitive landscaping, including water features or new habitat provided on buildings, such as in the form of green roofs and walls and roof gardens, ponds and wetlands potentially incorporated with SuDs and bird and bat boxes and insect habitats. Habitat provided on a building can benefit some species but cannot fully replace habitat lost at ground level. There are numerous web-sites that provide information on how to include and enhance biodiversity on development sites. See the Signpost adjacent for a few of these resources. 2.8.12 The potential to increase biodiversity in public realm improvements should be maximised. The ecological enhancement of urban greening measures in the public realm can in particular increase the connectivity

	between existing areas of urban habitat. The Mayor's All London Green Grid SPG identifies opportunities for improving the connectivity of green infrastructure, including the creation of corridors for nature conservation, across London .

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle D2	Proposals should: Deliver a grid of amenity spaces (public, private, communal) that contributes to the creation of healthy Lifetime Neighbourhoods as depicted in figure 14 and that: a. contributes to the delivery of the Mayor's All London Green Grid SPG; b. caters for the needs of new and existing communities; c. are laid out as a well-connected legible grid; d. are well-designed and with clear management and maintenance plans; e. facilitates clear connections between stations; f. protects, improves and connects into existing open spaces; g. includes coordinated urban greening along streets, in public open spaces and along the Grand Union Canal; h. connects biodiversity assets to support habitat resilience; and i. mitigates flood risk through the delivery of sustainable urban drainage measures.
Principle E5	Proposals should: a. Create a network of amenity spaces connected by soft landscaping and tree planting to encourage healthy, walkable neighbourhoods; b. Use green infrastructure to sustainably manage rainwater (see water section); c. Retain and enhance the value of existing ecological or nature conservation assets; d. Improve ecological connectivity by enhancing existing green corridors such as the canal and railway lines; and e. Help reduce temperatures in hot weather and intensification of the urban heat island effect through providing shading and evaporative cooling and green and brown roofs and walls.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	Alternative policy option
12.85	No alternative policy options have been identified as an alternative approach would be to not have proactive policies for the delivery of new and enhance existing GI and this would not be consistent with the NPPF or in general conformity with the London Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Nature Reserve: Support for keeping the nature reserve in its current location. Some suggested it could be relocated but the Plan would need to ensure that areas of biodiversity and wilderness and maintained in Old Oak South.	Diocese of London, Midland Terrace Resident's Group, Old Oak Interim forum, Hammersmith and Fulham Historic Buildings Group, TITRA, 2 local residents, 2 local residents.	Noted. The starting point for the nature reserve would be to seek to retain and upgrade it as a key amenity and biodiversity space. However, it is recognised that there are essential and large infrastructure requirements in and around the nature reserve. As their detailed design is progressed, it may be more appropriate to relocate the space elsewhere within the scheme. Any relocation of the open space would need to be undertaken in accordance with Policies EU1 (open space) and EU2 (urban greening and biodiversity).
Embankment: The embankment to the north-west should be retained as this is essential to delivering agreed ecological enhancements.	Friends of Wormwood Scrubs, 2 local residents	Noted. The Local Plan is not proposing the redevelopment of the IEP depot during the lifetime of the Plan. The Local Plan is not directly proposing the removal of the embankment; however, were ecology on the embankment to be affected by a proposal, OPDC would require development to provide an equivalent or greater amount of biodiversity on-site or provide a financial contribution to facilitate off-site enhancements in lieu of provision, in accordance with Policy EU2.
Ecological enhancements: Any ecological enhancements should be sensitive to the character of the Scrubs and should be decided by the Trust.	Friends of Wormwood Scrubs	Change proposed. Policy P12 sets out OPDC's commitment to agree any proposals with the Wormwood Scrubs Charitable Trust. The ecological protections in Wormwood Scrubs are referenced in the supporting text. Proposals would need to accord with Policy EU2, which

A number of proposals are put forward for ecological enhancements/objectives and key locations where these could take place.		seeks to conserve and enhance biodiversity.
Amount and types of open space: Policy D3 should specific quantum and range of open space needed to meet the needs of the new community. Open spaces should provide a range of roles including for attractions, social gatherings, biodiversity/nature, community events, street markets and quiet places.	Brent Council, Diocese of London, Grand Union Alliance, The Hammersmith Society, Hammersmith and Fulham Historic Buildings Group, 4 local residents	Change proposed. Policy EU1 (which supersedes D3) identifies that outside of Strategic Industrial Location (SIL), development should look to deliver a minimum 30% of the area as publicly accessible open space. The policy sets out that this should be delivered through local parks in locations identified in the places chapter, smaller open spaces, green streets and where it is not possible or desirable to deliver 30%, a contribution in lieu would be sought.

Regulation 19(1) consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
Strong support for EU2	Environment Agency, Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted
Monitoring should be based on a robustly assessed baseline and ensure that the evidence base includes detailed ecological studies and audits to establish a baseline and gaps.	Environment Agency	No change proposed. Applicants would be required to establish baselines through their Green Infrastructure and Open Space Management Plans.
Welcome monitoring reference in EU2 f)	Environment Agency	Noted.
Concerned about weak wording in the opening paragraph of the text. Should revise EU2 to reflect the	LBHF	Change proposed. The wording has been amended to remove 'seek to'.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
intention to “secure” rather than “seek to ensure”.		
lack of monitoring details	Friary Park Preservation Group	Noted. OPDC will provide an annual authority monitoring report which will report on progress in delivering Local Plan policies.
Policy unsound - no justification	Local resident	No change proposed. OPDC considers that the policy is sound.
Need greater emphasis on tree planting and thought to tree planting as part of street design	Hammersmith Society, Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policy T1 a) provides policy to support delivery of a healthy street network, which promotes the use of street trees. Policy EU2 promotes planting of mature and semi-mature trees along all streets.
Should support provision of allotments, both temporary and permanent	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policies EU1, P4 and D6 promote the provision of space for local food growing, which would include allotments.
There should be temporary greening during the construction phases.	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The Local Plan supports the provision of meanwhile uses, including open space, within Policy TCC9.
Development will disrupt green corridors along railway lines	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha,	No change proposed. Where a green corridor, SINCs and open space is disrupted or impacted on, developers are required to provide equivalent compensation in line with Policy EU2.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
	Lynette Hollender, Jeremy Aspinall, Thomas Dyton	
Development will negatively impact biodiversity	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policies EU1 and EU2 seek to protect and enhance existing open space and biodiversity, increase green cover and provide a net gain in biodiversity. Where biodiversity is impacted developers will be required to provide equivalent compensation.
More information is required on Urban Greening Factor	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The London Plan sets out more details on the Urban Greening Factor. SPG/SPD will be developed in due course.
Concern expressed about how variable and diverse urban greening will be.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The intention is that urban greening will be multi-functional and enhance the biodiversity in the area. An Urban Greening Factor policy has been included in the new draft London Plan (2017), which has been adopted in the OPDC Local Plan. The intention of the Urban Greening Factor is to ensure that a high quality of urban greening is provided.
Landscape planting should avoid high maintenance costs	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Management and maintenance costs will be taken into account when proposals are submitted by developers. Management and maintenance arrangements are required to be set out as part of Green Infrastructure and Open

What is the issue?	Who raised the issue?	What are we doing to address the issue?
		Space Strategies and Management Plans.
Semi wild areas should be retained	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The intention, set out in EU1 and EU2, is to preserve and enhance wherever possible all areas of existing green space and secure compensation where areas cannot be preserved. These must be of an equal function, quantum and quality. This includes semi wild areas which, where feasible, will be retained. Where invasive and non-native species are identified, these will have to be removed.
A tree and shrub community nursery/facility should be established on Wormwood Scrubs	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. This is outside the scope of the Local Plan and would be assessed against planning policy, which seeks to protect and enhance Wormwood Scrubs and protect its character as MOL.
Policy lacks necessary strategy, analysis and proposals	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC considers that the policies and supporting studies provide a robust level of evidence appropriate to the role and function of the Local Plan.
The canal warrants particular biodiversity policy focus and additional green corridors should be created across boroughs.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha,	No change proposed. Noted. Policy P3 sets out the importance of the Grand Union Canal to green infrastructure. The Grand Union Canal and the railway embankments are important green corridors that contain a good range of species. They

What is the issue?	Who raised the issue?	What are we doing to address the issue?
	Lynette Hollender, Jeremy Aspinall, Thomas Dyton	will continue to be protected and enhanced. The Grand Union Canal is also part of the Blue Ribbon Network which the London Plan seeks to preserve and enhance.
EU2 b)vi) could be strengthened	Environment Agency	Change proposed. The supporting text has been strengthened to support the use of resilient species on buildings and in the public realm that are cost effective to maintain over the long term.
If plans to widen Victoria Road are carried out, mitigating action should be taken to replace lost trees and vegetation.	Douglas Hunt	Change proposed. The loss of trees on Victoria Road and Cerebros Gardens will result from changes caused by HS2, which is governed by a separate legislative process. HS2 are guided by the London to West Midlands Act 2017. However, OPDC will seek to ensure that where vegetation or habitat is lost, it is replaced. The supporting text in EU2 has been amended to strengthen this requirement. OPDC will work with HS2 to encourage them to replace any planting that is lost with like for like planting. In addition, EU1 requires that 3 new parks are provided across the Old Oak area and 30% of the area is set aside for public open space.
Need a policy to address light pollution and its impacts on wildlife and amenity.	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. The impact of light pollution is considered in Policy D6. Reference to the need to consider the impacts of light pollution on biodiversity has been added to the supporting text and the policy requires environmental impacts to be considered.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Point c) should be moved to a) to give higher priority to the protection and enhancement of SINC's and similar habitats.	Wormwood Scrubs Charitable Trust	No change proposed. The ordering of the policy points in Policy EU2 does not reflect an order of priority or importance, or add any greater weight to how any of the policy points will be applied.
Policy EU2 should acknowledge that urban greening is highly challenging to deliver within industrial developments, in particular the application of the Urban Greening Factor, and may not be appropriate.	Segro	No change proposed. Supporting text to Policy EU2 clarifies that the 0.3 score for commercial premises referenced in the draft New London Plan will not be applied to proposals within the Park Royal SIL and recognises the particular challenges in achieving this score in industrial developments. However, submission of an Urban Green Factor will be required and OPDC will work with developers to optimise their Urban Greening Factor Score.
Support inclusion of a reference in the Policy text to integrating planting as part of SuDS systems and resilience to flooding.	London Borough of Hammersmith and Fulham	Noted.
Consideration should be given to changing "green roofs" term to "living roofs" so as to encompass brown roof systems.	London Borough of Hammersmith and Fulham	No change proposed. The glossary definition for green roofs clarifies that it is a roof or deck onto which vegetation is intentionally grown or habitats for wildlife are created. This ensures the term does encompass brown roof systems.
A reference should be included to SuDS tree pits being used where possible to maximise their water management potential.	London Borough of Hammersmith and Fulham	No change proposed. Referencing specific SuDS features such as tree pits would be a level of detail not appropriate for inclusion in a Local Plan, but may be appropriate for future supplementary planning guidance.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Policy should be amended to specifically reference how developments should utilise urban greening to deliver air quality improvements in accordance with the Phytosensor Toolkit, Citizen Science, May 2018 and 'First Steps in Urban Air Quality', TDAG, 2017 guidance.	London Borough of Hammersmith and Fulham	Change proposed. Reference to the role of urban greening in improving air quality has been included in the supporting text to Policy EU2. References to specific guidance documents on air quality is not appropriate within Policy EU2. Policy EU4 sets out in detail in how development proposals will be expected to minimise air pollution and make a positive contribution to an overall improvement in air quality.
Studies to understand the impacts of development on SINC's should also understand how they can be protected and enhanced as well as mitigated and minimised.	Wormwood Scrubs Charitable Trust	No change proposed. The requirement for development to conserve and enhance SINCs is referenced within Policy EU2.
Protection to SINC's and other biodiversity assets should be comparable to protection of non-designated Heritage Assets Policy D8 a)-d)	Wormwood Scrubs Charitable Trust	No change proposed. The appropriate level of protection to be afforded to SINCs and biodiversity assets are set out in the NPPF and the London Plan. The protection is heritage assets as set out in Policy D8 are subject to separate national and regional policy guidance.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations
Environmental Standards Study	The development should support the delivery of the spatial vision by delivering and/or contributing towards a high quality, multi-functional green and blue infrastructure network, i.e. accessible for play and recreation, promotes walking or cycling safely, and supports wildlife, urban cooling and flood management. Proposals should: F. Aim to be biodiversity positive, in which biodiversity rich, multi-benefit, multifunctional green spaces and water bodies are highly interconnected and closely integrated with the wider green infrastructure network in a clear functional hierarchy; G. Make a positive contribution towards climate change. Green infrastructure should be maximised to provide summer shade and cooling, to the buildings

	and external environment, and appropriate provision for localised surface water attenuation, including sustainable drainage techniques; H. In order to ensure the long term quality and performance of green infrastructure is sustained, developments will be expected to contribute to its management and maintenance. Developers will be required to provide a detailed management plan which should set out the longer term revenue funding arrangements for open spaces and commitments around continual public access; **Urban Greening** Urban Greening measures should include: • Maximising provision of soft landscape and incorporating green roofs and green walls on all suitable new buildings; • Incorporating sustainable drainage features into streets and open spaces; • Retention of existing trees and planting of new trees on new developments; • Greening of streets and public realm using 50% native species and 'right place, right tree' approach; • Planting trees to provide cooling through shade and evapotranspiration
Infrastructure Delivery Plan	• To deliver a successful comprehensive development, OPDC recognises the necessity in investing in natural capital. This therefore requires the delivery of a high quality and robust integrated network of parks, green, civic, and other open spaces. This network of green infrastructure will assist in the mitigation of a range of environmental impacts such as flood risk and the urban heat island effect. It will also provide places for the community to meet, play, exercise and relax. Refer to Figure 6 in the Appendix for a map of the green infrastructure projects. • In the creation of this new part of London the provision of open space and the ability of the population to access open space will be extremely important and contribute to the success of the area in a number of ways including social cohesion, health and wellbeing, as well as general environmental and biodiversity benefits. There are a range of open space projects identified in the Infrastructure Schedule. There are those that identify existing open space that would benefit from enhancement and the creation of new open spaces. Some spaces will be designed to perform more of a civic function while others are intended for green space.
Precedent Study	Takes lessons from local and international schemes relevant to the type of development envisioned within the OPDC area on how to deliver urban green and biodiversity. Suggested precedents to support EU2 include: • Sonder Boulevard, Copenhagen • Madrid Rio • Tumbling Park Playground • Tassinge Square • Eastern Curve Gardens It also highlights a number of redevelopment projects where urban greening has been successful delivered, including Kings Cross, QEII Park London and Hammarby Sjostad.
Sites of Importance for Nature	• OPDC will utilise the Boroughs evidence base to designate SINCs as part of the Local Plan. This will result in no change to current SINC designations from existing Planning Policy.

Conservation Statement	• The OPDC intends to undertake further work through a Green Infrastructure Study and Biodiversity Action Plan to create a long term strategy for the enhancement of existing, and creation of new, areas of biodiversity value as part of the wider master plan for future development within Old Oak and Park Royal.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	• Greening of streets and public realm using 50% native species and 'right place, right tree' approach; • Planting trees to provide cooling through shade and evapotranspiration	• Recommendations are considered to be too detailed for Local Plan policy, but will be used to inform future SPDs.

Other evidence base

Supporting study	Recommendations
The Mayor's Green Infrastructure Taskforce Report	• Green infrastructure in a future city should be informed by and deliver the following five objectives: o Promoting Healthy Living o Strengthening Resilient Living o Encouraging Active Living o Creating Living Landscapes o Enhancing Living Space • The economic value of green infrastructure needs to be measured based on the full range of benefits it provides. • New mechanisms for the funding and management of green infrastructure us required.

EU3: Water

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
17	Within the overarching roles that the planning system ought to play, a set of core land-use planning principles should underpin both plan-making and decision-taking. These 12 principles are that planning should: • support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy); • promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage, or food production);
94	Local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations.
99	Local Plans should take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape.
100	Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. Local Plans should be supported by Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards. Local Plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by: • applying the Sequential Test; • if necessary, applying the Exception Test; • safeguarding land from development that is required for current and future flood management; • using opportunities offered by new development to reduce the causes and impacts of flooding; and • where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.
101	The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed

	development in areas with a lower probability of flooding. The Strategic Flood Risk Assessment will provide the basis for applying this test. A sequential approach should be used in areas known to be at risk from any form of flooding.
102	If, following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the development to be located in zones with a lower probability of flooding, the Exception Test can be applied if appropriate. For the Exception Test to be passed: • it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared; and • a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall. Both elements of the test will have to be passed for development to be allocated or permitted.
103	When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test, it can be demonstrated that: • within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and • development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.
104	For individual developments on sites allocated in development plans through the Sequential Test, applicants need not apply the Sequential Test. Applications for minor development and changes of use should not be subject to the Sequential or Exception Tests22 but should still meet the requirements for site-specific flood risk assessments.
109	The planning system should contribute to and enhance the natural and local environment by: • Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability
162	Local planning authorities should work with other authorities and providers to: • assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands;
166	Local Plans may require a variety of other environmental assessments, including under the Habitats Regulations where there is a likely significant effect on a European wildlife site (which may not necessarily be within the same local authority area), Strategic Flood Risk Assessment and assessments of the physical constraints on land use.35 Wherever possible, assessments should share the same evidence base and be conducted over similar timescales, but local authorities should take care to ensure that the purposes and statutory requirements of different assessment processes are respected.

National Planning Practice Guidance

Policy/ paragraph reference	Policy and paragraph text
Water Supply, Wastewater and Water Quality	
Title: Water Supply, Waste Water and Water Quality – Introduction **Paragraph:** 001 **Reference ID:** 34-001-20161116 **Revision Date:** 16.11.2016	Adequate water and wastewater infrastructure is needed to support sustainable development. A healthy water environment will also deliver multiple benefits, such as helping to enhance the natural environment generally and adapting to climate change.
Title: Water Supply, Wastewater and Water Quality – Considerations in Plan Making **Paragraph:** 002 **Reference ID:** 34-002-20140306 **Revision Date:** 06.03.2014	The water supply, wastewater and water quality concerns that Local Plans need to address will vary depending on the character of the local authority area, the type of issues the Local Plan will need to grapple with and the contribution that can be made to a 'catchment-based approach' to water. Wastewater treatment plants are waste developments and handled by the waste planning authority so it is important in 2-tier areas for district and county councils to work closely on these matters. In plan-making, there are a number of broad considerations relevant to water supply and water quality: • Infrastructure (water supply and wastewater); • Water quality; • Wastewater; • Cross-boundary concerns; • Strategic environmental assessment and sustainability appraisal.
Title: How is wastewater infrastructure funded? **Paragraph:** 004 **Reference ID:** 34-004-20161116 **Revision Date:** 16 11 2016	Ofwat, the economic regulator for the water industry, sets a cap on the charges that water companies can levy. This is known as the price review and takes place every 5 years (the next review is 2019). These price limits are determined by working out how much revenue each company must collect from its customers to run their businesses efficiently and meet their statutory obligations. Companies are subject to a statutory duty to 'effectually drain' their area. This requires them to invest in infrastructure suitable to meet the demands of projected population growth. There is also statutory provision for developers to fund additional sewerage infrastructure required to accommodate flows from a proposed development (Ofwat has provided information for developers where a development would require a new water main or sewer).
Title: Infrastructure **Paragraph:** 005	Plan-making may need to consider: • Identifying suitable sites for new or enhanced infrastructure. In identifying sites it will be important to recognise that water and wastewater infrastructure sometimes has particular locational needs (and often consists of engineering works rather than new buildings) which mean otherwise protected areas may

Reference ID: 34-005-20140306 **Revision Date:** 06.03.2014	exceptionally have to be considered where consistent with their designation. Plan-making will also need to take into account existing and proposed development in the vicinity of a location under consideration for water and wastewater infrastructure. In 2-tier areas there will need to be close working between the district and county councils. • Considering whether new development is appropriate near to sites used (or proposed) for water and wastewater infrastructure (for example, odour may be a concern). • Phasing new development so that water and wastewater infrastructure will be in place when needed.
Title: Water quality **Paragraph:** 006 **Reference ID:** 34-006-20161116 **Revision Date** 16 11 2016	Plan-making may need to consider: • How to help protect and enhance local surface water and groundwater in ways that allow new development to proceed and avoids costly assessment at the planning application stage. For example, can the plan steer potentially polluting development away from the most sensitive areas, particularly those in the vicinity of potable water supplies (designated source protection zones or near surface water drinking water abstractions)? • The type or location of new development where an assessment of the potential impacts on water bodies may be required. • Where particular types of sustainable drainage systems may not be practicable.
Title: Wastewater **Paragraph:** 162 **Reference ID:** 34-007-20140306 **Revision Date:** 06 03 2014	Plan-making may need to consider: The sufficiency and capacity of wastewater infrastructure. • The circumstances where wastewater from new development would not be expected to drain to a public sewer.
Title: Cross-boundary concerns **Paragraph:** 008 **Reference ID:** 34-008-20140306 **Revision Date:** 06 03 2014	Plan-making may need to consider: • Water supply and water quality concerns often cross local authority boundaries and can be best considered on a catchment basis. Liaison between local planning authorities, the Environment Agency, catchment partnerships and water and sewerage companies from the outset (at the plan scoping and evidence gathering stages of plan-making) will help to identify water supply and quality issues, the need for new water and wastewater infrastructure to fully account for proposed growth and other relevant issues such as flood risk. The duty to cooperate across boundaries applies to water supply and quality issues.
Title: Using strategic environmental assessment and sustainability appraisal	Plan-making may need to consider: • Water supply and quality are considerations in strategic environmental assessment and sustainability appraisal which are used to shape an appropriate Local Plan, for example by establishing the ‘baseline’ and appropriate objectives for the

Paragraph: 009 **Reference ID:** 34-009-20140306 **Revision Date:** 06 03 2014	assessment of impacts and proposed monitoring. Sustainability appraisal objectives could include preventing deterioration of current water body status, taking climate change into account and seeking opportunities to improve water bodies.
Natural Environment	
Title: How can green infrastructure help to deliver wider planning policy? **Paragraph:** 030 **Reference ID:** 8-030-20160211 **Revision Date:** 11 02 2016	Green infrastructure can help to deliver a variety of planning policies including: • Meeting the challenge of climate change, flooding and coastal change: o Green infrastructure can help urban, rural and coastal communities mitigate the risks associated with climate change and adapt to its impacts by storing carbon; improving drainage (including the use of sustainable drainage systems) and managing flooding and water resources; improving water quality; reducing the urban heat-island effect and; where appropriate, supporting adaptive management in coastal areas. Green infrastructure networks also help species adapt to climate change by providing opportunities for movement.
Climate Change	
Title: How can the challenges of climate change be addressed through the Local Plan? **Paragraph:** 003 **Reference ID:** 6-003-20140612 **Revision Date:** 12 06 2014	There are many opportunities to integrate climate change mitigation and adaptation objectives into the Local Plan. Sustainability appraisal can be used to help shape appropriate strategies in line with the statutory duty on climate change and ambition in the Climate Change Act 2008. Examples of adapting to a changing climate: • Considering future climate risks when allocating development sites to ensure risks are understood over the development's lifetime • Considering the impact of and promoting design responses to flood risk and coastal change for the lifetime of the development • Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality • Promoting adaptation approaches in design policies for developments and the public realm Engaging with appropriate partners, including utility providers, communities, health authorities, regulators and emergency planners, statutory environmental bodies, Local Nature Partnerships, Local Resilience Forums, and climate change partnerships will help to identify relevant local approaches.
Title: How can adaption and mitigation approaches be integrated? **Paragraph:** 004	When preparing Local Plans and taking planning decisions local planning authorities should pay particular attention to integrating adaptation and mitigation approaches and looking for 'win-win' solutions that will support sustainable development. This could be achieved in a variety of ways, for example:

Reference ID: 6-004-20140612 **Revision Date:** 12.06.2014	• Through the provision of multi-functional green infrastructure, which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle.
Title: How can planning deal with the uncertainty of climate risks when promoting adaptation in particular developments? **Paragraph:** 005 **Reference ID:** 6-005-20140306 **Revision Date:** 06 03 2014	The impact of climate change needs to be taken into account in a realistic way. In doing so, local planning authorities will want to consider: identifying no or low cost responses to climate risks that also deliver other benefits, such as green infrastructure that improves adaptation, biodiversity and amenity building in flexibility to allow future adaptation if it is needed, such as setting back new development from rivers so that it does not make it harder to improve flood defences in future the potential vulnerability of a development to climate change risk over its whole lifetime
Title: What evidence of risks arising from climate change is available to support local plan-making? **Paragraph:** 006 **Reference ID:** 6-006-20140306 **Revision Date** 16 11 2016	Climate change risk assessments can support the production of Local Plans by informing the Sustainability appraisal. Local risk assessments can be used to identify those climate risks, including those arising from severe weather events, the planning system can address. Risk assessments could consider the implications for the built environment and development, infrastructure, services and biodiversity, and their subsequent implications for vulnerable groups and community cohesion. Identifying those impacts which pose most potential risk or disruption to the provision of local services will enable vulnerability to be assessed and areas suitable for development to be identified and adaptation responses to be put in place. Other parts of a Local Plan's evidence base will also include information on climate change risks, such as the Strategic Flood Risk Assessment and Water Resource Management Plan and water cycle studies. Infrastructure providers hold information on the extent of supply and network constraints and their existing plans to reinforce those networks and capacity. Other service providers may also have carried out risk assessments that have implications for planning, such as health and social service providers. Local studies can also be undertaken to provide a more detailed assessment of local vulnerability to climate impacts and the effects of extreme weather events.

London Plan (2016) Policies

Policy/ paragraph reference	Policy and paragraph text

Chapter 2: London's Places	
Policy 2.18 Green infrastructure: the multi functional network of green and open 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.
Chapter 5: London's Response to Climate Change	
Policy 5.3 Sustainable Design and Construction	<u>Planning decisions</u> B Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process. C Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • efficient use of natural resources (including water), including making the most of natural systems both within and around buildings
Policy 5.12 Flood risk management	<u>Planning decisions</u> B Development proposals must comply with the flood risk assessment and management requirements set out in the NPPF and the associated technical Guidance on flood risk1 over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans. C Developments which are required to pass the Exceptions Test set out in the NPPF and the Technical Guidance will need to address flood resilient design and emergency planning by demonstrating that: a the development will remain safe and operational under flood conditions b a strategy of either safe evacuation and/or safely remaining in the building is followed under flood conditions c key services including electricity, water etc will continue to be provided under flood conditions d buildings are designed for quick recovery following a flood. D Development adjacent to flood defences will be required to protect the integrity of existing flood defences and wherever possible should aim to be set back from the banks of watercourses and those defences to allow their management, maintenance and upgrading to be undertaken in a sustainable and cost effective way. <u>LDF preparation</u> E In line with the NPPF and the Technical Guidance, boroughs should, when preparing LDFs, utilise Strategic Flood Risk Assessments to identify areas where particular flood risk issues exist and develop actions and policy approaches aimed at reducing these risks, particularly through redevelopment of sites at risk of flooding and identifying specific opportunities for flood risk management measures.
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.
Policy 5.14 Water Quality and Wastewater Infrastructure	**Strategic** A. The Mayor will work in partnership with the boroughs, appropriate agencies within London and adjoining local planning authorities to: a. Ensure that London has adequate and appropriate wastewater infrastructure to meet the requirements placed upon it by population growth and climate change b. Protect and improve water quality having regard to the Thames River Basin Management Plan. **Planning Decisions** B. Development proposals must ensure that adequate wastewater infrastructure capacity is available in tandem with development. Proposals that would benefit water quality, the delivery of the policies in this Plan and of the Thames River Basin Management Plan should be supported while those with adverse impacts should be refused. C. Development proposals to upgrade London's sewage (including sludge) treatment capacity should be supported provided they utilise best available techniques and energy capture. D. The development of the Thames Tideway Sewer Tunnels to address London's combined sewer overflows should be supported in principle. **LDF Preparation** E. Within LDFs boroughs should identify wastewater infrastructure requirements and relevant boroughs should in principle support the Thames Tideway Sewer Tunnels.
Policy 5.15 Water Use and Supplies	**Strategic** A. The Mayor will work in partnership with appropriate agencies within London and adjoining regional and local planning authorities to protect and conserve water supplies and resources in order to secure London's needs in a sustainable manner by: a. Minimising use of mains water b. Reaching cost-effective minimum leakage levels c. In conjunction with demand side measures, promoting the provision of additional sustainable water resources in a timely and efficient manner, reducing the water supply deficit and achieving security of supply in London d. Minimising the amount of energy consumed in water supply e. Promoting the use of rainwater harvesting and using dual potable and grey water recycling systems, where they are energy and cost effective f. Maintaining and upgrading water supply infrastructure

	g. Ensuring the water supplied will not give rise to likely significant adverse effects to the environment particularly designated sites of European importance for nature conservation. **Planning Decisions** B. Development should minimise the use of mains water by: a. Incorporating water saving measures and equipment b. Designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day C. New development for sustainable water supply infrastructure, which has been selected within water companies' Water Resource Management Plans, will be supported.
Chapter 7 London's Living Spaces and Places	
Policy 7.24 Blue Ribbon Network	The Blue Ribbon Network is a strategically important series of linked spaces. It should contribute to the overall quality and sustainability of London by prioritizing uses of the waterspace and land alongside it safely for water related purposes, in particular for passenger and freight transport. Regard should be paid to the Thames River Basin Management Plan and the emerging marine planning regime and the Marine Policy Statement.
Policy 7.25 Increasing the use of the blue ribbon network for passengers and tourism	Strategic A The Mayor will seek to increase the use of the Blue Ribbon Network for passenger and tourist river services, and supports the principle of additional cruise liner facilities on the Thames. Planning decisions B Development proposals: a should protect existing facilities for waterborne passenger and tourist traffic. Applications which remove existing facilities should be refused unless suitable replacement facilities are provided b which provide new facilities for passenger and tourist traffic, especially on the central London stretch of the River Thames will be supported c which provide improved facilities for cruise ships in London will be supported. LDF preparation C Within LDFs boroughs should identify locations that are suitable for passenger, tourist or cruise liner facilities.

Draft New London Plan (2017) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 1: Planning London's Future	
Policy GG6 Increasing efficiency and resilience	B Ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, and avoiding contributing to the urban heat island effect.
Chapter 3 Design	
Policy D1 London's form and characteristics	B Development design should: • 5) provide spaces and buildings that maximise opportunities for urban greening to create attractive resilient places that can also help the management of surface water
Policy D7 Public realm	Development Plans and development proposals should:

	H Incorporate green infrastructure into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, manage heat and increase biodiversity.
Chapter 9 Sustainable Infrastructure	
Policy SI5 Water infrastructure	A In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner. B Development Plans should promote improvements to water supply infrastructure to ensure security of supply. This should be done in a timely, efficient and sustainable manner taking energy consumption into account. C Development proposals should: 1) minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption) 2) achieve at least the BREEAM excellent standard (commercial development) 3) be encouraged to incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise futureproofing. D In terms of water quality Development Plans should: 1) promote the protection and improvement of the water environment in line with the Thames River Basin Management Plan, and should take account of Catchment Plans 2) support strategic wastewater treatment infrastructure investment to accommodate London's growth and climate change impacts. Such infrastructure should be constructed in a timely and sustainable manner taking account of new, smart technologies, intensification opportunities on existing sites, and energy implications. Boroughs should work with Thames Water in relation to local wastewater infrastructure requirements. E Development proposals should: 1) seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided 2) be designed to ensure that misconnections between foul and surface water networks are eliminated and not easily created through future building alterations.
Policy SI12 Flood risk management	A Current and expected flood risk from all sources 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 Surface Water Management Plan, where necessary, to identify areas where particular flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should co-operate and jointly address cross-boundary flood risk issues including with authorities outside London. C Development proposals which require specific flood risk assessments 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. 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. Where possible, development proposals should set permanent built development back from flood defences to allow for any foreseeable future upgrades.
Policy SI13 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. 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 in line with the following drainage hierarchy: 1) rainwater harvesting (including a combination of green and blue roofs) 2) infiltration techniques and green roofs 3) rainwater attenuation in open water features for gradual release 4) rainwater discharge direct to a watercourse (unless not appropriate) 5) rainwater attenuation above ground (including blue roofs) 6) rainwater attenuation below ground136 7) rainwater discharge to a surface water sewer or drain 8) rainwater discharge to a combined sewer. C Development proposals for impermeable paving should be refused where appropriate, including on small surfaces such as front gardens and driveways. D Drainage should be designed and implemented in ways that address issues of water use efficiency, river water quality, biodiversity, amenity and recreation.

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
2.6.3 2.6.4	Residential Water Saving Targets The London Plan states that residential schemes should be designed to meet a water consumption rate of 105 litres or less per person per day. This is based on the Water efficiency calculator44, which is used by both the Code for Sustainable Homes and the Building Regulations (Part G). The Water efficiency calculator measures anticipated average water consumption by

	adding up flow rates, for example, of taps and showers as well as the size of devises such as baths, cisterns and washing machines. Assumptions are included in the model on how often devises will be used. For residential developments that are not required to carry out a Code for Sustainable Homes assessment, The Sustainable Building Association also known as the AECB has developed a simple table that developers / contractors can use to specify water efficient appliances. Developers should aim for the 'best practice' standards. The AECB Water Standards can be found here http://www.aecb.net/publications/aecb-water-standards/
2.6.5	Non-domestic water saving targets 5 Many non-domestic developments carry out BREEAM assessments and should aim to achieve the maximum water credits. Where a BREEAM assessment is not carried out developers could instead aim to achieve the 'best practice' AECB Water Standards.
2.6.6 2.6.7 2.6.8	Overall water saving measures 2.6.6 The Water efficiency calculator allows off-setting in its calculation. For example, if rainwater harvesting is included for the flushing of toilets, the amount of water reused can be deducted from the water efficiency calculation enabling additional consumption through another appliance. Maximum water efficiency can be achieved by including as many of the following measures as practical: • water saving appliances; • water reuse appliances; • alternative water sources; and • low water use landscaping and gardens. 2.6.7 Water efficiency measures can also save energy - on a macro scale by reducing the volume of water that needs to be treated to drinking quality and pumped around London; and for the individual through the need to heat less water, for hot water needs. 2.6.8 Many water saving measures are internal the building and therefore the planning system has limited practical control over the retention of the individual measures. However, tools like BREEAM, the Code and the AECB water standard can be used to secure a range of measures. Development wide measures such as rainwater harvesting system are more likely to be retained, but need to be maintained. Boroughs should negotiate with and secure from developers as many of the water saving measures outline below as is practical in development schemes. Boroughs and developers should be satisfied that the appliances specified are appropriate for the development and their anticipated use. This is to limit the desire for occupants to substitute them for more water intensive appliances.
	Water saving appliances 2.6.9 The simplest way of reducing water consumption is through the installation of water efficient fittings and plumbing. The AECB water standards45 set out Good and Best practice standards for selecting water fittings and designing plumbing systems. Measures can include: • low and dual flush toilets – new toilets have a maximum flush of 6 litres. The lowest full flush toilets have a flush of 4 litres. Best practice are dual flush toilets of 4/2 litres; • waterless urinals - new urinals are limited to a maximum water use of between 7.5 litres to 10 litres an hour. Therefore waterless urinals can save significant amounts of water and money for businesses. Buildings with high occupancy rate such as schools, hotels and offices can particularly benefit from waterless urinals which can be retro-fitted to replace existing systems.

	Having no flushing mechanism means that these systems can be easier to maintain and the lack of water can reduce hygiene and odour concerns; • taps – water efficient options include spray, aerated, low flow self-closing and infrared controlled appliances as well as the installation of flow restrictors; • bathing - showering, excluding with power showers generally uses less than half the water than having a bath. Aerated and low flow showerheads can further reduce water consumption. Where it is likely to be retained and use regularly, the installation of a low volume bath can be an alternative; • white goods - washing machines can vary from between 6 litres and 20 litres of water per kilogramme of washing and dishwashers can use as little as 10 litres of water per wash46; and • swimming pools and other high water consuming systems - these can generally be provided with water recirculation, recycling and water recovery systems rather than backwashing or rejecting water to waste. Waste water from swimming pools can be re-used by re-circulating the backwash water to the balance tank, diluting with fresh water and making use of the treatment systems that exist for the pool.
2.6.10	Low water use for landscaping Designers should consider the following measures to reduce the demand for water from external activities: • cleaning needs of large surfaces as this could result in significant water use; • designing dry gardens or low water use gardens/landscaping by: ➢ imitating the conditions and attributes of London's vegetated brownfield sites; ➢ working with the existing natural vegetation; ➢ selecting drought-resistant plants; and ➢ using water-retaining mulches; • using automatic drip irrigation systems which are also cost-effective solutions that provide regular watering as required depending upon weather conditions; • designing closed system recycling water features such as fountains, where including and; • using rainwater harvesting techniques such as installing water butts to collect water from rainwater downpipe outlets to use on gardens. See section 3.2 on heat and drought resistant planting for further details.
2.6.11 2.6.12	MAKING USE OF ALTERNATIVE SOURCES OF WATER 2.6.11 A large proportion of water used does not need to be of drinking quality, therefore capturing and using rainwater, recycling waste water and extracting ground water, where possible and permitted by the Environment Agency, can reduce the use of potable water. 2.6.12 Developments with intensive water use such as offices, hotels, buildings used by the public and schools should demonstrate they have actively considered using alternative sources of water.
2.13	Rainwater harvesting 2.6.13 Where practical rainwater should be collected from all suitable roofs and impermeable surfaces and stored for reuse. Depending on the size and nature of the development the rainwater harvesting system should be designed to water landscaping and top up water features, flush toilets, general cleaning and clothes washing. Rainwater harvesting systems can be integrated with sustainable urban drainage systems, however an allowance has to be made in the storage capacity for the additional water capacity to cater for both general rainfall (minus what is used regularly), and for a

	potential storm event that the sustainable urban drainage system is to cater for.
2.14	Abstraction of groundwater Abstraction of groundwater in London is limited and is generally of variable quality. Where ground water is available it can provide an important alternative source to potable water, especially for industrial purposes, watering landscaping or flushing toilets. The consistent ground temperature means that ground water can be used for low energy cooling. See section 2.4 on renewable energy for more details
2.15	Water re-use Grey water (used water from sinks, baths and showers) can be filtered, disinfected and stored then re-used for toilet flushing, laundry, general cleaning and watering of landscaping. Black water (sewage from toilets) requires more intensive filtering and therefore is more resource intensive.
2.16	Metering Meters can encourage people to monitor and reduce their water consumption by an average of 10% to 15%47. Water companies have targets to meter existing properties to help reduce water consumption. Although all new homes are metered, often flats are not metered individually. Individual metering will have the greatest effect on reducing water consumption and should be included in all new developments, and ideally per floor for non-residential developments
2.17	Retrofitting Measures Where buildings are to be retained, water efficiency and saving measures can be retrofitted. Simple measures include: • products that reduce the volume of cisterns; • flow restrictors and aerators for taps; • individual grey water recycling systems; and • water butts
3.4.2	It is important to incorporate sustainable drainage in all developments to prevent the increasing volume of surface water runoff during heavy rainfall. Surface water flooding is the most likely form of flooding that development may be exposed to. Surface water flooding is likely to increase due to the anticipated increased intensity in rainfall events as well as the continuing urbanisation of London. For small developments, including those that do not require planning permissions, simple measures can include draining impervious surfaces to a landscaped area of the garden or to a soak away or installing a water butt to collect water from an existing or new impervious roof. More options are provided in Table 3.1 below. It is essential to consider how SuDS measures will be incorporated at the initial design stage, especially when the National Standards for SuDS is introduced. Guidance on how to design to limit the impact of other forms of flooding can be found later in this section (paragraph 3.4.45-3.4.48).
3.4.3 3.4.4	Surface water management plans 3.4.3 Under the Floods and Water Management Act 201068 the responsibility for surface water flooding in London lies with boroughs which must develop, maintain, apply and monitor a strategy for local flood risk management in their area. It is essential that local planning policies and decisions complement any actions a Surface Water Management Plan (SWMP) or Local Flood Risk Management Strategy identify to address local surface water flooding issues. This will generally require a coordinated approach between the local planning authority, the local highways authority and the open space department. The local water company can also be included.

	3.4.4 A catchment wide approach should be taken in urban areas, particularly where surface water in one borough may result in flooding in another borough and there is insufficient space to fully deal with surface water in a single borough. Surface water maps will be published by the Environment Agency in 2014. SuDS measures should be retrofitted where ever possible to address local surface water management issues. The SuDS measure may be located upstream, even some distance, from the actually area at risk of surface water flooding.
3.4.5 3.4.6 3.4.7 3.4.8 3.4.9 3.4.10	Greenfield runoff rates 3.4.5 London Plan policy 5.13 states that developers should aim for a greenfield runoff rate from their developments. Greenfield runoff rates are defined as the runoff rates from a site, in its natural state, prior to any development. Typically this is between 2 and 8 litres per second per hectare. The CIRIA SuDS Manual generally recommends the institute of Hydrology Report 124 methodology for calculating greenfield runoff rates. 3.4.6 Achieving a greenfield runoff rate is of particular importance where the development is located in a catchment that contributes to combined sewers with known and/or modelled capacity or flooding issues. Information to determine whether capacity/flooding issues exist is available from borough SWMPs and Strategic Flood Risk Assessments (SFRAs) as well as other historic data. 3.4.7 If greenfield runoff rates are not proposed, developers will be expected to clearly demonstrate how all opportunities to minimise final site runoff, as close to greenfield rate as practical, have been taken. This should be done using calculations and drawings appropriate to the scale of the application. In order to achieve this, applicants should: • consider the permeability of all existing and proposed surfaces on the application site; • assess the existing surface water and foul drainage networks and their discharges; and • assess a range of return periods (the probability of a rainfall event of a particular size occurring and resulting in flooding) up to and including the 1 in 100 year plus climate change critical storms (an additional 20-30%). 3.4.8 Most developments referred to the Mayor have been able to achieve at least 50% attenuation of the site's (prior to re-development) surface water runoff at peak times. This is the minimum expectation from development proposals. 3.4.9 There may be situations where it is not appropriate to discharge at greenfield runoff rates. These include, for example, sites where the calculated greenfield runoff rate is extremely low and the final outfall of a piped system required to achieve this would be prone to blockage. An appropriate minimum discharge rate would be 5 litres per second per outfall. 3.4.10 All developments on greenfield sites must maintain greenfield runoff rates. On previously developed sites, runoff rates should not be more than three times the calculated greenfield rate. The only exceptions to this, where greater discharge rates may be acceptable, are where a pumped discharge would be required to meet the standards or where surface water drainage is to tidal waters and therefore would be able to discharge at unrestricted rates provided unacceptable scour would not result.
3.4.11 3.4.12	The drainage hierarchy 3.4.11 The drainage hierarchy set out in London Plan policy 5.13 comprises two elements: • managing and storing surface water on-site before it is finally discharged, if required (Numbers 1 to 4); and

	• disposal of surface water from a piped drainage system (Numbers 5, 6 and 7). 3.4.12 The capture and storage of rainwater for later use is always the priority in order to also meet the objective of making efficient use of water resources. See section 2.5 for more details on water reuse. Where there are no opportunities to collect and reuse rainwater, the site, where practical should drain to the ground to recharge groundwater resources. Where infiltration is not possible, surface water should be stored on-site in open water features such as ponds and wetlands and then released at a controlled rate. The final option is to store surface water in tanks or cellular storage before it is released at a controlled rate. This is the least preferable storage option as it does not provide wider sustainability benefits such as habitat provision or water quality improvements.
3.4.13 3.4.14 3.4.15 3.4.16 3.4.17	Multi-functional benefits of SuDS Development should utilise SuDS unless there are practical reasons for not doing so. The aspiration is to deliver SuDS schemes that provide multiple benefits, in addition to reducing flood risk. The most beneficial schemes will successfully contribute to the delivery of the Water Framework Directive by reducing water pollution (see section 4.6 for more guidance on preventing Water pollution) and providing additional valuable habitat to improve the status of our water bodies. SuDS schemes should also aim to improve amenity, and therefore the quality of life of Londoners, as well as contribute to the wider goals relating to green infrastructure, biodiversity, water efficiency and recreation. SuDS measures should be specified to maximise multi-functional benefits by following Table 3.1. SuDS should be fully justified by adopting techniques in a hierarchical manner, maximising the use of those techniques higher up the hierarchy and those that deliver multi-functional benefits before considering others further down the hierarchy. A London SuDS Guidance Pack from the London Drainage Engineers Group will be available in 2014. Site conditions to consider when assessing the suitability of different SuDS include: • the contaminants present in runoff; • the catchment area; • local hydrology; and • the type of development. Infiltration methods need to consider: • soil permeability; • ground stability; • depth to water table; • soil attenuation, both flow and quality; • contaminants present in ground; and • local hydrogeology and risk of groundwater contamination.
3.4.18 3.4.19	Management of SuDS and contributions Drainage designs incorporating SuDS measures should include details of how each SuDS feature, and the scheme as a whole, will be managed and maintained throughout its lifetime. When published the National Standards for sustainable drainage systems should be followed with additional consideration given to the issues associated with the constrained

	nature and abundance of below ground services on London sites. These SuDS will be reviewed by, and require permission from SuDS Approval Bodies administered by the boroughs. Some borough SWMPs may include actions to deliver SuDS schemes to help alleviate existing surface water flooding issues. Developers should consider these proposals and investigate ways to implement or contribute towards such schemes.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle E1	Proposals should: a. Minimise water consumption through the use of efficient devices, smart landscaping and the use of grey water and rainwater recycling; b. Use an extensive range of sustainable drainage techniques (including green infrastructure) to ensure that new development achieves a greenfield runoff rate; and c. Explore opportunities to retrofit sustainable urban drainage measures to existing buildings and public realm; and d. be part of an integrated approach to water utility planning.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	Alternative policy option
12.32	No reasonable alternative policy options have been identified, as an alternative would be to not achieve greenfield run-off rates, or exemplary standards of water efficiency. This would have an unacceptable impact on the sewer network within and downstream of OPDC and on the demand for water resources.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Surface water drainage: Existing issues with surface water drainage were highlighted. It is considered that measures to address surface water flooding should be consistent with the agreed	Friends of Wormwood Scrubs, The Hammersmith Society, 22 local residents	Noted. The Local Plan continues to support climate change resilience by delivering SuDS which address current surface water flooding issues on the Scrubs and which can potentially

ecological enhancement programme. There is some support for a pond/drainage in certain locations but also concerns and objections expressed about ongoing management/maintenance.		contribute to a strategic SuDS network. This position is informed by the Integrated Water Management Strategy, a supporting study to the Local Plan.
Water: support for the overriding approach to water management and recognition of need to achieve greenfield run-off rates. Support for above ground water attenuation but concern regarding the potential use of Wormwood Scrubs for this, although others were supportive of the use of Wormwood Scrubs for above ground water attenuation.	Environment Agency, Old Oak Park (DP9), Thames Water, London Sustainable Development Commission, Grand Union Alliance, Royal Borough of Kensington and Chelsea, 2 local residents	Noted. The Integrated Water Management Study has been updated to take on board comments from stakeholders. The Local Plan proposes to continue to identify the potential for strategic SuDS to manage surface water. This could include the potential for attenuation on Wormwood Scrubs, which could also have benefits for biodiversity and help to manage the Scrubs' own surface water flooding issues. Any proposals for Wormwood Scrubs would need to be agreed by the Wormwood Scrubs Charitable Trust and London Borough of Hammersmith and Fulham.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
CRT support the use of the canal as an integral part of the strategic urban drainage system subject to modelling and investment in outfalls and other upgrades to ensure the canal network is resilient.	CRT	Noted.
Support for greenfield run off rates	RBKC	Noted.
Policy should clearly state that Counters Creek is at full capacity and no net additional flow can go into the creek from development.	RBKC, Old Oak Interim Neighbourhood Forum, Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette	Change proposed. The supporting text has been amended to make it clear that Counters Creek sewer is at capacity.

	Hollender, Jeremy Aspinall, Thomas Dyton	
Support cross references and reinforcement of SuDS in different policies	RBKC	Noted
Strongly support EU3 but would like to see it strengthened by including Water Framework Directive and River Basin Management Plan requirements, WFD improvement measures, and references to retrofitting existing uses.	Environment Agency	Change proposed. Noted, the Water Framework Directive and River Basin Management Plan is addressed nationally through legislation and published guidance. OPDC have addressed the Water Framework Directive in the Integrated Water Management Study which supports the Local Plan. OPDC therefore believes that the framework has been adequately referenced. Reference to both the Water Framework Directive and Thames River Basin Management Plan has now been appropriately referenced in the policy an supporting text.
There is concern that the hierarchy does not include collection of rainwater and greywater for re-use. The current London Plan Drainage Hierarchy puts rainwater harvesting at the top of the list, so there is an inconsistency in the approach of Policy EU3.	LBHF	No change proposed. The Local Plan does include in EU3 delivery of on-site water re-use technologies including rainwater and grey water recycling where these are viable. OPDC's evidence shows this will be most viable in non-residential developments, hence the slant of the policy. In addition, the Local Plan does not seek to repeat London Plan policy as all developments will be expected to conform with NPPF and London Plan policy.
Para 6.33 should be strengthened to require that developments achieve the highest standards of sustainable development, not just “seek to ensure” this.	LBHF	No change proposed. OPDC cannot ensure that developments will achieve the highest standards of sustainable development but will do everything in its power to promote sustainable development subject to viability.

In para 6.38 the use of the Grand Union Canal as part of an integrated approach to managing surface water run-off can only work if the Canal and River Trust provide consent for such discharges. OPDC should work closely with CRT to ensure that this option is maximised where feasible.	LBHF	No change proposed. OPDC are working with CRT and CRT have responded positively to this policy.
The emphasis in para 6.39 on the use of above ground measures in preference to underground attenuation tanks is welcomed.	LBHF	Noted
lack of monitoring details	Friary Park Preservation Group	No change proposed. Monitoring will be included in the Authority Monitoring Report.
Add "ensure sustainable drainage over the whole development area does not adversely affect Wormwood Scrubs, and takes measure to avoid flooding"	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The use of sustainable drainage will have to be designed so that it does not adversely impact on the area as a whole and MOL is already protected in Policy EU1 and EU2. Addressing flooding on the Scrubs is already dealt with in P12.
This policy should refer to the potential use of the canal for heating and cooling	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policy EU10 refers to the use of the canal as a potential source of heat and CRT have responded positively to this suggestion in their response to the consultation. Cooling is also dealt with in the policy but evidence suggests coolth networks will only be appropriate as part of large-scale commercial developments and the phased delivery of these is not likely to occur for another 10+ years.
The storm relief sewer for Counters Creek is not guaranteed to be delivered and this means the 24,000 homes figure is inadequately evidenced and not justified.	Old Oak Interim Neighbourhood Forum, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The Counters Creek sewer upgrades relate to current capacity problems and do not relate to regeneration in the Old Oak area, where the requirement is to achieve greenfield run-off rates.

Expressed concern that if strategic SuDS that include use of canal and Wormwood Scrubs is not achieved cost on individual plots will be very high.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Noted. OPDC are working with CRT and CRT have responded positively to this policy. OPDC will do everything possible to ensure the development is viable without compromising the standards set out in the Local Plan. Achieving greenfield runoff rates is imperative as the sewer network is at capacity and the statutory undertaker has indicated they cannot provide any more capacity. As additional sewage will be generated through the development, rain water will have to be diverted from sewers and treated on site to compensate for the additional flow of sewage.
Flooding not addressed strategically but Counters Creek imposes considerable constraints	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC shares the consultees concerns and contends that flooding has been extensively addressed throughout the Local Plan, supported by the Integrated Water Management Study which accompanies the plan.
Concerns expressed about the impact of London water issues on viability of development	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC shares the consultees concerns about water issues and for this reason has addressed water issues in Policy EU3 and in the Integrated Water Management Study which accompanies the Plan. As well as seeking funding from developers, in accordance with Policy DI1, OPDC will pursue alternative funding sources to deliver required infrastructure.
There is a lack of space for strategic SuDS and this needs to be resolved to address flood issues	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC officers consider that provision of strategic SuDS has been considered. SuDS will be integrated onto sites, into the canal where appropriate and subject to agreement with the CRT and into streets and open space provision.

Figure 6.5, pg. 167 should identify any designated Critical Drainage Areas within the OPDC area and clarify the locations in which Flood Risk Assessments are required.	RBKC	Change proposed. The critical drainage areas are covered in the Integrated Water Management Study which was published alongside the Local Plan. This includes a list of surface water critical drainage areas, and a plan (Figure C2) showing their location. Policy EU3 has been modified in order to reinforce the requirement for all developments to undertake FRAs for schemes meeting the thresholds set out in DEFRA and EA guidance.
Para 6.35 should refer to Boroughs roles as Lead Local Flood Authorities.	LBHF	Change proposed. The paragraph has been amended to reinforce the Local Authorities role as Lead Flood Authority
The need to carry out a Flood Risk Assessment in para 6.41 should not be limited to just major developments.	LBHF	Change proposed. The wording has been amended to align the requirements with Environment Agency and DEFRA guidance.
In para 6.42 it may not be appropriate to exclude all residential development from the requirement to use rainwater/greywater systems, as there could be some residential developments where this would be suitable.	LBHF	Change proposed. The Plan has been amended to require development to implement measures, but with the priority being within non-residential developments.
In para 6.43 OPDC could set a more stringent policy in terms of use of the 105 litres per day target.	LBHF	No change proposed. The policy seeks to meet or exceed the 105 litres per day target.

Regulation 19(2) consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
Thames Waters main concern is to ensure that the Local Plan delivers on the outcomes of the IWMS and to ensure that the Local Plan is sufficiently robust.	Thames Water	Noted.
Currently while greenfield runoff rates are sought it is often argued that it is technically impractical to reduce surface water flows below 5 l/s as this causes blockages. However, the latest CIRIA SuDS Manual justifies that flow rates can be restricted to 2 l/s. Policy and/or supporting text should be revised to stated to reflect this.	Thames Water	No change proposed. Policy EU3 requires developments to provide attenuation that will achieve greenfield run-off rates during a 1 in a 100 year storm plus 40% climate change allowance. Referencing specific flow rates is a level of detail not appropriate for a strategic planning document. OPDC will continue to work closely with Thames Water on

		the detailed design of SuDS in the OPDC area through its infrastructure delivery programme.
Thames Water have assessed the water infrastructure requirements of the identified site allocations. The vast majority will require local upgrades , while larger site allocations in Old Oak will require strategic infrastructure upgrades to enable development. In all instances, developers should work with Thames Water and the OPDC early in the planning process to discuss the specific issues regarding water infrastructure and how the development will contribute towards the delivery of the IWMS.	Thames Water	Noted. Site specific details are not appropriate for a strategic planning document such as the Local Plan. OPDC will continue to encourage developers to work with Thames Water early in the planning process to discus specific issues relating to water infrastructure.
Specific reference could be made to the potential for the Grand Union Canal to play a role in cooling new developments.	Canal & River Trust	No change proposed. The potential use of the Grand Union Canal for cooling in new developments is referenced in the supporting text to Policy P3 and including additional reference to this in Policy EU3 would be repetition.
Support the positive approach to SuDS, but query the downgrading in importance of strategic SuDS in the sustainable drainage hierarchy. The justification for this is to align with the Utilities Study, but this study has not been updated since 2017. Reference to greenfield run-off rates should be added to the supporting text to reinforce the policy.	Royal Borough of Kensington and Chelsea	No changed proposed. The hierarchy in the previous draft Local Plan was not fully consistent with either the IWMS or the findings of the 2017 Utilities Study. The revision to the hierarchy in the second revised draft Local Plan is intended to address this. Prioritising on-site measures for addressing surface water run-off conforms with the London Plan requirement to manage surface water run-off as close to source as possible. The hierarchy as set out in Policy EU3 reflects the particular context of the OPDC area and type and form of development to be delivered. Policy EU3 is clear that proposals should not exceed greenfield rates of surface water run-off.

Reference to "Thames River Basement Management Plan" should say "Thames River Basin Management Plan".	Royal Borough of Kensington and Chelsea	Change proposed. References to "Basement" were a typo and have been amended to "Basin".
Policy and supporting text should be amended to require a site specific flood risk assessment for all development proposals within the Critical Drainage Areas identified within OPDC's IWMS.	Royal Borough of Kensington and Chelsea	Change proposed. The supporting text to Policy EU3 has been amended to provide additional clarity on where an FRA will be required. The Critical Drainage Areas have also been added to the figure supporting Policy EU3.
As part of the Healthy Streets approach, OPDC should consider what contribution it can make to delivering proposal 44 of Mayor's Transport Strategy which commits to removing 50,000 sqm of impermeable surfaces on the transport network and replacing them with permeable surfaces.	Environment Agency	Noted. As out set out in Policy EU3, strategic SuDS incorporated into streets, open spaces and other areas of public realm will form part of OPDC's approach to managing surface water run-off. As Old Oak is formed predominantly of hard surfaced areas at present, this will make a significant contribution towards the Mayor's target for removing impermeable surfaces.
Policy EU3-d) should be amended to refer the specific national policy and guidance for NPPF and NPPG.	Environment Agency	No change proposed. The NPPF is a material consideration in assessing planning applications. It is not considered appropriate to repeat this within the policy or supporting text.
The hierarchy set out in Policy EU3-b) should be revised to be consistent with the London Plan hierarchy and highlight the importance of rainwater harvesting and landscape based SuDS above discharge or surface water to the Grand Union Canal. The hierarchy also conflicts with recommendations of the IWMS, Borough SWMPs and the TRBM Plan.	London Borough of Hammersmith and Fulham	No change proposed. The Local Plan is supported by, and reflects the recommendations of, a detailed Integrated Water Management Strategy (IWMS) and Utilities Study . The IWMS was jointly commissioned with the GLA who support its outputs. The studies have assessed the need to manage surface water drainage in the locally specific circumstances of the OPDC area, and this is reflected in the hierarchy set out in the Policy EU3. The hierarchy set out in the London Plan reflect a pan London context, and recommends that locally specific circumstances need to be considered in implementing drainage strategies. The hierarchy in Policy EU3 reflects the locally specific context of the OPDC area and the type of

		development set to delivered, and conforms the London Plan requirement to address surface water run-off as close to source as possible. Separately in Policy EU3, proposals are required to maximise the efficient use of water by delivering on-site water recycling technologies where these are shown to be viable.
Will the Integrated Water Management Strategy be updated, and will OPDC be producing a specific SWMP or relying on the local authorities to do so?	London Borough of Hammersmith and Fulham	No change proposed. The IWMS is has been produced to identify options for sustainably managing water within the OPDC area to meet the changing needs of development in the area. It is considered a sound and robust evidence to support OPDC's approach to water management strategy in the Local Plan. If at any point an updated IWMS is considered necessary, the outputs will inform future updates to the Local Plan. Any updates to water infrastructure needs in the OPDC area will be captured through annual updates to OPDC's Infrastructure Delivery Plan.
Consider specific reference to risks of sewer flooding.	London Borough of Hammersmith and Fulham	No change proposed. The need for development ensure sufficient capacity within the sewerage network and address development needs is included within the Policy.
Clarification is needed on how contributions for water infrastructure will be calculated.	London Borough of Hammersmith and Fulham	No changed proposed. Further details contributions for water infrastructure will be included within OPDC Planning Obligations SPD.
Further details on the potential volumes of surface water to be directed into the canal would be useful to assess the viability of the approach.	London Borough of Hammersmith and Fulham	No change proposed. This is considered to be too detailed for inclusion the Local Plan. Applicants will have to demonstrate how they will comply with the requirements set out in Policy EU3, and where proposals intend to discharge into the canal, the details will require agreement with the Canal and River Trust.

Further consideration should be given to how off-site strategic attenuation measures will be delivered, in particular the difficulties with integrated SuDS in public highway and subsequent adoption issues.	London Borough of Hammersmith and Fulham	No change proposed. Information on how off-site strategic attenuation measures will be delivered and criteria for their adoption is not an appropriate level of detail for the Local Plan. Any public highways to be adopted by the local highways authority would need to be built in accordance with the relevant adoptable standards, including drainage requirements.
Agree that Development proposals should be required to alleviate localised surface water drainage problems.	London Borough of Hammersmith and Fulham	Noted.
A specific target for maximising reduction in potable water demand should be included, as it was in the previous version of the draft Plan. Targets for improving water efficiency referenced in paragraph 6.43 should also be referenced in the policy text.	London Borough of Hammersmith and Fulham	No change proposed. The target for 105 litres is included in the London Plan, and so is not repeated in Local Plan. Reference to the Mayor's targets for domestic water use is also included in the supporting text to Policy EU3. The wording in the Local Plan maintains flexibility so that any amendment to the targets set out in the London Plan are amended in future.
Text in para 6.36 referencing Counters Creek sewer is considered misleading, as the capacity concerns relate to the sewer's catchment area and not just the single sewer itself. Text should be amended to reflect this.	Thames Water	Change proposed. The supporting text has been amended to refer to the Counters Creek catchment area to properly reflect the capacity concerns.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations
Environmental Standards Study	The development should support the delivery of the spatial vision by delivering and/or contributing towards a high quality, multi-functional green and blue infrastructure network, i.e. accessible for play and recreation, promotes walking or cycling safely, and supports wildlife, urban cooling and flood management. Proposals should:

	G. Make a positive contribution towards climate change. Green infrastructure should be maximised to provide summer shade and cooling, to the buildings and external environment, and appropriate provision for localised surface water attenuation, including sustainable drainage techniques; Maximise efficient use of water: • All new development will be required to meet or exceed OPDC potable water demand targets. As part of planning applications, developers will be required to include strategies demonstrating how targets will be achieved. • All new developments will be required to install smart water meters, covering wastewater discharge as well as potable water use. • OPDC will work with developers, water companies and regulators to ensure potable supply system leakages are minimised. This is expected to include widespread deployment of smart sensors and network management technology. Water neutrality – maximise use of alternative sources for non-potable water • All development will be required to include equipment to ensure rainwater capture targets are achieved. As part of planning applications, developers will be required to include strategies demonstrating how targets will be achieved. • All development will be required to include equipment to ensure greywater recycling targets are achieved. As part of planning applications, developers will be required to include strategies demonstrating how targets will be achieved. Water neutrality – minimise surface water runoff and wastewater discharge • OPDC will work with water companies, the regulator and developers to support development of a storm water attenuation system capable of managing a 1 in 100 + 40% storm water event. The storm water attenuation system will ensure controlled discharge of water to the sewer system and, as appropriate, cleaned and purified water to local water bodies or for reuse.
Infrastructure Delivery Plan	Identifies the infrastructure required to support the regeneration of the area, including social, transport, utility and green infrastructure. • 4.5 Potable Water Network: While it is recognised that all development should minimise the potable water demand created in the area it is inevitable that there will be an increase in demand for potable water in the OPDC area. As such the Regulation 19 OPDC Local Plan Policy EU3 and the Infrastructure Schedule encourage the reinforcement of potable water supply. • 4.6 Foul and Surface Water Infrastructure: There are indications that the current infrastructure will struggle to accommodate the additional flows of foul and surface water projected to be generated by the proposed OPDC development. As a result the Infrastructure Schedule identifies a range of interventions to assist in the management of flow as well as the provision of new sewerage infrastructure. • 4.7 Flood and Water Management: While the OPDC are not a Lead Local Flood Authority there remains a responsibility for developers to conform to the requirements of the individual borough Surface Water Management Plans. This is therefore recognised in the Infrastructure

	Schedule, as are the works for the Tokyngton and Stonebridge Flood Alleviation Scheme.
Integrated Water Management Strategy	• Surface water should be discharged to the Grand Union Canal, where possible, in order to reduce the risk of sewer flooding and minimise the volume of surface water that is treated at the Beckton Sewage Treatment Works. • Sustainable Drainage Systems should be provided to enable the rainfall generated during events with a return period of up to 1 in 100 years plus 40% climate change that is discharged to existing combined sewers to be restricted to greenfield runoff rates, in order to create capacity within the existing combined sewer network to accommodate additional foul flows generated by the development. • Water meters and water efficient appliances should be provided within all dwellings and commercial units to minimise water demand. Consideration should also be given to the use of Combined Rainwater and Greywater recycling systems to supply appliances that utilise non potable water within commercial tenures. • The existing water supply network should be reinforced to provide capacity to supply the development.
Utilities Study	• The existing water supply network will be unable to provide sufficient capacity for the development Thames Water has undertaken a Network Impact Assessment, which defines the extent of network reinforcement works that are required to supply the proposed development. • There is no capacity within the network for surface water drainage. Development needs to achieve greenfield run-off rates. To achieve this, OPDC should adopt a sequential policy, looking to minimise and re-use water, connect into strategic SuDs, if feasible drain into the Grand Union Canal, use on-site SuDS and if on-site, prioritise vegetated SuDS.

Rationale for any non-implemented recommendations

Supporting Study	**Recommendations**	Rationale for not including
Environmental Standards Study	• All new developments will be required to install smart water meters, covering wastewater discharge as well as potable water use. • OPDC will work with developers, water companies and regulators to ensure potable supply system leakages are minimised. This is expected to include widespread deployment of smart sensors and network management technology. • All development will be required to include equipment to ensure greywater recycling targets	• Recommendations are too detailed for inclusion in Local Plan policy, but will be used to inform future SPDs and discussions with stakeholders.

	are achieved. As part of planning applications, developers will be required to include strategies demonstrating how targets will be achieved.	

Other evidence base

Supporting study	Recommendations
N/A	N/A

EU4: Air Quality

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
124	Planning policies should sustain compliance with and contribute towards EU limits values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.

National Planning Practice Guidance

Policy/ paragraph reference	Policy and paragraph text
Air Quality	
Title: What is the Role of Local Plans with Regard to Air Quality? **Paragraph:** 002 **Reference ID:** 32-002-20140306 **Revision Date:** 06.03.2014	Local Plans can affect air quality in a number of ways, including through what development is proposed and where, and the encouragement given to sustainable transport. Therefore in plan making, it is important to take into account air quality management areas and other areas where there could be specific requirements or limitations on new development because of air quality. Air quality is a consideration in Strategic Environmental Assessment and sustainability appraisal can be used to shape an appropriate strategy, including through establishing the 'baseline', appropriate objectives for the assessment of impact and proposed monitoring. Drawing on the review of air quality carried out for the local air quality management regime, the Local Plan may need to consider: • The potential cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments; • The impact of point sources of air pollution (pollution that originates from one place); and, • Ways in which new development would be appropriate in locations where air quality is or likely to be a concern and not give rise to unacceptable risks from pollution. This could be through, for example, identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable.
Title:	When deciding whether air quality is relevant to a planning application, considerations could include whether the development would:

When could Air Quality be Relevant to a Planning Decision? **Paragraph:** 005 **Reference ID:** 32-005-20140306 **Revision Date:** 06.03.2014	• Significantly affect traffic in the immediate vicinity of the proposed development site or further afield. This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; adds to turnover in a large car park; or result in construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more. • Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; or extraction systems (including chimneys) which require approval under pollution control legislation or biomass boilers or biomass-fuelled CHP plant; centralised boilers or CHP plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; • Expose people to existing sources of air pollutants. This could be by building new homes, workplaces or other development in places with poor air quality. • Give rise to potentially unacceptable impact (such as dust) during construction for nearby sensitive locations. • Affect biodiversity. In particular, is it likely to result in deposition or concentration of pollutants that significantly affect a European-designated wildlife site, and is not directly connected with or necessary to the management of the site, or does it otherwise affect biodiversity, particularly designated wildlife sites.
Title: How can an impact on air quality be mitigated? **Paragraph:** 008 **Reference ID:** 32-008-20140306 **Revision Date:** 06 03 2014	Mitigation options where necessary will be locationally specific, will depend on the proposed development and should be proportionate to the likely impact. It is important therefore that local planning authorities work with applicants to consider appropriate mitigation so as to ensure the new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met. Examples of mitigation include: the design and layout of development to increase separation distances from sources of air pollution; using green infrastructure, in particular trees, to absorb dust and other pollutants; means of ventilation; promoting infrastructure to promote modes of transport with low impact on air quality; controlling dust and emissions from construction, operation and demolition; and contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development.

London Plan (2016) Policies

Policy/ paragraph reference	Policy and paragraph text
Chapter 5. Climate Change	
5.7 Renewable Energy	**LDF Preparation** All renewable energy systems should be located and designed to minimise any potential adverse impacts on biodiversity, the natural environment and historical assets, and to avoid any adverse impacts on air quality.
5.17 Waste Capacity	**Planning decisions** B Proposals for waste management should be evaluated against the following criteria • the environmental impact on surrounding areas, particularly noise emissions, odour, air quality and visual impact and impact on water resources
Chapter 6. Transport	
6.13 Parking	outer London boroughs wishing to promote a more generous standard for office developments would need to take into account in a DPD: – no significant adverse impact on congestion or air quality
Chapter 7. London's Living Spaces and Places	
7.14 Improving Air Quality	**Strategic** A. The Mayor recognises the importance of tackling air pollution and improving air quality to London's development and the health and well-being of its people. He will work with strategic partners to ensure that the spatial, climate change, transport and design policies of this plan support implementation of his Air Quality and Transport strategies to achieve reductions in pollutant emissions and minimize public exposure to pollution. **Planning Decisions** B. Development proposals should: a. Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality (particularly within Air Quality Management Areas (aqmas) and where development is likely to be used by large numbers of those particularly vulnerable to poor air quality, such as children or older people) such as by design solutions, buffer zones or steps to promote greater use of sustainable transport modes through travel plans (see Policy 6.3) b. Promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance in the GLA and London Councils' 'The control of dust and emissions from construction and demolition' c. Be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (aqmas)). d. Ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, and that it is possible to put in place measures having clearly demonstrated equivalent air quality benefits, planning obligations or planning conditions should be used as appropriate to ensure this,

	whether on a scheme by scheme basis or through joint area-based approaches e. Where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations. Permission should only be granted if no adverse air quality impacts from the biomass boiler are identified. **LDF Preparation** C. Boroughs should have policies that: a. Seek reductions in levels of pollutants referred to in the Government's National Air Quality Strategy having regard to the Mayor's Air Quality Strategy b. Take account of the findings of their Air Quality Review and Assessments and Action Plans, in particular where Air Quality Management Areas have been designated.

Draft New London Plan (2017) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 3 Design	
Policy D1 London's form and characteristics	Development Plans, area-based strategies and development proposals should address the following: A The form and layout of a place should: • 9) help prevent or mitigate the impacts of noise and poor air quality
Policy D2 Delivering good design	A To identify an area's capacity for growth and understand how to deliver it in a way which strengthens what is valued in a place, boroughs should undertake an evaluation, in preparing Development Plans and area based strategies, which covers the following elements: 5) air quality and noise levels
Policy D7 Public realm	H Incorporate green infrastructure into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, manage heat and increase biodiversity.
Chapter 6 Economy	
Policy E7 Intensification, co-location and substitution of land for industry, logistics and services to support London's economic function	E The processes set out in Parts B, C and D above must ensure that: 4) appropriate design mitigation is provided in any residential element to ensure compliance with 1 and 2 above with particular consideration given to: • e) air quality, including dust, odour and emissions (see Policy SI1 Improving air quality and Policy SI2 Minimising greenhouse gas emissions).
Chapter 9 Sustainable Infrastructure	
Policy SI1 Improving air quality	A London's air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced: 1) Development proposals should not: • a) lead to further deterioration of existing poor air quality

	• b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits • c) reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality • d) create unacceptable risk of high levels of exposure to poor air quality. 2) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. Particular care should be taken with developments that are in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people. 3) The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral. 4) Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance115. 5) Air Quality Assessments (AQAs) should be submitted with all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use. 6) Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated.
Policy SI3 Energy infrastructure	D Major development proposals within Heat Network Priority Areas should have a communal heating system 1) the heat source for the communal heating system should be selected in accordance with the following heating hierarchy: • connect to local existing or planned heat networks • use available local secondary heat sources (in conjunction with heat pump, if required, and a lower temperature heating system) • generate clean heat and/or power from zero-emission sources • use fuel cells (if using natural gas in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) • use low emission combined heat and power (CHP) (in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) • use ultra-low NOx gas boilers. 2) CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that there is no significant impact on local air quality.
Policy SI8 Waste capacity and net waste self-sufficiency	D Developments proposals for new waste sites or to increase the capacity of existing sites should be evaluated against the following criteria:

	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

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
Mayor's Priorities (p. 98)	• Developers are to design their schemes so that they are at least 'air quality neutral'. • Developments should be designed to minimise the generation of air pollution. • Developments should be designed to minimise and mitigate against increased exposure to poor air quality. • Developers should select plant that meets the standards for emissions from combined heat and power and biomass plants. • Developers and contractors should follow the guidance set out in the emerging Minimising dust and emissions from construction and demolition SPG when constructing their development.
4.3.5	Minimising emissions to the air Location and transport measures 4.3.5 Section 2.2 sets out that developments and land uses which generate a high number of trips are encouraged into areas of high public transport accessibility. Chapter 6 of the London Plan sets out the transport measures that are encouraged to support development. Policy 6.3 specifically requires transport assessments for major planning applications and seeks the submission of travel plans, construction logistic plans and delivery and servicing management plans from developers. These plans and assessments seek to ensure the capacity and safety of the transport network, and help minimise emissions into the air. Further guidance on optimising the use of land is provided in section 2.2.
4.3.6	Construction and demolition 4.3.6 The Mayor's emerging SPG on The control of dust and emissions from construction and demolition sets out how impacts on air quality can be minimised during the construction phase of development and advises on necessary mitigation measures. It focuses on the following five areas: demolition; • earthworks; • construction; • trackout; and • non-road mobile machinery (NRMM).
4.3.7 4.3.8 4.3.9 4.3.10	Design and Occupation Exposure to poor air quality 4.3.7 The location and design of a development has a direct influence on exposure to elevated air pollution levels. This is particularly relevant where developments include sensitive uses such as hospitals, schools, open spaces and playgrounds. Developers should maximise the contribution the building's design, layout and orientation make to avoiding the increased exposure to poor air quality and therefore these elements need to be considered at the initial design stage. An air tight building (as required by energy policy – see section 2.4) with any

	air intakes located away from the main source of air pollution will help minimise increased exposure to poor air quality. It is recommended that developers adhere to European standard EN 13779 to ensure that air filters are fitted and regularly maintained. 4.3.8 Developers should optimise their building design to ensure adequate dispersion of emissions from discharging stacks and vents by incorporating the guidance contained within Section 6.2 of the Technical Guidance Note D1 (Dispersion) 'Guidelines on Discharge Stack Heights for Polluting Emissions'. The design should take into account the visual effects of dispersion measures at the initial design stage. Heating appliances with a thermal input rated less than 70kW (natural gas), 50kW (solid fuel) and 45kW (liquid fuel) must meet the minimum design requirements specified by Approved Document J 'Combustion Appliances and Fuel Storage Systems' under the Building Regulations 2010 . 4.3.9 Developers should also consider the location of outside space including gardens, balconies and roof terraces proposed in areas of particular poor air quality. These should be screened where practical with exposure minimised through appropriate positioning and design. The latest evidence suggests that green infrastructure, especially mature trees89 can have a small but beneficial effect, absorbing air pollution to reduce local concentrations and/or acting as a protective screen. The location of equipment should not result in flues and exhaust vents being in close proximity to recreational areas. 4.3.10 In order to assist developers and architects in designing air quality improvements into the urban realm the GLA is producing Air Quality Street guidance which will provide best practice examples and signposting.
4.3.11 4.3.12	Protecting internal air quality 4.3.11 To protect internal air quality, developers should specify environmentally sensitive (non-toxic) building materials and the use of materials or products that produce VOC (volatile organic compounds) and formaldehyde which can affect human health should be avoided. The use of 'healthy' material options can contribute towards attaining the BREEAM/Code for Sustainable Homes credits but a clear audit trail will need to be provided to gain these credits. 4.3.12 It is also important to maintain combustion plant and equipment such as boilers and ensure they are operating at their optimum efficiency to minimise harmful emissions. A maintenance regime should be outlined in an Air Quality Assessment, where required and could be secured by condition or s106 agreement by the borough.
4.3.13 4.3.15 4.3.16	Air Quality Neutral 4.3.13 The NPPF90 states that planning policies should sustain compliance with and contribute towards meeting EU limits values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan. 4.3.14 The London Plan and the Mayor's Air quality Strategy set out that developments are to be at least 'air quality neutral'. To enable the implementation of this policy emission benchmarks have been produced for buildings' operation and transport across London based on the latest technology (including its effectiveness and viability). Developments that do not exceed these benchmarks will be considered to avoid any increase in NOx and PM emissions across London as a whole and therefore be 'air quality neutral'. These are to be considered minimum benchmarks and will be kept under review and will be updated in line with technological and commercial advances.

	4.3.15 This policy applies to all major developments in Greater London. Developers will have to calculate the NOx and/or PM10 emissions from the buildings and transport elements of their developments and compare them to the benchmarks set out in Appendix 5 and 6. For smaller developments paragraphs 4.3.23 – 4.3.25 set out emissions standards for combustion plant. Where schemes do not meet the 'air quality neutral' benchmarks, after mitigation measures have been implemented onsite, the developer will be required to off-set emissions off-site. Further information on off-setting requirements is included below. 4.3.16 To complement this policy emission standards have been recommended for combustion plant that provide heat and power to developments. These are outlined in paragraphs 4.3.20 – 4.3.25.
4.3.17	Emissions from buildings 4.3.17 Two Building Emission Benchmarks (BEBs) have been defined; one for NOx and one for PM10, for a series of land-use classes. The benchmarks are provided in Appendix 5. Section 4 of The Air quality neutral report92 provides further details on how to apply these benchmarks.
4.3.18 4.3.19	Transport emissions 4.3.18 Developments should be designed to encourage and facilitate walking and cycling and the use of public transport. This will enable air pollutants deriving from a particular development to be minimised. To further support this policy, boroughs should also ensure developments do not exceed local car parking standards. 4.3.19 To meet 'air quality neutral', the benchmarks set out in Appendix 6 should be met. Section 4 of The Air quality neutral report provides further details on how to apply these benchmarks.
4.3.20 - 4.3.25	Emission standards for combustion plant 4.3.20 The London Plan states that new development proposals should meet the minimum standards outlined in this SPG. Emission standards are provided for: • individual gas boilers; • communal gas boilers; • solid biomass boilers; and • combined Heat and Power (CHP) plant. Ultra Low NOx boilers 4.3.21 Where individual and/or communal gas boilers are installed in commercial and domestic buildings they should achieve a NOx rating of <40 mgNOx/kWh. Guidance issued by DCLG94 notes that individual gas boilers with NOx emissions lower than 40 mg/kWh are now standard for many developers and hence no extra cost is incurred. 4.3.22 Planning authorities have limited control over the plant installed in smaller developments, but most boroughs require new development to comply with Level 3 or 4 of the Code for Sustainable Homes or BREEAM 'very good' or 'excellent'. To encourage developments to make their contribution to air quality 'neutral' across London, boroughs may consider encouraging developers to obtain the maximum number of credits in the NOx emissions Issue (CfSH - Pol2 and BREEAM - Pol4). This equates to NOx emissions of no greater than 40 (mg/kWh) from heating plant. Solid biomass and CHP plant 4.3.23 Emissions standards have been developed based on the latest technology, viability and the implication for carbon dioxide emissions of any abatement measures to reduce the NOx and PM10 emissions from the plant. The emission standards are provided in Appendix 7 and are target minimum standards. Plant proposed within developments is to comply with these

	standards, in addition to the development meeting the overall 'air quality neutral' benchmarks. If an assessment indicates that significant air quality effects may occur even when meeting the emission standards, additional measures (such as stack height increase, enforcement of more stringent standards etc.) should be considered in order to produce an acceptable level of impact. 4.3.24 These emission standards apply to all developments in London where solid biomass or CHP plant are proposed. These standards will be kept under review and will be updated in line with technological and commercial advances. 4.3.25 It is acknowledged that developers may not procure plant until planning permission has been obtained. Developers will therefore be required to provide a written statement of their commitment and ability to meet the emission standards within their Air Quality Assessments. When securing these emissions standards, it is best to agree maximum emissions as opposed to the technology. Technology may improve between the time planning permission is granted and the equipment is procured.
4.3.26 – 4.3.28	Off-setting provisions 4.3.26 Developers of schemes which do not meet the 'air quality neutral' benchmark for buildings or transport (considered separately) after appropriate onsite mitigation measures have been incorporated will be required to off-set any excess in emissions. The developer should investigate options for providing NOx and PM abatement measures offsite in the vicinity of the development. This will involve working with the relevant planning authority or nearby property owners to identify suitable mitigation measures. Measures could include: • green planting/walls and screens, with special consideration given to planting that absorbs or supresses pollutants; • upgrade or abatement work to combustion plant; • retro-fitting abatement technology for vehicles and flues96; and • exposure reduction. 4.3.27 For the purpose of this policy air quality monitoring is not eligible for funding as it is not considered to contribute to actual air quality improvements. 4.3.28 Measures could be provided in whole or part directly by the developer or by making a contribution to an existing project. Measures should be secured by condition or s106, as appropriate. However, any agreement for off-site measures, including financial contribution, need to consider any restrictions imposed by the CIL Regulations.

Mayor's Control of Dust and Emissions during Construction and Demolition SPG (2014)

Policy/ paragraph reference	Policy and paragraph text
3.2 – 3.15	3.22 With the application submission, developers will be expected to produce an Air Quality Assessment. This should include an Air Quality (Dust) Risk Assessment (as set out in Chapter 4). 3.3 The risk category of the site calculated in the Dust Risk Assessment should be used to give an indication of likely required dust emission and

	control measures (as set out in Chapter 5). A list of control measures likely to be required should be included in Air Quality (Dust) Risk Assessment. 3.4 Local authorities have planning powers which allow them to decide whether a condition or s106 legal agreement is necessary to secure measures to safeguard health and prevent nuisance and, if necessary, what level of enforcement is needed. Examples of standard conditions can be found in Appendix 4. 3.5 In addition to planning enforcement powers, local authorities also have various regulatory powers which apply to certain activities, for example for mobile crushing. These activities are regulated as Part B process (under The Environmental Protection Act 1990 - see Appendix 2). Local authorities, as regulators of Part B processes, are responsible for controlling emissions from these activities and can set conditions in the permits they issue to achieve this. Conditions are based on best available techniques, which require that the cost of applying a technique is not excessive in relation to the environmental protection it provides. The Department for the Environment, Food and Rural Affairs (DEFRA) has produced Process Guidance Notes, which form the statutory guidance on what constitutes best available techniques (see Appendix 5 for details) for each regulated process. Local authorities can take enforcement action if they believe that an operator has contravened, or is likely to contravene any permit conditions 3.6 Guided by the Air Quality Assessment, local authorities would make use of these powers during the application phase. Should the application be successful, local authorities will work with developers prior to demolition or construction to ensure appropriate solutions to minimise air quality emissions will be implemented using the powers detailed above. 3.7 Developments outside the formal local planning process (e.g. for permitted developments or those with Parliamentary approval) should consider providing the information as set out below as part of the normal dialogue with the relevant local planning authority. 3.8 An Air Quality and Dust Management Plan (AQDMP) should be produced prior to any construction or demolition works after the planning application phase. The AQDMP can therefore be informed by any planning conditions or s106 agreements following the developments application. 3.9 The AQDMP should give specific instructions on how to manage impacts from dust and air pollutant emissions on the development site. It should cover all phases of the construction process and take account of all contractors or subcontractors. The production of an AQDMP will assist developers to comply with The Environmental Protection Act 1990 which makes it an offence to cause a nuisance to nearby inhabitants by generating dust. 3.10 The specific content of an AQDMP will be determined through the site evaluation processes. These should be set out for each relevant phase of work (demolition, earthworks, construction and trackout. Typical aspects of an AQDMP will include: • Summary of work to be carried out; • Description of site layout and access – including proposed haul routes, location of site equipment including supply of water for damping down, source of water (wherever possible from dewatering or extraction), drainage and enclosed areas to prevent contaminated water leaving the site; • Inventory and timetable of all dust and NOx air pollutant generating activities; • Results of an Air Quality (Dust) Risk Assessment (see Chapter 4); • List of all dust and emission control methods to be employed (see Chapter 5); • Details of any fuel stored on-site;

	• Identification of a trained and responsible person on-site for air quality. This person needs to have knowledge of pollution monitoring and control methods and vehicle emissions; • Summary of monitoring protocols and agreed procedure of notification to the local authority nominated person(s); and • A site log book to record details and action taken in response to incidents or dust-causing episodes and the mitigation measure taken to remedy any harm caused and measures employed to prevent a similar incident reoccurring. It should also be used to record the results of routine site inspections. 3.11 All staff should have some training of on-site pollution policy, perhaps as part of induction training. For major developments, at least one named individual or post should be given the responsibility for implementing dust monitoring and control measures across the site and implementing any required remediation measures. 3.12 The AQDMP may be complemented by a site-specific method statement. A method statement is an industry term used to plan in detail demolition and construction activities and processes. 3.13 Depending on the developer, one or more method statements may be prepared to plan the various demolition / construction activities to occur. 3.14 For sites with potentially asbestos containing materials, a separate management plan will need to be produced by a specialist asbestos treatment contractor. 3.15 The AQDMP should be kept under review to address any changes in the demolition / construction timetable or associated dust and NOx emitting activities

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
Principle E3	Proposals should: a. Minimise the generation of air pollution, both during and post construction, making new developments 'air quality neutral' or better; and b. Achieve EU established health-based standards and objectives for a number of air pollutants (NOx, PM10 and PM2.5).

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	**Alternative policy option**
12.99	No alternative policy options have been identified as alternatives would be to not have policies promoting improvements to air quality and this would not be consistent with the NPPF or in general conformity with the London Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Quality of the environment: Area, particularly Horn Lane, is heavily polluted and not suitable for residential development. There is a suggestion that it should be commercially focussed instead and the policy should consider environmental factors/impact.	5 local residents	Noted. Horn Lane is outside of the OPDC area. Within the OPDC area, OPDC's Environmental Standards Study and Air Quality Study have set benchmarks for environmental sustainability, which will look to reduce pollution at source and if not feasible, make recommendations for appropriate mitigation in order to ensure that development in Old Oak and Park Royal delivers high standards of health and well-being. These recommendations have been embedded into the Local Plan.
Levels of traffic and pollution: There are concerns about the levels of traffic and pollution on Old Oak Lane and a request for proposals to make every effort to limit traffic growth, divert lorries and mitigate the effect on the pedestrian environment. It is noted that the Policy does not have a criteria which addresses this.	Ealing Council, local resident, TITRA	Change proposed. OPDC are intended to implement stringent car parking levels within for new developments in Old Oak to mitigate impacts on Old Oak Lane. The Victoria Road and Old Oak Lane Development Principles document has considered measures to mitigate impacts of traffic on Old Oak Lane and these recommendations have been incorporated into the revised Local Plan. The Air Quality Study identified Old Oak Lane as an air quality focus area. Comments on the air quality have been fed through to the consultants leading on the study, who have made further alterations to the study. The place policy for Old Oak Lane and Old Oak Common Lane requires development to support amenity and health and well-being by ensuring development mitigates the impacts of noise and air pollution generated by Old Oak Sidings waste facility, SIL uses on the Harlesden Bus Depot site and construction activities including associated vehicle movement and contributing to and/or delivering measures that help support OPDC, the boroughs and where relevant

		TfL, to address air quality issues along Victoria Road and Old Oak Lane including street greening.
Air Quality Study: Stakeholders made a number of suggestions for measures to incorporate into the Air Quality Study and associated policy, including: - Providing "express routes" to get HGVs off small local roads; - Extend monitoring locations; - Avoidance of street canyons; - Specific measures around Old Oak Lane	Environment Agency, Grand Union Alliance, Hammersmith and Fulham Council, TITRA, 1 local resident	Change proposed. The Air Quality Study has been updated to take on board a number of comments from stakeholders. Policy T8 deals with construction traffic management and supports the use of consolidation centres, maximum use of rail and water for transporting construction, use of local waste management sites and production of Construction Logistics Plans and Construction Code of Practices to manage construction impacts on highways. OPDC does not propose to extend the coverage of monitoring locations as the identified locations within the Regulation 18 Local Plan were considered to provide good coverage. The Air Quality Study has been updated to require avoidance of street canyons and the air quality policy (EU4) refers to this need. Old Oak Lane was already identified as an air quality focus area in the Regulation 18 Local Plan.
Air Quality policy: Stakeholders felt that OPDC should be more ambitious in terms of its approach to air quality, by making the policy more binding and stronger in terms of its requirements of developers and proposed mitigation measures. Hammersmith and Fulham stated that any measures would need to be agreed with the council, to reflect the council's statutory duties relating to air quality.	Grand Union Alliance, Hammersmith and Fulham Council	Change proposed. The air quality policy has undergone substantial revisions to make the requirements more binding and tie the policy into updates in the Air Quality Study. The supporting text to the policy refers to the statutory duties of local authorities and the need for recommendations in borough Air Quality Action Plans (AQAPs) to be considered.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Concerns regarding noise, air and light pollution from construction over the next 10 to 30 years.	Joanna Betts, Nadia Samara, Nicholas Kasic, Francis, Marc and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton, Wells House Road Residents Association	"Noted. Policy EU4 and table 6.1 provide policy for minimising air pollution and making a positive contribution to overall improvement in air quality. Policy EU5 provides policy for mitigating impacts of noise and vibration. In addition, the draft London Plan provides policies on mitigating pollution from construction which developers working in the OPDC area will be subject to. Change proposed. OPDC has amended D6 to provide clearer guidance for addressing light pollution."
P3 should support electrical connections along the canal to reduce air pollution from boats.	CRT	No change proposed. OPDC and CRT are in discussion about how the canal can be enhanced both for barges/boats and other users and are jointly developing a Canal Waterspace Strategy. Policy P3 promotes enhancement and use of the canal. Providing electric charging points will be considered through those discussions.
Strongly support EU4	Environment Agency	Noted.
Area has poor air quality and tall buildings will make this worse.	Local residents (Ron Thorp and Douglas Hunt)	No change proposed. Policy EU4 recognises the potential impact tall buildings have on air quality and seeks to mitigate this. The Supporting Air Quality Study that accompanies the draft Local Plan also seeks to address this. Developers will be required to demonstrate how they contribute to new draft London Plan requirements to deliver Air Quality Positive development.
lack of monitoring details but support air quality monitoring point in old oak lane	Friary Park Preservation Group, Martin Cain, TITRA (Mark Walker, Nicky Guymer, Bruce Stevenson), Midland Terrace Residents (Ewa Cwirk-Godycka, Nye Jones) , Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette	No change proposed. Monitoring will be included in the Authority Monitoring Report.

	Hollender, Jeremy Aspinall, Thomas Dyton	
The Plan should require that no new development takes place in areas exceeding acceptable EU standards of maximum air and noise pollution. Sensitive uses should not be permitted in areas with poor air quality.	Wells House Road Residents, Joanna Betts, Marc and Caroline Francis, Lily Gray, Catherine Sookha	No changed proposed. Policy EU4 requires proposals to mitigate impacts to acceptable levels. It is not considered sound to implement a blanket ban on sensitive uses in such locations where impacts can be appropriately mitigated. Further, in line with the draft London Plan, OPDC will seek to ensure development contributes to air quality positive development.
Text from table 6.1 should be strengthened, and included in each place policy.	Wells House Road Residents, Joanna Betts, Marc and Caroline Francis, Lily Gray, Catherine Sookha	No change proposed. Policy EU4 will need to be complied with by all developers and will apply to all aspects of their proposal. It is therefore not considered necessary to include the table in each place policy. Further, in line with the draft London Plan (2017), all development will be required to demonstrate how it is contributing to the Mayor's air quality positive objective.
Support policy but should be clearer who the controlling and monitoring bodies are	Hammersmith Society, Tom Ryland, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No changed proposed. Reference to the appropriate controlling and monitoring bodies is made in the Local Plan where appropriate.
An additional policy (EU4.i) should require all major developments to use low emission vehicles during construction.	Old Oak Interim Neighbourhood Forum (Mark Walker), TITRA (Dave Turner, Mark Walker) , Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Such a policy, although admirable, would require many SME companies to upgrade their fleets, meaning that they would be unlikely to tender for construction contracts in the OPDC area -thus impacting significantly on small businesses which OPDC is seeking to support. OPDC will however keep the potential for such a policy under review for

		consideration as part of future iterations of the Local Plan.
Air quality policy is weak and ineffective	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. The policy requiring Air Quality Assessments has been significantly strengthened to address stakeholder comments.
A Low Emissions Neighbourhood (LEN) should be included as a policy and not just in the supporting text	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. This is not something that can be designated through the Local Plan as it is a TfL scheme and applications must be made to TfL. However, the establishment of a LEN is promoted in the Plan and OPDC will review options to establish a LEN and promote better air quality in partnership with the GLA, TfL and local businesses and residents.
The policy doesn't provide a convincing strategic approach that will deliver good air quality in an area where growing number of people will live	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC officers believe the policy and supporting study are sound and will help to improve air quality in the area.
Proactive measures including green walls and planting should be adopted to reduce exposure to air pollution	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall	No change proposed. Policy EU1 and EU2 encourage the use of open space, green infrastructure, green walls and planting more generally, which will support enhancements to air quality.

As LBHF is an Air Quality Management Area under the 1995 Environment Act – Part IV, impacts of any development must be agreed with the Council. This should be established in this policy particularly as the Council is financially liable for EU fines if it fails to meet minimum standards for air quality. Policy EU4 should take into account LBHF policy CC10.	LBHF, Wells House Road Residents, Joanna Betts, Marc and Caroline Francis, Lily Gray, Catherine Sookha	Change proposed. The role of the Local Authority for Air Quality has been emphasised in the supporting text. In addition, the requirement for an Air Quality Assessment on major developments, which was previously set out in table 6.1 and the accompanying Air Quality Study has been given more prominence and included as a policy requirement, which closely aligns with the LBHF policy.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
The Local Plan sets out the importance of open space as an integral component of a successful place making and sustainable development.	Canal & River Trust	Noted.
Policy should recognise that the relevant local authorities are responsible for the management of Air Quality within their boundary, reflect policies on air quality from the boroughs Local Plans, and require that impacts of development in the OPDC area should be agreed with the relevant local authority.	London Borough of Hammersmith and Fulham	No change proposed. The Policy requires proposals to comply with the relevant boroughs Air Quality Action Plans (AQAPs) and the supporting text clarifies that impacts of any new development should be subject to review by the host authority.
Wording across the policy and supporting text for EU4 and TCC8 should refer to levels set out in World Health Organisation (WHO) air quality guidance for levels of NO2, PM 2.5 and PM10, rather than just national guidance. This approach is support by the Mayor's London Environment Strategy.	London Borough of Hammersmith and Fulham	Change proposed. Reference to the Mayor of London's commitment to achieving World Health Organisation targets has been included in the supporting text to EU4.
Supporting text and Table 6.1 should be amended to require electric vehicle charging points for all parking spaces, including for servicing and deliveries.	London Borough of Hammersmith and Fulham	No change proposed. Policy T4 (Parking) requires any proposals delivering car parking to incorporate 20% active provision and 80% passive provision electric charging points for electric vehicles at all new parking spaces. This approach reflects requirements set out in draft new London Plan and is supported by Transport for London.

Supporting text should require the locations of new Air Quality Monitoring locations to be agreed in consultation with the relevant Local Authority, and comply with LLAQM technical guidance.	London Borough of Hammersmith and Fulham	No change proposed. The supporting text to Policy EU4 acknowledges that local authorities are responsible for air quality within their boundary and that the impacts of development will be subject to their review. Any proposals requiring the delivery of air quality monitoring equipment identified in Policy EU4 will be delivered in agreements with the relevant local authority. Further details of air quality monitoring equipment will be delivered and managed will be including OPDC's forthcoming Planning Obligations SPD.
Impact of building and plot morphology on achieving policy requirements should be referenced.	Grand Union Alliance	No change proposed. The requirement for proposals to design and position buildings and spaces in such a way that they do no inhibit effective pollution dispersion is included within the Policy.
Additional traffic generated by development in the area will compound existing air quality issues and render the policy ineffective.	Grand Union Alliance	No change proposed. Strategic Policy SP7, and the transport policies of chapter 7, outlines how development proposals should support the delivery of OPDC's Sustainable Transport Hierarchy. This discourages the use of private motorised vehicles and limits car parking and prioritises sustainable modes of transport.
Specific reference to the need for different types of development to mitigate air quality pollution and be oriented away from the main sources of poor air quality should be included in policies across the Local Plan, including D4, D6, E6, TCC4, and TCC6.	London Borough of Hammersmith and Fulham	No changed proposed. The need for development to appropriately minimise air pollution and to be designed in such a way as to minimise exposure to elevated levels of air pollution is required through Policy EU4. Including references to this across multiple policies would result in repetition.
Welcome additional wording regarding canyoning effect, though it does not fully address previous concerns raised on the potential for canyoning along the Grand Union Canal.	Canal & River Trust	No change proposed. Guidance for massing and enclosure along the Grand Union Canal is provided in Policy P3.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations
Air Quality Study	• Adopt a wide range of measures and policies to mitigate against threats to air quality and ensure air quality is comprehensively monitored and assessed when individual developments are proposed. • Manage new development so that it does not add extra emissions to the area. • The area is suitable for declaration as a TfL Low Emissions Neighbourhood. • Adopt policies to minimise travel by private vehicle and encourage transport by low emission modes (walking, cycling and public transport). • Adopt innovative solutions to avoid emissions including consolidation of freight and use of clean freight vehicles. • Support extension of Ultra Low Emissions Zone (ULEZ). • Require development to meet the tightest emissions for on-site plant. • Adopt full enclosure of waste sites in line with Environment Agency guidance. • Plan construction activity in detail to minimise dust emissions and adopt highest standards for emissions from all plant and vehicles during construction.
Environmental Standards Study	Operational phase emissions – transport • OPDC will work with developers, transport infrastructure providers and regulators to support use of integrated demand management, public transport and nonmotorized transport to reduce emissions, promote improvement of local air quality and reduce exposure to emissions. • As part of planning applications, developers will be required to submit an Air Quality Management Plan (AQMP) which clearly demonstrates how developments will use integrated demand management, public transport and non-motorised transport measures, including streetscape, public realm and green infrastructure planning, to encourage: o Reduction in overall travel. • Modal shift to more carbon efficient and lower impact modes Low / zero-emission onsite energy generation and waste management • OPDC will work with energy service providers and developers to support development of onsite energy generation plant and facilities which produces either zero or very low air emissions, exceeding current requirements for London as set out in the Mayor's Sustainable Design and Construction SPG. • OPDC will work with waste management service providers to support development of onsite waste management plant and facilities which minimises air emissions. New buildings emissions • As part of their AQMP submission developers will be required develop strategies clearly demonstrating how they will exceed current Mayoral guidance for air quality neutral development, in accordance with OPDC sitewide targets. Freight related emissions • OPDC will work with developers, infrastructure providers and freight operators to support development which promotes lower impact and

	more efficient movement of freight. As part of their AQMP submission, developers will be required develop strategies clearly demonstrating how emissions from freight deliveries will be reduced. Low emission vehicles, electric vehicles and CAVs • OPDC will support the provision of infrastructure and financial or other incentives promoting low emission vehicles and which enables future use of CAVs. • OPDC will support provision of infrastructure for low emission vehicles and supporting financial or other incentives, which encourage modal shift to more carbon efficient and lower impact transport modes. • As part of their AQMP submission, developers will be required to develop strategies clearly demonstrating how development will support use of low emission vehicles, electric vehicles and CAVs. Construction related emissions OPDC will work with developers and contractors to support development which minimises air emissions from construction. • As part of their AQMP submission, developers will be required to develop strategies clearly demonstrating how construction related emissions will be minimised. Such strategies should be closely linked to those for operational freight movement, including minimising movement, using lower impact transport modes and equipment/plant, and controlling dust/ particulates.
Utilities Study	• Recommends reviewing the air quality implications of any proposals for Energy from Waste in the OPDC area. • Recommends use of smart technology to monitor impact to traffic flows so as to mitigate impact on air quality.

Rationale for any non-implemented recommendations

Supporting Study	**Recommendations**	Rationale for not including
Environmental Standards Study	Controlling indoor air quality • As part of their AQMP submission, developers will be required to develop a low/zero VOC emissions materials, fittings and fixtures strategy for all development demonstrating how site-wide VOC related indoor air quality targets will be met. • As part of planning applications, all development proposals will be required to include a ventilation, air filtration and air cleaning systems design clearly demonstrating how site-wide CO2 and VOC emissions targets will be met. Measuring and monitoring indoor air quality • Post-construction, pre-occupancy testing and verification will be required for all new and retrofit	• Recommendation to be considered as part of a potential future SPD.

	development to ensure compliance with site-wide VOC emissions targets. Post-occupancy testing and verification will be required for all new and retrofit development to ensure compliance with site-wide CO2 emissions targets. • All developments will be required to include smart technology enabling users to monitor in real time building performance against site-wide indoor air quality targets	

Other evidence base

Supporting study	Recommendations
Land-Use Planning & Development Control: Planning For Air Quality (IAQM and EPUK - 2017)	5.10 Principles of Good Practice Good practice principles should be applied to all developments that have not been screened out using criteria such as those in paragraph 5.8. These cover both emissions and exposure, and address both the design and operational phases. Some examples of such principles include the following. Design phase • New developments should not contravene the Council's Air Quality Action Plan, or render any of the measures unworkable; • Wherever possible, new developments should not create a new "street canyon", or a building configuration that inhibits effective pollution dispersion; • Delivering sustainable development should be the key theme of any application; • New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads, or directing combustion generated pollutants through well sited vents or chimney stacks. Operational phase • The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1000m2 of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made. • Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety. • All gas-fired boilers to meet a minimum standard of < 40 mgNOx /kWh. • All gas-fired CHP plant to meet a minimum emissions standard of: • ˚ Spark ignition engine22: 250 mgNOx/Nm3; • ˚ Compression ignition engine23 : 400 mgNOx /Nm3 ; • ˚ Gas turbine24: 50 mgNOx /Nm3

	• A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of: • ˚ Solid biomass boiler25: 275 mgNOx /Nm3 and 25 mgPM/Nm3 • (These suggested emission benchmarks represent readily achievable emission concentrations by using relatively simple technologies. They can be bettered by using more advanced control technology and at additional cost over and above the 'typical' installation.)

EU5: Noise and Vibration

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
109	The planning system should contribute to and enhance the natural and local environment by: • preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;
123	Planning policies and decisions should aim to: • avoid noise from giving rise to significant adverse impacts27 on health and quality of life as a result of new development; • mitigate and reduce to a minimum other adverse impacts27 on health and quality of life arising from noise from new development, including through the use of conditions; • recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established;28 and • identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.
143	In preparing Local Plans, local planning authorities should: • set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality; • when developing noise limits, recognise that some noisy short-term activities, which may otherwise be regarded as unacceptable, are unavoidable to facilitate minerals extraction;
144	When determining planning applications, local planning authorities should: • ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties;

National Planning Practice Guidance

Policy/ paragraph reference	Policy and paragraph text
Noise	
Title: How to determine the noise impact? **Paragraph:** 003 **Reference ID:** 30-003-20140306 **Revision Date:** 06 03 2014	Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider: • whether or not a significant adverse effect is occurring or likely to occur; • whether or not an adverse effect is occurring or likely to occur; and • whether or not a good standard of amenity can be achieved. In line with the Explanatory note of the noise policy statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation. As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy.
Title: How can the adverse effects of noise be mitigated? **Paragraph:** 008 **Reference ID:** 30-008-20140306 **Revision Date:** 06 03 2014	This will depend on the type of development being considered and the character of the proposed location. In general, for noise making developments, there are 4 broad types of mitigation: • engineering: reducing the noise generated at source and/or containing the noise generated; • layout: where possible, optimising the distance between the source and noise-sensitive receptors and/or incorporating good design to minimise noise transmission through the use of screening by natural or purpose built barriers, or other buildings; • using planning conditions/obligations to restrict activities allowed on the site at certain times and/or specifying permissible noise levels differentiating as appropriate between different times of day, such as evenings and late at night, and; • mitigating the impact on areas likely to be affected by noise including through noise insulation when the impact is on a building. For noise sensitive developments mitigation measures can include avoiding noisy locations; designing the development to reduce the impact of noise from the local environment; including noise barriers; and, optimising the sound insulation provided by the building envelope. Care should be taken when considering mitigation to ensure the envisaged measures do not make for an unsatisfactory development (see the guidance on design for more information).
Title: Are there further considerations relating to mitigating the impact of noise on residential developments? **Paragraph:** 009 **Reference ID:**	Yes – the noise impact may be partially off-set if the residents of those dwellings have access to: • a relatively quiet facade (containing windows to habitable rooms) as part of their dwelling, and/or; • a relatively quiet external amenity space for their sole use, (eg a garden or balcony). Although the existence of a garden or balcony is generally desirable, the intended benefits will be reduced with increasing noise exposure and could be such that significant adverse effects occur, and/or;

30-009-20140306 **Revision Date:** 06 03 2014	• a relatively quiet, protected, nearby external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings, and/or; • a relatively quiet, protected, external publically accessible amenity space (eg a public park or a local green space designated because of its tranquillity) that is nearby (eg within a 5 minutes walking distance). The management of the noise associated with particular development types is considered in the following documents:
Title: Can Local Plans include noise standards? **Paragraph:** 010 **Reference ID:** 30-010-20140306 **Revision Date:** 06 03 2014	Yes, local planning authorities working with local communities and business may decide to develop and include in their Local Plans specific standards to apply to various forms of proposed development and locations in their area. Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed. Noise standards developed through Local Plans only need be concerned with the management of noise to and from the local environment (with the exception of teaching and learning spaces within schools where external noise is also a consideration in building regulations.
Title: What factors are relevant to identifying areas of tranquillity? **Paragraph:** 012 **Reference ID:** 30-012-20140306 **Revision Date:** 06 03 2014	There are no precise rules, but for an area to be protected for its tranquillity it is likely to be relatively undisturbed by noise from human caused sources that undermine the intrinsic character of the area. Such areas are likely to be already valued for their tranquillity, including the ability to perceive and enjoy the natural soundscape, and are quite likely to be seen as special for other reasons including their landscape.

London Plan (2016) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 5. Climate Change	
5.3 Sustainable Design and Construction	Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • minimising pollution (including noise, air and urban runoff)
Chapter 7. London's Living Spaces and Places	
7.7 Location and Design of Tall Buildings	Tall buildings: a should not affect their surroundings adversely in terms of microclimate, wind turbulence, overshadowing, noise, reflected glare, aviation, navigation and telecommunication interference

7.15 Reducing and Managing Noise, Improving and Enhancing the Acoustic Environment and Promoting Appropriate Soundscapes	Strategic A The transport, spatial and design policies of this plan will be implemented in order to reduce and manage noise to improve health and quality of life and support the objectives of the Mayor's Ambient Noise Strategy. Planning decisions B Development proposals should seek to manage noise by: • a avoiding significant adverse noise impacts on health and quality of life as a result of new development; • b mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens on existing businesses; • c improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity); • d separating new noise sensitive development from major noise sources (such as road, rail, air transport and some types of industrial development) through the use of distance, screening or internal layout – in preference to sole reliance on sound insulation; • e where it is not possible to achieve separation of noise sensitive development and noise sources, without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through the application of good acoustic design principles; • f having particular regard to the impact of aviation noise on noise sensitive development; • g promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver. LDF preparation C Boroughs and others with relevant responsibilities should have policies to: • a manage the impact of noise through the spatial distribution of noise making and noise sensitive uses; • b identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.

Draft New London Plan (2017) Policies

Policy/ paragraph reference	**Policy and paragraph text**
Chapter 3 Design	
Policy D12 Agent of Change	A The Agent of Change principle places the responsibility for mitigating impacts from existing noise-generating activities or uses on the proposed new noise-sensitive development. B Boroughs should ensure that planning decisions reflect the Agent of Change principle and take account of existing noise-generating uses in a sensitive manner when new development, particularly residential, is proposed nearby.

	C Development proposals should manage noise and other potential nuisances by: 1) ensuring good acoustic design to mitigate and minimise existing and potential impacts of noise generated by existing uses located in the area 2) exploring mitigation measures early in the design stage, with necessary and appropriate provisions secured through planning obligations 3) separating new noise-sensitive development where possible from existing noise-generating businesses through distance, screening, internal layout, sound-proofing and insulation, and other acoustic design measures. D Development should be designed to ensure that established noise generating venues remain viable and can continue or grow without unreasonable restrictions being placed on them. E New noise-generating development, such as industrial uses, music venues, pubs, rail infrastructure, schools and sporting venues proposed close to residential and other noise-sensitive development should put in place measures such as soundproofing to mitigate and manage any noise impacts for neighbouring residents and businesses. F Boroughs should refuse development proposals that have not clearly demonstrated how noise impacts will be mitigated and managed.
Policy D13 Noise	A In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by: 1) avoiding significant adverse noise impacts on health and quality of life 2) reflecting the Agent of Change principle to ensure measures do not add unduly to the costs and administrative burdens on existing noise generating uses 3) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on development 4) improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity) 5) separating new noise-sensitive development from major noise sources (such as road, rail, air transport and some types of industrial use) through the use of distance, screening or internal layout – in preference to sole reliance on sound insulation 6) where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles 7) promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver. B Boroughs, and others with relevant responsibilities, should identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.
Chapter 7 Heritage and Culture	
Policy HC6 Supporting the night-time economy	B In Development Plans, town centre strategies and planning decisions, boroughs should: 4) address the cumulative impact of high concentrations of licensed premises and their impact on anti-social behaviour, noise pollution, health

	and wellbeing and other impacts for residents, and seek ways to diversify and manage these areas

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
Mayor's Priority: Site Layout and Building Design	The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider: • potential to address any local air quality, noise disturbance,
Mayor's Priority: Noise	• Areas identified as having positive sound features or as being tranquil should be protected from noise. • Noise should be reduced at source, and then designed out of a scheme to reduce the need for mitigation measures.
2.7.18	Demolition material 2.7.18 Where the demolition of a building cannot be avoided developers should either reuse materials on-site or salvage appropriate materials to enable their reuse or recycling off-site. Where materials cannot be salvaged whole, and where aggregate is required on-site, this demolished material should be crushed on-site for reuse, with measures taken to minimise dust and noise. See the waste hierarchy below and the Mayor's SPG on The control of dust and emissions during construction and demolition.
4.4.2	In its Noise Action Plan: Agglomerations (January 2014), the Department for the Environment, Food and Rural Affairs (Defra) sets out guidance and procedures for local authorities for the identification, designation and protection of Environmental Noise Directive Quiet Areas. Boroughs can seek developers to implement the measures below in their schemes to protect occupiers and the general environment from noise, and more specifically to protect and enhance designated quiet areas.
4.4.3	Sources of Noise The main sources of noise and vibration in London are generated from: • road traffic; • air traffic; • railways; • industrial uses; • entertainment uses (such as bars and nightclubs); • outdoor events (such as music and sports); • playgrounds; • servicing areas for loading and unloading; • plant and mechanical equipment; and • construction sites.
4.4.4 – 4.4.10	Ways to mitigate noise emitted by developments 4.4.4 Where a proposed development will emit noise, developers should implement the most appropriate of the following measures. Boroughs should ensure the appropriate measures are incorporated into the design of new schemes to minimise future noise complaints. Engineering measures • reduce the noise emitted at its point of generation (e.g. by using quiet machines and/or quiet methods of working); • contain the noise generating equipment (e.g. by insulating buildings which

	house machinery and/or providing purpose-built barriers around the site); and • protect any surrounding noise-sensitive buildings (e.g. by improving sound insulation in these buildings and/ or screening them by purpose-built barriers). Careful Layout Design • ensure an adequate distance between source and noise-sensitive buildings or areas; and • screen with natural barriers, buildings, or non-critical rooms in the development. Administrative measures • limit the operating time of the source of noise; • restrict activities allowed on the site; and • specify an acceptable noise limit. Ways to minimise the impact of noise on development 4.4.5 The density and mix of uses in some areas contribute to London's vibrancy. However, this noise can be a nuisance to sensitive occupiers. New development containing sensitive uses that are to be located near a noise generating use, such as pubs and servicing areas, should be designed to limit the exposure of the new use to the existing noise source. 4.4.6 Where a proposed development is likely to be exposed to noise, developers should implement the most appropriate of the following measures, proportionate to the level of noise exposure and sensitivity of the proposed uses: Design measures • locate noise sensitive areas/rooms away from the parts of the site most exposed to noises; • create setbacks; • design the building so its shape and orientation reflect noise and protect the most sensitive uses; • stack similar rooms (such as kitchens and living rooms) above each other; • position non-residential uses closer to the noise source in mixed use developments; • design in lobbies, balconies, winter gardens and dual facades; and • carefully locate noise generating equipment for the building such as plant and services away from sensitive uses. Built fabric measures • insulate and soundproofing doors, walls, windows, floors and ceilings; • seal air gaps around windows; • triple glazing and other treated glazing measures; • use air locks; and • include architectural fins (where appropriate); Measures for landscaping and amenity areas • incorporate planting, soft landscaping, fencing/barriers and solid balconies to absorb or reflect sound; and • use surfaces that can reduce noise in highly trafficked areas - both pedestrian and vehicular. Detailed design considerations 4.4.7 The upper floors of tall buildings may experience noise from a wider area. Balconies or stepping back can help reduce the impact of noise on these floors. Developments should be designed so that they do not reflect noise, including through the careful choice of materials. Where the reflection of noise cannot be avoided, design measures should be used to minimise the reflection of noise towards existing sensitive uses .

	4.4.8 Building around or over a noise source can protect nearby uses, including quiet areas from this noise source. However, specialist design is needed to prevent both airborne and structure borne noise. 4.4.9 Proposals will be expected to include appropriate attenuation measures to alleviate or mitigate the impact of noise and vibrations to an acceptable level. Where appropriate, the cumulative impact of noise sources (for example, plant) should be considered. Mitigation measures will be secured by condition or s106 agreement, as appropriate. 4.4.10 Everyday domestic activities can also generate noise, e.g. communal entrances and roof terraces. Developers are to ensure sufficient sound insulation is provided between dwellings to prevent the transmission of noise between them, particularly in conversions where new partition walls are often deficient in terms of insulation. This is generally a matter for building control (Part E of the Building Regulations) and not planning. The Mayor's Housing SPG sets out some guidance for residential developments.

Sounder City - The Mayor's Ambient Noise Strategy (2004)

Policy/ paragraph reference	**Policy and paragraph text**
Policy 7	Transport for London will, and London boroughs and other organisations should, where practicable and cost-effective and having regard to other needs including increased public transport, develop and implement street space allocation, routeing, and related measures which contribute to reducing noise.
Policy 9	As resources allow, Transport for London will, and London boroughs and others should, investigate the potential benefits of noise barriers, other noise screening and acoustic modifications to highway structures, where source-related measures would not be effective. Account must be taken of pedestrian severance and security, vandalism, visual amenity, historic building and conservation issues, sight-lines and other road safety issues.
Policy 10	The Mayor will urge boroughs to consider including, in their Unitary Development Plans or other mechanisms, proposals to enhance the noise screening provided by roadside development, having regard to benefits for the wider area. Noise reduction in the wider neighbourhood should be taken into account by local planning authorities in assessing design in applications for development alongside or over roads. Decked or bridging development is most likely to be acceptable where roads are below adjacent ground levels.
Policy 14	As set out in the Mayor's Municipal Waste Management Strategy, waste authorities will be encouraged to minimise the noise impact of waste transportation, especially in respect of night time or early morning collections, by appropriate vehicle specifications, routeing and operating practices. This will, as far as possible, be integrated with work to promote cleaner vehicles, pursuant to the Mayor's Air Quality Strategy.
Policy 22	The Mayor will urge the Strategic Rail Authority and the rail industry, and will expect Transport for London, in partnership with local planning authorities and other stakeholders, and taking particular account of biodiversity, visual design, listed building and conservation area issues, to: ■ Examine the cost-effective scope for promoting development over suitable railway stations or tracks, especially those in cutting, taking account of potential net noise benefits; and ■ Seek design of new development near railways which screens or

	otherwise minimises noise.
Policy 23	The Mayor will urge boroughs to consider including, in their Unitary Development Plans, proposals to enhance the noise screening provided by development alongside railways, having regard to benefits for the wider area. Noise reduction in the wider neighbourhood should be taken into account as a benefit by local planning authorities in assessing design in applications for development alongside or over suitable railways. Decked or bridging development is most likely to be acceptable where railways are below adjacent ground levels.
Policy 57	The Mayor will, and Boroughs, the Port of London Authority, British Waterways, the Environment Agency and others with responsibilities for London's Blue Ribbon Network should, seek to minimise the adverse impacts of noise on, from, within or in the vicinity of water spaces, while promoting sustainable uses, including for passenger services, freight, leisure, and as eco-systems.
Policy 62	The Mayor will urge boroughs in their Unitary Development Plans, and the Port of London Authority, British Waterways, the Environment Agency and other agencies through their plans and management regimes, to include measures to protect and enhance soundscapes on or adjoining appropriate water spaces. This includes screening by buildings and development over noise sources, design of bridge parapets and other features, to reduce noise on and in the vicinity of appropriate water space.
Policy 64	The Mayor will urge boroughs, together with the Environment Agency where it has responsibility for noise control under Integrated Pollution Prevention and Control, to avoid, contain or minimise noise from industrial activity. Particular regard should be paid to the viability of established industrial and distribution uses when giving permission for noise-sensitive uses nearby. Planning briefs, conditions, agreements or other mechanisms should be used to protect incomers, including through contributions to noise reduction at source.
Policy 68	The Mayor will urge boroughs, in their Unitary Development Plans and other policies, such as on economic development, and in their transport spending programmes, to consider measures that will minimise the potential adverse impacts of industrial, distribution, waste management and aggregates sites on nearby noise-sensitive uses, such as through street improvement schemes. Transport for London will include consideration of noise issues in allocation of transport funding to boroughs.
Policy 72	The Mayor will urge boroughs and other social housing providers to, where practicable and cost-effective: ■ Demonstrate good acoustic design practice both in new housing, and in regeneration, refurbishment and maintenance, with particular regard to courtyard remodelling, replacement window programmes, and internal sound insulation; ■ Provide information on practical noise reduction in both existing and new housing for landlords and occupiers; ■ Integrate action on noise as far as possible with programmes to address fuel poverty.
Policy 73	In support of Policy 4A.14 of the London Plan, 2004, the Mayor will urge boroughs to include in their Unitary Development Plans, or other mechanisms, measures to minimise the adverse impacts of noise, having regard to Government guidance and to this strategy. Equality of access to quiet for social rented and affordable housing as for other housing should be sought in consideration of specific planning applications. Measures to protect housing, and noise-sensitive activities within schools, hospitals

	and other developments, would include: ■ Reducing noise at source, such as through traffic management; ■ Clustering, or limiting dispersal of, noise-generating activities; ■ Improving boundary design to screen noise; ■ Locating less noise-sensitive activities to screen or otherwise protect noise-sensitive uses; and ■ Promoting on-going maintenance and management, through conditions, licensing, agreements or other means.
Policy 76	The Mayor will urge boroughs, in their Unitary Development Plans, or through other mechanisms, to indicate how potential conflicts between night noise-generating and noise-sensitive uses, notably between late night entertainment and housing, will be resolved, in terms of land use planning, building design, and management. Civic engagement and participation need to be reflected in alcohol and entertainments licensing as they are in planning. Issues include: ■ Planning and design of late night eating, drinking and entertainment venues to prevent nuisance to established and prospective noise-sensitive uses, notably housing; ■ Where appropriate, considering designation of suitable areas for late night facilities, and where necessary considering the designation of Entertainment Management Zones (see glossary), in which planning, licensing, policing, transport and street management issues can be managed and co-ordinated; and ■ Planning and design of noise-sensitive uses, notably conversions to housing, to protect occupants from the reasonable operation of defined areas of late night activity, and established 24 hour facilities, especially where these are of importance to London's world city role.
Policy 78	The Mayor will urge London boroughs and others with responsibilities for open spaces and public realm management to consider the need for frameworks for managing soundscapes in open spaces and the wider public realm. Elements include noise mapping, measurement and attitude surveys, access to quiet, and exploring designation of Areas of Relative Tranquillity or Special Soundscape Interest.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
Principle E3	Proposals should: a. Minimise the generation of air pollution, both during and post construction, making new developments 'air quality neutral' or better; and b. Achieve EU established health-based standards and objectives for a number of air pollutants (NOx, PM10 and PM2.5).

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	**Alternative policy option**

EU11 12.103	No alternative policy options have been identified as alternatives would be to not have policies mitigating the impacts of noise and this would not be consistent with the NPPF or in general conformity with the London Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Noise: Requests were made to also consider vibration in the policy and to amend the policy title accordingly. Requests were also made for the policy to set clear standards for noise and to identify areas where there are likely to be high generators of noise and what must be done in these locations to mitigate this impact, and also identify more tranquil areas and identify what must be done to keep them tranquil.	Grand Union Alliance, Old Oak Park (DP9), the Hammersmith Society, 2 local residents	Change proposed. The title of the policy has been revised to include vibration and associated policy requirements have been inserted. The policy refers to the requirement for development to demonstrate that it complies with the most relevant and current building standards (BS) and that unacceptable impacts must be identified and appropriate mitigation measures secured. The policy also identifies that particular consideration to noise generators such as waste sites, cultural facilities, strategic roads or industrial uses.
Hammersmith and Fulham were supportive of the retention of the Powerday waste site but other stakeholders raised concerns about its continued presence because of dust, noise and air quality issues.	Hammersmith and Fulham, Grand Union Alliance, Harlesden Neighbourhood Forum, Midland Terrace Resident's Group, TITRA, 2 local residents	OPDC will continue to safeguard the Powerday waste site. The rationale for safeguarding Powerday (Old Oak Sidings) is outlined in the Waste Apportionment Study supporting evidence paper. It is required for safeguarding for apportionment to ensure that LBHF can meet its apportionment targets. This is a requirement of para 5.80 of the London Plan.

Regulation 19 (1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Poor quality construction and noise levels from Heathrow are incompatible with development	Local resident (Ron Thorpe)	No change proposed. OPDC cannot control the impacts from Heathrow but OPDC will work with developers, HS2, Heathrow and other projects to coordinate and minimise the impacts of major development on the area. Development will be expected to meet acceptable noise standards.
Lack of monitoring details	Friary Park Preservation Group	No change proposed. Monitoring will be included in the Authority Monitoring Report.
The Plan should require that no new development takes place in areas exceeding acceptable EU standards of maximum air and noise pollution, for example along Scrub Lane (Mitre Yard).	Wells House Road Residents, Joanna Betts, Marc and Caroline Francis, Lily Gray, Catherine Sookha	No change proposed. All new development will be required to demonstrate compliance with the most relevant and current building standards as set out in EU5, air quality policy EU4 and with Local Authority policies in their role as the responsible bodies for air quality.
Support policy but need to be clearer who controlling and monitoring bodies are	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No changed proposed. Reference to the appropriate controlling and monitoring bodies is made in the Local Plan where appropriate.
Policy not broad or proactive enough and should also include other emissions like odour, light, dust and risk from substances	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. These issues are dealt with at relevant points in the local Plan, but many of these points are addressed through the London Plan including in the Design and Construction SPG and environmental legislation and do not warrant repetition in OPDC's Local Plan. Light is dealt with in Policy D6 and environmental matters arising from construction activities (e.g. dust) are dealt with through Policy EU4 and T8.
Need to protect tranquil areas and improve the noise environment through the policy	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policy EU5 seeks to protect and enhance noise quality.

Regulation 19 (2) consultation

No issues raised

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations
Environmental Standards Study	Sensitive Uses and Noise • Noise and vibration sensitive developments should be appropriately located and protected through careful design measures. Noise generating developments will not be permitted where this would be liable to materially increase the noise experienced by occupants and users of existing or proposed noise sensitive uses in the vicinity. • Development and infrastructure proposals should be required to submit a noise and vibration assessment that demonstrates: o a. How design has minimised adverse noise impacts from both surrounding and internal uses on future occupants; and o b. Where development is proposed close to existing noise generators such as waste sites, cultural facilities, strategic roads or uses within Strategic Industrial Locations (SIL), how it will ensure the continued effective operation of those uses. • Development that exceeds recommended Noise and Vibration thresholds will not be permitted. • OPDC will only grant permission for plant or machinery if it can be operated without causing harm to amenity and does not exceed our noise thresholds. • OPDC will seek to minimise the impact on local amenity from the demolition and construction phases of development. Where these phases are likely to cause harm, conditions and planning obligations may be used to minimise the impact. Positive soundscapes and quiet areas • Positive soundscapes and 'quiet areas' will be protected and where possible enhanced.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
N/A	• **N/A**	• **N/A**

EU6: Waste

Legislation, Policy and Guidance Context

Waste Framework Directive (2008/98/EU)

Policy / paragraph reference	Policy and paragraph text
Article 1	This Directive lays down measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.
Article 4 (1)	The following waste hierarchy shall apply as a priority order in waste prevention and management legislation and policy: (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal.
Article 4 (2)	When applying the waste hierarchy referred to in paragraph 1, Member States shall take measures to encourage the options that deliver the best overall environmental outcome. This may require specific waste streams departing from the hierarchy where this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste. Member States shall ensure that the development of waste legislation and policy is a fully transparent process, observing existing national rules about the consultation and involvement of citizens and stakeholders. Member States shall take into account the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts, in accordance with Articles 1 and 13.
Article 13	Member States shall take the necessary measures to ensure that waste management is carried out without endangering human health, without harming the environment and, in particular: (a) without risk to water, air, soil, plants or animals; (b) without causing a nuisance through noise or odours; and (c) without adversely affecting the countryside or places of special interest.
Article 16 (1)	Member States shall take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of waste disposal installations and of installations for the recovery of mixed municipal waste collected from private households, including where such collection also covers such waste from other producers, taking into account best available techniques. By way of derogation from Regulation (EC) No 1013/2006, Member States may, in order to protect their network, limit incoming shipments of waste destined to incinerators that are classified as recovery, where it has been established that such shipments would result in national waste having to be disposed of or waste having to be treated in a way that is not consistent with their waste management plans. Member States shall notify the Commission of any such decision. Member States may also limit outgoing shipments of waste on environmental grounds as set out in Regulation (EC) No 1013/2006.

Article 16 (2)	The network shall be designed to enable the Community as a whole to become self-sufficient in waste disposal as well as in the recovery of waste referred to in paragraph 1, and to enable Member States to move towards that aim individually, taking into account geographical circumstances or the need for specialised installations for certain types of waste.
Article 16 (3)	The network shall enable waste to be disposed of or waste referred to in paragraph 1 to be recovered in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health.
Article 16 (4)	The principles of proximity and self-sufficiency shall not mean that each Member State has to possess the full range of final recovery facilities within that Member State.
Article 28 (1)	Member States shall ensure that their competent authorities establish, in accordance with Articles 1, 4, 13 and 16, one or more waste management plans. Those plans shall, alone or in combination, cover the entire geographical territory of the Member State concerned.
Article 28 (2)	The waste management plans shall set out an analysis of the current waste management situation in the geographical entity concerned, as well as the measures to be taken to improve environmentally sound preparing for re-use, recycling, recovery and disposal of waste and an evaluation of how the plan will support the implementation of the objectives and provisions of this Directive.
Article 28 (3)	The waste management plans shall contain, as appropriate and taking into account the geographical level and coverage of the planning area, at least the following: (a) the type, quantity and source of waste generated within the territory, the waste likely to be shipped from or to the national territory, and an evaluation of the development of waste streams in the future; (b) existing waste collection schemes and major disposal and recovery installations, including any special arrangements for waste oils, hazardous waste or waste streams addressed by specific Community legislation; (c) an assessment of the need for new collection schemes, the closure of existing waste installations, additional waste installation infrastructure in accordance with Article 16, and, if necessary, the investments related thereto; (d) sufficient information on the location criteria for site identification and on the capacity of future disposal or major recovery installations, if necessary; (e) general waste management policies, including planned waste management technologies and methods, or policies for waste posing specific management problems.
Article 28 (4)	The waste management plan may contain, taking into account the geographical level and coverage of the planning area, the following: (a) organisational aspects related to waste management including a description of the allocation of responsibilities between public and private actors carrying out the waste management; (b) an evaluation of the usefulness and suitability of the use of economic and other instruments in tackling various waste problems, taking into account the need to maintain the smooth functioning of the internal market; (c) the use of awareness campaigns and information provision directed at the general public or at a specific set of consumers; (d) historical contaminated waste disposal sites and measures for their rehabilitation.

Article 28 (5)	Waste management plans shall conform to the waste planning requirements laid down in Article 14 of Directive 94/62/EC and the strategy for the implementation of the reduction of biodegradable waste going to landfills, referred to in Article 5 of Directive 1999/31/EC.

Waste (England and Wales) Regulation (2011)

Articles in the WFD are transposed in the following Regulations:

Policy / paragraph reference	Summary of transposition of Waste Framework Directive
Regulation 18	A planning authority must have regard to the following provisions of the Waste Framework Directive when exercising its planning functions to the extent that those functions relate to waste management— (a)Article 13; (b)the first paragraph of Article 16(1), ignoring the words "in cooperation with other Member States where this is necessary or advisable" and "taking into account best available techniques"; (c)Article 16(2) and (3).

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
143	In preparing Local Plans, local planning authorities should: so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously;
156	Local planning authorities should set out the strategic priorities for the area in the Local Plan. This should include strategic policies to deliver: • the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
162	Local planning authorities should work with other authorities and providers to: • assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands;

National Planning Policy for Waste (2014) (NPPW)

Policy / paragraph reference	Policy and paragraph text
Paragraph 2	In preparing their Local Plans, waste planning authorities should, to the extent appropriate to their responsibilities: • ensure that the planned provision of new capacity and its spatial distribution is based on robust analysis of best available data and information, and an appraisal of options. Spurious precision should be avoided; • work jointly and collaboratively with other planning authorities to collect and share data and information on waste arisings, and take account of: (i) waste arisings across neighbouring waste planning authority areas; (ii) any waste management requirement identified nationally, including the • Government's latest advice on forecasts of waste arisings and the proportion of waste that can be recycled; and • ensure that the need for waste management facilities is considered alongside other spatial planning concerns, recognising the positive contribution that waste management can bring to the development of sustainable communities.
Paragraph 3	Waste planning authorities should prepare Local Plans which identify sufficient opportunities to meet the identified needs of their area for the management of waste streams. In preparing Local Plans, waste planning authorities should: • undertake early and meaningful engagement with local communities so that plans, as far as possible, reflect a collective vision and set of agreed priorities when planning for sustainable waste management, recognising that proposals for waste management facilities such as incinerators can be controversial; • drive waste management up the waste hierarchy (Appendix A), recognising the need for a mix of types and scale of facilities, and that adequate provision must be made for waste disposal; • in particular, identify the tonnages and percentages of municipal, and commercial and industrial, waste requiring different types of management in their area over the period of the plan (In London, waste planning authorities should have regard to their apportionments set out in the London Plan when preparing their plans); • consider the need for additional waste management capacity of more than local significance and reflect any requirement for waste management facilities identified nationally; • take into account any need for waste management, including for disposal of the residues from treated wastes, arising in more than one waste planning authority area but where only a limited number of facilities would be required; • work collaboratively in groups with other waste planning authorities, and in twotier areas with district authorities, through the statutory duty to cooperate, to provide a suitable network of facilities to deliver sustainable waste management; • consider the extent to which the capacity of existing operational facilities would satisfy any identified need.

Paragraph 4	Waste planning authorities should identify, in their Local Plans, sites and/or areas for new or enhanced waste management facilities in appropriate locations. In preparing their plans, waste planning authorities should: • identify the broad type or types of waste management facility that would be appropriately located on the allocated site or in the allocated area in line with the waste hierarchy, taking care to avoid stifling innovation (Appendix A); • plan for the disposal of waste and the recovery of mixed municipal waste in line with the proximity principle, recognising that new facilities will need to serve catchment areas large enough to secure the economic viability of the plant; • consider opportunities for on-site management of waste where it arises; • consider a broad range of locations including industrial sites, looking for opportunities to co-locate waste management facilities together and with complementary activities. Where a low carbon energy recovery facility is considered as an appropriate type of development, waste planning authorities should consider the suitable siting of such facilities to enable the utilisation of the heat produced as an energy source in close proximity to suitable potential heat customers; • give priority to the re-use of previously-developed land, sites identified for employment uses, and redundant agricultural and forestry buildings and their curtilages.
Paragraph 5	Waste planning authorities should assess the suitability of sites and/or areas for new or enhanced waste management facilities against each of the following criteria: • the extent to which the site or area will support the other policies set out in this document; • physical and environmental constraints on development, including existing and proposed neighbouring land uses, and having regard to the factors in Appendix B to the appropriate level of detail needed to prepare the Local Plan; • the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, seeking when practicable and beneficial to use modes other than road transport; and • the cumulative impact of existing and proposed waste disposal facilities on the well-being of the local community, including any significant adverse impacts on environmental quality, social cohesion and inclusion or economic potential.
Paragraph 6	Green Belts have special protection in respect to development. In preparing Local Plans, waste planning authorities, including by working collaboratively with other 6 planning authorities, should first look for suitable sites and areas outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development. Local planning authorities should recognise the particular locational needs of some types of waste management facilities when preparing their Local Plan.

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	Policy and paragraph text
Waste	
Title: What is the role of local planning authorities in meeting the requirements of the European Union Waste Framework Directive? **Paragraph:** 004 **Reference ID:** 28-004-20141016 **Revision Date:** 16 10 2014	Waste planning authorities play a role in implementing the following Articles of the EU Waste Framework Directive (2008/98/EC) in England: • Article 4: Waste Hierarchy • Article 13: Protection of human health and the environment • Article 16: Principles of proximity and self-sufficiency • Article 28: Waste Management Plans • Article 34: Periodic Inspections In addition, all planning authorities have a role in implementing Articles 4 and 13. Articles 13, 16 and 34 are implemented in Part 6 of the Waste (England and Wales) Regulations 2011. Implementation of the remaining Articles relies on local planning authorities discharging specific statutory responsibilities under the planning system. [See a more detailed breakdown]](#Annex-1-Summary-of-Waste-Framework-Directive).
Title: How can local planning authorities protect human health and the environment? **Paragraph:** 005 **Reference ID:** 28-005-20141016 **Revision Date:** 16 10 2014	Local planning authorities can ensure that waste is handled in a manner which protects human health and the environment through testing the suitability of proposed sites, both in developing their Local Plans and in considering individual planning applications, against the policies in paragraphs 4 to 7 and the factors in Appendix B of National planning policy for waste. Other ways in which they can deal with this include: • putting in place suitable planning conditions, and adequate enforcement and monitoring • working closely with Environmental Health colleagues • consultation with Public Health England and the Environment Agency (which is mandatory in certain cases) for advice on public health matters and pollution control • ensuring land raising or landfill sites are restored to beneficial after-uses (eg agriculture, biodiversity, forestry, amenity) at the earliest opportunity and to high environmental standards.
Title: What is the obligation on waste planning authorities towards implementing the proximity principle? **Paragraph:** 006 **Reference ID:** 28-006-20141016 **Revision Date:** 16 10 2014	The principles of self-sufficiency and proximity (commonly referred to as the 'proximity principle') are set out in Article 16 of the Waste Framework Directive, Local planning authorities are required, under regulation 18 of the 2011 Regulations which transposed the Directive, to have regard to these requirements when exercising their planning functions relating to waste management.

Title: Do the self-sufficiency and proximity principles require each waste planning authority to manage all of its own waste? **Paragraph:** 007 **Reference ID:** 28-007-20141016 **Revision Date:** 16 10 2014	Though this should be the aim, there is no expectation that each local planning authority should deal solely with its own waste to meet the requirements of the self-sufficiency and proximity principles. Nor does the proximity principle require using the absolute closest facility to the exclusion of all other considerations. There are clearly some wastes which are produced in small quantities for which it would be uneconomic to have a facility in each local authority. Furthermore, there could also be significant economies of scale for local authorities working together to assist with the development of a network of waste management facilities to enable waste to be handled effectively. The ability to source waste from a range of locations/organisations helps ensure existing capacity is used effectively and efficiently, and importantly helps maintain local flexibility to increase recycling without resulting in local overcapacity.
Title: How is the Waste Hierarchy delivered through Local Plans and in planning decisions **Paragraph:** 009 **Reference ID:** 28-009-20141016 **Revision Date:** 16 10 2014	Driving waste up the Waste Hierarchy is an integral part of the National waste management plan for England and national planning policy for waste. All local planning authorities must have regard to the Plan and national policy in preparing their Local Plans. National waste planning policy is capable of being a material consideration in decisions on planning applications for waste management facilities.
Title: How can "non-waste" planning authorities deal with the Waste Hierarchy? **Paragraph:** 010 **Reference ID:** 28-010-20141016 **Revision Date:** 16 10 2014	While such authorities may not have the planning functions in respect of the preparation of Local Plans covering waste, or dealing directly with waste planning applications, they must have regard to national planning policy for waste and are expected to help deliver the Waste Hierarchy. This might include: • working constructively with waste planning authorities to identify and protect those sites needed for waste management facilities. Local planning authorities should consider the need for waste management alongside other spatial planning objectives • integrating local waste management opportunities in proposed new development • considering, where relevant, the likely impact of proposed, non-waste related development on existing waste management sites and on sites and areas allocated for waste management • promoting sound management of waste from any proposed development, such as encouraging on-site management of waste where this is appropriate, or including a planning condition to encourage or require the developer to set out how waste arising from the development is to be dealt with • including a planning condition promoting sustainable design of any proposed development through the use of recycled

	products, recovery of on-site material and the provision of facilities for the storage and regular collection of waste • ensuring that their collections of household and similar waste are organised so as to help towards achieving the higher levels of the waste hierarchy.
Title: What should Local Plans deliver? **Paragraph:** 011 **Reference ID:** 28-011-20141016 **Revision Date:** 16 10 2014	The Local Plan relating to waste should identify sufficient opportunities to meet the identified needs of an area for the management of waste, aiming to drive waste management up the Waste Hierarchy. It should ensure that suitable sites and areas for the provision of waste management facilities are identified in appropriate locations.
Title: How should waste planning authorities involve local communities? **Paragraph:** 012 **Reference ID:** 28-012-20141016 **Revision date:** 16 10 2014	Local Plans are the key to delivering sustainable development that reflects the vision and aspirations of local communities. It is important that waste planning authorities engage and collaborate with local communities in an early and meaningful way when identifying options for managing waste. This is particularly the case when considering proposals for waste management facilities such as incinerators which can be locally controversial. To be effective, engagement should be proactive to ensure that local communities are able to understand the range of options that are available and their implications.
Title: What types of wastes should waste planning authorities plan for? **Paragraph:** 013 **Reference ID:** 28-013-20141016 **Revision date:** 16 10 2014	Waste planning authorities should plan for the sustainable management of waste including: • Municipal/household • Commercial/industrial • Construction/demolition • Low Level Radioactive • Agricultural • Hazardous • Waste water
Title: What must Local Plans on waste include to meet the requirements of the Waste Framework Directive? **Paragraph:** 014 **Reference ID:**	Regulations 7 and 8 and Schedule 1 to the 2011 Regulations set out what is necessary to meet the requirements of Article 28 of the Directive. Up-to-date Local Plans dealing with waste are a necessary part of the implementation of this Article of the Directive. The key issues which waste planning authorities must include in their Local Plans to ensure compliance with the Waste Framework Directive are: • Details of existing major disposal and recovery installations

28-014-20141016 **Revision Date:** 16 10 2014	• An assessment of the need for the closure of existing waste management facilities and the need for additional waste installation infrastructure • Sufficient information on the location criteria for site identification and on the capacity of future disposal or major recovery installations.
Title: How should the duty to cooperate apply to waste management? **Paragraph:** 010 **Reference ID:** 28-010-20141016 **Revision Date:** 16 10 2014	Waste is a strategic issue which can be addressed effectively through close co-operation between waste planning authorities and other local planning authorities and public bodies to ensure a suitable and sustainable network of waste management facilities is in place. There is no definitive list of actions that constitute effective cooperation under the duty. However, it may include: • gathering, evaluating and ensuring consistency of data and information required to prepare Local Plans. This may include joint commissioning of studies or the joint preparation of an evidence base • engaging actively in dialogue, particularly on those types of wastes or waste facilities that will impact most on neighbouring authorities • active engagement, where necessary, with planning authorities wider than just those who are their more immediate neighbours, particularly if dealing with waste streams for which there is a need for few facilities • jointly monitoring waste arisings and capacity.
Title: How should the duty to cooperate apply between waste and district planning authorities? **Paragraph:** 016 **Reference ID:** 28-016-20141016 **Revision Date:** 16 10 2014	By the nature of the activity, waste planning policy requires a strategic, cross-boundary approach to ensure that waste is effectively managed and facilities are properly located. Integrated working between county and district planning authorities is critical to the preparation of Local Plans. While the duty to cooperate is not a duty to agree, waste planning authorities should make every effort to secure the necessary cooperation on waste matters.
Title: Does this apply to identifying suitable sites and areas for waste management facilities? **Paragraph:** 017 **Reference ID:** 28-017-20141016	The duty to cooperate will be particularly important where waste planning authorities are unable to identify sufficient, suitable, opportunities for waste management facilities – for instance, because of a lack of physical capacity or because to do so would cause significant harm to the principles and policies in the National Planning Policy Framework, including the special protection given to the Green Belt. In such circumstances, joint working can ensure sufficient opportunities outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development. The search for suitable opportunities should be in line with the waste management hierarchy and, having

Revision Date: 16 10 2014	regard to the self-sufficiency and proximity principles, any planned review of Green Belt boundaries. Effective cooperation will also be important in ensuring the planned provision of new capacity and its spatial distribution is based on robust analysis of waste management needs including for specific waste streams. Inspectors will recommend that the Local Plan is not adopted if the duty to cooperate has not been complied with and the examination will not proceed any further.
Title: How should local planning authorities integrate the need for waste management with other spatial concerns in the preparation of Local Plans? **Paragraph:** 018 **Reference ID:** 28-018-20141016[**Revision Date:** 16 10 2014	Opportunities for land to be utilised for waste management should be built into the preparatory work for Local Plans, to the level appropriate to the local planning authorities planning responsibilities. For example: • suitable previously-developed land, including industrial land, provides opportunities for new waste facilities and priority should be given to reuse of these sites. It is important for waste to be considered alongside other land uses when looking at development opportunities • as reviews of employment land are undertaken, it is important to build in the needs of waste management before releasing land for other development or when considering areas where major regeneration is proposed • the integration of local waste management opportunities in new development should be integral to promoting good urban design • facilitating the co-location of waste sites with end users of waste outputs such as users of fuel, low carbon energy/heat, recyclates and soils.
Title: Can Local Plans prescribe specific technologies? **Paragraph:** 019 **Reference ID:** 28-019-20141016 **Revision Date:** 16 10 2014	Local plans should not generally prescribe the waste management techniques or technologies that will be used to deal with specific waste streams in the area. Rather, the Plan should identify the type or types of waste management facility that would be appropriately located on the allocated site or in the allocated area. The government tries not to direct towards one waste technology above any others, when there may be a number of technologies, both existing and developing, that might deliver the same favourable outcome. Circumstances when it may be more appropriate to prescribe a specific technology include: • for those sites that are allocated for facilities larger than just local facilities; • for any facilities to deal with municipal waste where a clear service development strategy is required; • when the site is suitable for only one particular type of waste management facility.
Title: Why are waste targets set out for London boroughs in the London Plan? **Paragraph:** 042	Apportionments of waste to London boroughs set out in the London Plan provide a benchmark for the preparation of Local Plans and a basis for Annual Monitoring Reports. Waste planning authorities should have regard to the apportionments set out in the London Plan when developing their policies. The Local Waste Plan will need to be in general conformity with the London Plan.

Reference ID: 28-042-20141016 **Revision Date:** 16 10 2014	
Title: When can unallocated sites be used? **Paragraph:** 046 **Reference ID:** 28-010-20141016 **Revision Date:** 16 10 2014	There may be significant changes in, for example, technological impact and land ownership that occur over a short period of time and provide opportunities that were not anticipated. In the case of waste disposal facilities, applicants should be able to demonstrate that the envisaged facility will not undermine the waste planning strategy through prejudicing movement up the Waste Hierarchy. If the proposal is consistent with an up to date Local Plan, there is no need to demonstrate 'need'. Where monitoring indicates that a persistent, and significant gap, exists between what has been planned for and what is occurring in reality, the waste planning authority may consider addressing this through review of the Local Plan.
Title: Should existing waste facilities be expanded/extended? **Paragraph:** 047 **Reference ID:** 28-047-20141016 **Revision Date:** 16 10 2014	The waste planning authority should not assume that because a particular area has hosted, or hosts, waste disposal facilities, that it is appropriate to add to these or extend their life. It is important to consider the cumulative effect of previous waste disposal facilities on a community's wellbeing. Impacts on environmental quality, social cohesion and inclusion and economic potential may all be relevant. Engagement with the local communities affected by previous waste disposal decisions will help in these considerations.
Title: Should significant developments include a waste audit? **Paragraph:** 049 **Reference ID:** 28-049-20141016 **Revision Date:** 16 10 2014	For proposals that are likely to generate significant volumes of waste through the development or operational phases it will be useful to include a waste audit as part of the application. This audit should demonstrate that in both construction and operational phases of a proposed development, waste will be minimised as far as possible and that such waste as is generated will be managed in an appropriate manner in accordance with the Waste Hierarchy. In particular, the waste audit could cover the following: • the anticipated nature and volumes of waste that the development will generate • where appropriate, the steps to be taken to ensure the maximum amount of waste arising from development on previously developed land is incorporated within the new development • the steps to be taken to ensure effective segregation of wastes at source including, as appropriate, the provision of waste sorting, storage, recovery and recycling facilities • any other steps to be taken to manage the waste that cannot be incorporated within the new development or that arises once development is complete. Before granting planning permission, the local planning authority will need to be satisfied that the impacts of non-waste development on

	existing waste management facilities are acceptable and do not prejudice the implementation of the Waste Hierarchy. Where appropriate, the local planning authority may require additional waste management measures in order to facilitate the movement of waste management up the Hierarchy. In addition, the potential impacts from noise, vibration, artificial light, dust and odour must be properly considered for any proposed site.
Renewable and Low Carbon Energy	
Title: How can decentralised energy opportunities be identified? **Paragraph:** 009 **Reference ID:** 5-009-20140306 **Revision Date:** 06 03 2014	There is an important contribution to be made by planning that is independent of the contribution from other regimes such as building regulations. For example, getting the right land uses in the right place can underpin the success of a district heating scheme. Similarly, planning can influence opportunities for recovering and using waste heat from industrial installations. Planning can provide opportunities for, and encourage energy development which will produce waste heat, to be located close to existing or potential users of the heat. Planning can also help provide the new customers for the heat by encouraging development which could make use of the heat. Information on local heat demand is published by the Department of Energy and Climate Change to assist planners and developers in identifying locations with opportunities for heat supply. See the national heat map and the UK combined heat and power (CHP) development map. This information will be supplemented in future by further work, including detailed mapping, on the potential for combined heat and power and district heating and cooling. View the National Planning Policy Framework definition of 'decentralised energy'.
Hazardous Substances	
Title: Exceptions from hazardous substances consent **Paragraph:** 029 **Reference ID:** 39-029-20170728 **Revision Date:** 28 07 2017	Waste landfill sites Hazardous substances at waste landfill sites are usually exempt from the consent procedure. There may be controls on substances in the waste management licence issued by the Environment Agency. In certain cases, for example, in relation to some sites used for the storage of metallic mercury, consent will be required. The exceptions are set out in paragraph 7, Schedule 2 of the Planning (Hazardous Substances) Regulations 2015.

National Waste Management Plan

Policy / paragraph reference	Policy and paragraph text
The Waste Hierarchy	In England, the waste hierarchy is both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011. The hierarchy gives top priority to waste prevention, followed by preparing for reuse, then recycling, other types of recovery (including energy recovery), and last of all disposal (e.g. landfill).

	The dividends of applying the waste hierarchy will not just be environmental. We can save money by making products with fewer natural resources, and we can reduce the costs of waste treatment and disposal. The 2011 Regulations require everyone involved in waste management and waste producers in England to take, on the transfer of waste, all reasonable measures to apply the waste hierarchy except where, for specific waste streams, departing from the hierarchy is justified by lifecycle thinking on the overall effects of generating and managing the waste. Regulators under the Environmental Permitting (England and Wales) Regulations 201013 must exercise functions (such as granting environmental permits) for the purpose of ensuring that the waste hierarchy is applied to the generation of waste by a waste operation. To aid people to apply the waste hierarchy, Defra has produced guidance on its application. Prevention The Government‘s aim is to reduce the amount of waste produced across the economy whilst supporting economic growth. We measure the total amount of raw materials used and waste produced alongside the commercial, industrial and household waste produced per unit of Gross Value Added (GVA). This shows how quickly we are moving along a pathway to a zero waste economy. Although information on waste arisings is available for England, information on use of materials is currently only available at a UK level. The most current statistics (2010) providing this information can be found at: https://www.gov.uk/government/organisations/department-for-environment-food-ruralaffairs/series/waste-and-recycling-statistics We have developed a Waste Prevention Programme for England15 to continue the progress towards a zero waste economy by setting out detailed actions to: • encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services, • encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, to use products for longer, repair broken items, and enable reuse of items by others, • help businesses recognise and act upon potential savings through better resource efficiency and preventing waste, to realise opportunities for growth; and • support action by central and local government, businesses and civil society to capitalise on these opportunities. Preparing for Re-use Government is currently developing re-use and repair policies alongside the development of the waste prevention programme. The Government’s Call for Evidence for the Waste Prevention

	Programme provided information on current reuse, remanufacture and repair activities in England. Recycling The most recent statistics show that the rate of recycling for waste from households in England continues to increase, with our current policy measures, towards the EU target of recycling 50% of household waste by 2020. The Government keeps progress towards the targets under review by monitoring actual recycling rates and by modelling future recycling. We are already exceeding the 70% target for recovering construction and demolition waste. Commercial and industrial waste reached a recycling rate of 52% in 2010. This Plan sets out a number of other initiatives that are under way to boost recycling. Other Recovery The Government supports anaerobic digestion (AD) because of its value in dealing with organic waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions associated with its disposal to landfill. AD also recovers energy and produces valuable bio-fertilisers. The Government is committed to increasing the energy from waste produced through AD and has produced, working with industry, a Strategy and Action Plan to tackle the barriers to AD. Two progress reports on the Action Plan have been published. The Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled - to deliver environmental benefits, reduce carbon impact and provide economic opportunities. Our aim is to get the most energy out of waste, not to get the most waste into energy recovery. Defra has produced a guide to energy from waste to provide factual information to all of those interested in the development of such facilities including developers, local authorities and local communities. It is for the Environment Agency to determine on a case by case basis whether an application for an environmental permit constitutes a waste recovery or a disposal operation. Inert waste can and should be recovered or recycled whenever possible. However, the disposal of inert waste in or on land i.e. landfill, remains a valid way of restoring quarries and worn out mineral workings where this is a planning requirement. Disposal Landfill or incineration without energy recovery should usually be the last resort for waste, particularly biodegradable waste. (Incineration may be classed as recovery or disposal depending on the circumstances. Our Energy from Waste guide provides further analysis of this issue). The landfill tax is the key driver to divert waste from landfill to ensure that we meet EU targets under the Landfill Directive. That does not mean that all wastes will be diverted from landfill by 2020. There are some wastes for which landfill remains the best or least worst option.

	The Waste Review 2011 suggested that such materials are likely to include: • some hazardous wastes – such as asbestos; • certain process residues, such as pre-treated industrial wastes from which no further resources can be recovered; and • waste for which the alternatives to landfill are not justified on cost or environmental and resource efficiency grounds.
Assessment of need for new collection schemes and infrastructure/closure of waste infrastructure	Infrastructure The Government's ambitions for waste highlight the importance of putting in place the right waste management infrastructure at the right time and in the right location. We aim to have the appropriate waste reprocessing and treatment infrastructure constructed and operated effectively at all levels of the waste hierarchy to enable the most efficient treatment of our waste and resources. In line with the Government's approach to localism, we continue to support local authorities to facilitate the provision of necessary waste infrastructure, recognising that local communities should benefit from hosting waste infrastructure and be involved from an early stage in planning for such infrastructure. The Environment Agency regulates the closure of permitted waste operations through surrender notifications and applications. Operators of some regulated facilities may simply notify the Environment Agency but others must make an application to the regulator as required under regulations 24 and 25 of the Environmental Permitting (England and Wales) Regulations 2010. It is also possible to surrender part of an Environmental Permit, for example, if the operator is reducing the extent of a permitted site. Where there is a partial surrender, the regulator may need to vary the permit conditions to reflect this. Specific provisions apply to the closure of landfill sites37. Closed landfill sites fall into three categories: (i) sites that closed after 16 July 2001 and are regulated in accordance with the requirements of the Landfill Directive, (ii) sites that are permitted but closed before 16 July 2001; and (iii) historic closed landfills. Proximity principle The revised Waste Framework Directive establishes the principle of 'proximity'. This is within the context of the requirement on Member States to establish an integrated and adequate network of waste disposal installations for recovery of mixed municipal waste collected from private households. The requirement includes where such collection also covers waste from other producers. The network must enable waste to be disposed of, or be recovered, in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health. The Directive also requires that the network shall be designed in such a way as to enable Member States to move towards the aim of self-sufficiency in waste disposal and the recovery of waste. However, Member States must take into account geographical

	circumstances or the need for specialised installations for certain types of waste and the Directive makes it clear that each Member State does not have to possess the full range of final recovery facilities. This principle must be applied when decisions are taken on the location of appropriate waste facilities. Waste Planning Planning Policy Statement 10 "Planning for Sustainable Waste Management"38 sets out current planning policy to be taken into account by waste planning authorities. The policy should be read in conjunction with the National Planning Policy Framework. National planning policy for waste aims to help achieve sustainable waste management by securing adequate provision of new waste management facilities of the right type, in the right place and at the right time. Under the national planning policy approach, waste planning authorities should identify in their local waste plans sites and areas suitable for new or enhanced facilities for the waste management needs of their area. In deciding which sites and areas to identify for such facilities, waste planning authorities should assess their suitability against the criteria set out in the policy. This includes the physical and environmental constraints on development, existing and proposed neighbouring land uses, and any significant adverse impacts on the quality of the local environment. The Government has consulted on an update of this policy, which maintains the core principles contained in Planning Policy Statement 10 but adopts a more streamlined approach in line with the principles adopted for preparing other planning policy now contained in the National Planning Policy Framework. The proposed updated national planning policy for waste recognises the importance of close co-operation between waste planning authorities, emphasising the requirements of the duty to co-operate in section 110 of the Localism Act 2011. Increasingly local authorities are working together in partnerships to deliver full and efficient waste services. All local planning authorities should have regard to both the waste management plan for England and the national waste planning policy when discharging their responsibilities to the extent that they are appropriate to waste management. Waste planning authorities remain responsible for developing local authority waste plans as part of their wider strategic planning responsibilities, in support of the Waste Management Plan for England. Location The Environment Agency's Infrastructure Report40 is a compilation of regional reports providing key statistics on waste management infrastructure (numbers, locations and capacities of operational waste management sites including major disposal and recovery installations). They also cover the types and quantities of all waste (household, commercial and industrial, including construction and demolition) managed in the area. The reports include an analysis of waste flows (imports to and exports from the area).

	Need for additional infrastructure The Waste Infrastructure Delivery Programme (WIDP) was set up in 2006 to address a potential shortfall in residual waste treatment capacity needed in order for England to meet its share of the UK's Landfill Directive targets. WIDP has provided local authorities, as the main bodies responsible for planning and procuring that capacity, with high quality, comprehensive support, including financial help through Private Finance Initiatives (PFI) credits (now called Waste Infrastructure Credits and grants (WICs)). The Government has allocated a total of £3.5 billion in grant funding to 28 projects. Up to date information on this programme is available at:- https://www.gov.uk/government/policies/reducing-and-managing-waste/supportingpages/waste-infrastructure-delivery-programme Further information on waste installations can be found on page 72 of the Waste Review in the chapter on Infrastructure and Planning. As part of monitoring progress towards meeting EU Landfill Directive targets - we estimate that we will have sufficient residual waste treatment infrastructure, on reasonable assumptions, to meet our Directive obligations. As such, there are no plans to provide further WICs.42 However, the Government believes that there is a case for other types of support for waste infrastructure to help deliver our revised Waste Framework Directive and other EU obligations and our own priorities for resource efficiency. The Government has, therefore, introduced other mechanisms to stimulate investment in waste infrastructure, principally through the Green Investment Bank and the Infrastructure Guarantee Scheme. Further information can be found in the National Infrastructure Plan. Collection infrastructure Local authorities in England are under a legal obligation under the Environmental Protection Act 1990 to provide waste collections to households. From 2003, they have also been under a duty to collect at least two types of recyclable waste separately where they have a duty to collect household waste. From 1 January 2015, local authorities will need to collect waste paper, metal, plastic or glass by way of separate collection where this is necessary to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Waste Framework Directive and to facilitate or improve recovery; and where such separate collection is technically, environmentally and economically practicable. As noted in the section on measures to promote high quality recycling, the Government has also been working with local authorities to increase the frequency and quality of waste collections, make it easier to recycle and to encourage reward schemes to increase recycling. In November 2012, the Department for Communities and Local Government made available £250m under its Weekly Collections Support Scheme. The Department is providing funding for 82 councils committed to retaining or reinstating weekly collections of residual waste for residents. In nearly all cases, successful bids propose delivering enhanced recycling services, making it easier for residents to recycle. All successful bids will deliver environmental benefits. The Department

	for Communities and Local Government will continue to encourage weekly collections of residual waste in the coming years. Within England, local authorities assess the need for any changes to collection arrangements that best fit their local circumstances and meet the legal obligations to collect waste set out above. At national level, the Waste and Resources Action Programme assesses the performance of local authority collection arrangements in terms of yields of residual waste and of dry recyclables47. This work will help to inform future decisions on collection schemes that are needed to help the UK meet its obligations under the Waste Framework Directive. Technologies for managing residual waste The 2011 Waste Review set out the Government's support towards efficient energy recovery from residual waste which can deliver environmental benefits, reduce carbon impacts and provide economic opportunities. The Government aims to obtain the most energy from waste, not to get the most waste into energy recovery. To achieve this Government will ensure the right incentives are in place to develop this industry. The Government does not express a preference for one technology over another, since local circumstances differ. Any given technology is more beneficial if both heat and electricity can be recovered. Particular attention should therefore be given to the location of the plant to maximise opportunities for heat use. Waste management technologies are still being devised to treat society's residual waste which cannot sustainably be recycled. While some technologies such as large-scale incineration are well established, others such as gasification are less developed or still at the pre-deployment stage. Those making investment decisions should consider the information in the public domain, such as the Government's guidance on energy from waste.

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 4. London's Economy	
Policy 4.4: Managing industrial land and premises	LDF preparation B LDFs should demonstrate how the borough stock of industrial land and premises in strategic industrial locations (Policy 2.17), locally significant industrial sites and other industrial sites will be planned and managed in local circumstances in line with this strategic policy and the location strategy in Chapter 2, taking account of: • d the need for strategic and local provision for waste management, transport facilities (including inter-modal freight interchanges), logistics and wholesale markets within London and the wider city region; and to accommodate demand for workspace for small and medium sized enterprises and for new and emerging industrial sectors including the need to identify sufficient capacity for renewable energy generation
Chapter 5. London's Response to Climate Change	

Policy 5.3 Sustainable Design and Construction	C Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • e minimising the generation of waste and maximising reuse or recycling
Policy 5.5 Decentralised Energy Networks	Within LDFs boroughs should develop policies and proposals to identify and establish decentralised energy network opportunities. Boroughs may choose to develop this as a supplementary planning document and work jointly with neighbouring boroughs to realise wider decentralised energy network opportunities. As a minimum boroughs should: • c develop energy master plans for specific decentralised energy opportunities which identify: o possible opportunities to utilise energy from waste
Policy 5.8: Innovative Energy Technologies	Strategic A The Mayor supports and encourages the more widespread use of innovative energy technologies to reduce use of fossil fuels and carbon dioxide emissions. In particular the Mayor will seek to work with boroughs and other partners in this respect, for example by stimulating: • a the uptake of electric and hydrogen fuel cell vehicles • b hydrogen supply and distribution infrastructure • c the uptake of advanced conversion technologies such as anaerobic digestion, gasification and pyrolysis for the treatment of waste. LDF preparation B Within LDFs boroughs may wish to develop more detailed policies and proposals to support the use of alternative energy technologies (particularly in infrastructure and masterplanning opportunities).
Policy 5.16 Waste Net Self-Sufficiency	A The Mayor will work with London boroughs and waste authorities, the London Waste and Recycling Board (LWaRB), the Environment Agency, the private sector, voluntary and community sector groups, and neighbouring regions and authorities to: • a manage as much of London's waste within London as practicable, working towards managing the equivalent of 100% of London's waste within London by 2026 • b create positive environmental and economic impacts from waste processing • c work towards zero biodegradable or recyclable waste to landfill by 2026. B This will be achieved by: • a minimising waste • b encouraging the reuse of and reduction in the use of materials • c exceeding recycling/composting levels in local authority collected waste (LACW) of 45 per cent by 2015, 50 per cent by 2020 and aspiring to achieve 60 per cent by 2031 • d exceeding recycling/composting levels in commercial and industrial waste of 70 per cent by 2020 • e exceeding recycling and reuse levels in construction, excavation and demolition (CE&D) waste of 95 per cent by 2020 • f improving London's net self-sufficiency through reducing the proportion of waste exported from the capital over time

	• g working with neighbouring regional and district authorities to coordinate strategic waste management across the greater south east of England.
Policy 5.17	LDF preparation F Boroughs must allocate sufficient land and identify waste management facilities to provide capacity to manage the tonnages of waste apportioned in this Plan. Boroughs may wish to collaborate by pooling their apportionment requirements. G Land to manage borough waste apportionments should be brought forward through: a protecting and facilitating the maximum use of existing waste sites particularly waste transfer facilities and landfill sites b identifying sites in strategic industrial locations (see Policy 2.17) c identifying sites in locally significant employment areas (see Policy 4.4) d safeguarding wharves (in accordance with policy 7.26) with an existing or future potential for waste management. H If, for any reason, an existing waste management site is lost to non waste use, an additional compensatory site provision will be required that normally meets the maximum throughput that the site could have achieved.
Paragraph 5.80	… Where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met.
Policy 5.18 Construction, Excavation and Demolition Waste	Planning decisions A New construction, excavation and demolition (CE&D) waste management facilities should be encouraged at existing waste sites, including safeguarded wharves, and supported by: • a using mineral extraction sites for CE&D recycling • b ensuring that major development sites are required to recycle CE&D waste on-site, wherever practicable, supported through planning conditions. B Waste should be removed from construction sites, and materials brought to the site, by water or rail transport wherever that is LDF preparation C LDFs should require developers to produce site waste management plans to arrange for the efficient handling of CE&D waste and materials.
Policy 5.19 Hazardous Waste	Strategic A The Mayor has prepared a Hazardous Waste Report for London, working in partnership with the boroughs, the Environment Agency, industry and neighbouring authorities to identify the capacity gap for dealing with London's hazardous waste and to provide and maintain direction on the need for hazardous waste management capacity. Planning Decisions B 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 Policy 5.17H. LDF preparation C LDFs should:

	• a make provision for hazardous waste treatment plants to achieve, at regional level, the necessary waste management requirements • b as part of meeting waste apportionment identify suitable sites for the storage, treatment and reprocessing of relevant or a range of hazardous waste streams • c identify sites for the temporary storage, treatment and remediation of contaminated soils and demolition waste during major developments.

Draft London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 3 Design	
Policy D4 Housing quality and standards	G Dwellings should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables (for at least card, paper, mixed plastics, metals, glass) and food.
Chapter 6 Economy	
Policy E4 Land for industry, logistics and services to support London's economic function	A A sufficient supply of land and premises in different parts of London to meet current and future demands for industrial and related functions should be maintained. This should make provision for: 3) secondary materials and waste management D The retention and provision of additional industrial capacity should be prioritised in locations that: 2) provide capacity for logistics, waste management, emerging industrial sectors or essential industrial-related services that support London's economy and population
Policy E5 Strategic Industrial Locations (SIL)	C Development proposals in SILs should be supported where the uses proposed fall within the broad industrial-type activities set out below: 4) other industrial-type functions, services and activities not falling within the above Use Classes including secondary materials and waste management, utilities infrastructure, land for transport and wholesale markets
Chapter 9 Sustainable Infrastructure	
Policy SI3 Energy infrastructure	B Energy masterplans should be developed for large-scale development locations which establish the most effective energy supply options. Energy masterplans should identify: 4) possible opportunities to utilise energy from waste
Policy SI7 Reducing waste and supporting the circular economy	A Waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by: 1) promoting 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) encouraging waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products 3) ensuring that there is zero biodegradable or recyclable waste to landfill by 2026

	4) meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon energy in London from suitable remaining waste: a) municipal waste127 – 65 per cent by 2030 b) construction, demolition and excavation waste – 95 per cent by 2020 5) designing developments with adequate and easily accessible storage space that supports the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food. 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 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 to support recycling and re-use 5) how much waste the proposal is expected to generate, and how and where the waste will be handled.
Policy SI8 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 SI9 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) identify how waste will be reduced, in line with the principles of the Circular Economy and how remaining quantums of waste will be managed 2) allocate sufficient land 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 3) 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 Employment Sites / land c) safeguarded wharves with an existing or future potential for waste and secondary material management. C The following are particularly encouraged – development proposals which: 1) deliver a range of complementary waste management and secondary material processing facilities on a single site 2) support prolonged product life and production of secondary materials including repair, refurbishment and remanufacture 3) contribute towards renewable energy generation, especially renewable gas technologies from organic/biomass waste 4) provide combined heat and power and/or combined cooling heat and power

	5) contain proposals to effectively deal with CD&E waste on site and minimise export to landfill. D 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) job creation and social value benefits including skills, training and apprenticeship opportunities 3) achieving a positive carbon outcome (i.e. re-using and recycling high carbon content materials) resulting in significant greenhouse gas savings - 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.
Policy SI9 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 at least meet, and should exceed, the maximum achievable throughput of the site proposed to be lost.

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
Mayor's Priority: Efficient Energy Supply	Where opportunities arise, developers generating energy or waste heat should maximise long term carbon dioxide savings by feeding the decentralised energy network with low or zero carbon hot, and where required, cold water.
Materials and Waste – Construction Phase: Mayors Priority	Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy.
Materials and Waste – Occupation Phase: Mayors Priority	Developers should provide sufficient internal space for the storage of recyclable and compostable materials and waste in their schemes. The design of development should meet borough requirements for the size and location of recycling, composting and refuse storage and its removal.
2.4.26	In accordance with London Plan policy 5.6, where a development consists of several buildings, each building should be served by communal heating and a site wide heating network should be considered and established, where

	appropriate. In addition to the strategic advantages of being able to connect to a district heating either immediately or in the future. The main benefit of district heating in the longer term is expected to be the carbon savings they can deliver by accessing sources of waste heat e.g. industrial waste heat, heat generated from municipal waste, etc. As such, communal heating schemes on individual sites are not installed to achieve carbon dioxide savings compared to individual boilers in the short term, but to maintain the ability of buildings to be supplied by low carbon, waste heat sources in the future.
2.4.30	Energy from waste and heat sources Every opportunity should be taken to utilise waste heat, including from heat rejection equipment or to generate energy and heat from waste. For some types of heat generation mitigation measures may be required to ensure the scheme minimises any harmful effects of emissions into the air. See chapter 4 for more details on protecting air quality.
2.7.4 – 2.7.5	Pre-fabrication 2.7.4 The fabrication of elements of a building off-site can reduce the generation of waste due to the controlled manufacturing process. For example, most bathrooms for student housing and for some hotels are constructed off-site and simply installed in their entirety within the development. 2.7.5 Most elements, at varying proportions, of a development can be manufactured off-site. The manufacture and preassembly in controlled conditions and improved accuracy of building elements can significantly reduce the time required to construct a development as well as improve a building's environmental performance. Developers are encouraged to design their schemes to incorporate as many pre-fabricated buildings elements as possible.
2.7.8 - 2.7.9	Most development sites have existing materials which can be reused or recycled. Developers should always look for options to sensitively reuse, refurbish, repair and convert buildings, rather than wholesale demolition. This will reduce the amount of resources used and will help reduce construction waste. Where the retention of a building or part of a building is not possible, developers should have measures to reduce the quantity of waste produced – from the demolition phase through to the construction phase – through the use of the waste hierarchy. More details on the waste hierarchy can be found in paragraphs.
2.7.18	Demolition material 2.7.18 Where the demolition of a building cannot be avoided developers should either reuse materials on-site or salvage appropriate materials to enable their reuse or recycling off-site. Where materials cannot be salvaged whole, and where aggregate is required on-site, this demolished material should be crushed on-site for reuse, with measures taken to minimise dust and noise. See the waste hierarchy below and the Mayor's SPG on The control of dust and emissions during construction and demolition.
2.7.19 – 2.7.25	The Waste Hierarchy 2.7.19 The 'waste hierarchy' ranks the different ways in which waste can be treated so that it limits the amount of resources used and waste generated. Developers should maximise the (re)use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation the following waste hierarchy: i Reduce;

	ii Reuse (prioritise on-site reuse of demolition materials, followed by offsite reuse); iii Recycle (prioritise on-site recycling, then off-site recycling); iv Resource recovery (for energy generation processes – fuels, heat and power); and v Disposal. 2.7.20 In line with the waste hierarchy, when selecting materials, the preferred approach should be: i the use of reclaimed materials; ii the use of materials with higher levels of recycled content; and iii the use of new materials. i Reduce 2.7.21 Reducing waste, which is at the top of the waste hierarchy, should be developers' preferred option. This means, it is better to prevent waste being produced in the first place rather than to recycle or dispose of waste that is produced. Developers should focus on opportunities for waste reduction from the outset, at the earliest stages of design, as well as through better methods of purchasing and ways of working, for example by purchasing pre-used materials and monitoring over-supply to better inform future procurement of materials. 2.7.22 Where demolition is necessary, developers are encouraged to: • safely remove the most valuable or more contaminating materials and fittings for later reuse or processing before work commences; • optimise the reuse and recycling of demolition materials. Developers are encouraged to use the Demolition Protocol where substantial demolition is proposed (over 1,000 square meters). In general the protocol is a 'demolition waste audit' - a process that describes the percentage of the materials present on a site which can be reused/recycled (either in the development site or one nearby); • demonstrate that the most significant opportunities to increase the value of materials derived from recycled and reused content have been considered. A good way of achieving this aim at no additional construction cost is to use the Waste and Resources Action Programme (WRAP)49 by selecting the top ten WRAP Quick Wins or equivalent, and implement the good practice guidance; • to produce Site Waste Management Plans50 (SWMP) A Site Waste Management Plan can provide a framework for managing waste in line with the hierarchy by identifying types and quantities of materials for reuse/recycling to reduce the amount of waste produced by construction projects. For further guidance see the WRAP NetWaste tool which has a site waste management plan function; • design for deconstruction (as explained above); and • incorporate a 'material salvage phase', in which construction and surplus materials are recovered from the site. Additionally, materials should be segregated into categories, e.g. timber waste, metal waste, concrete waste and general waste – to aid reuse or recycling. ii Reuse 2.7.23 Once the demand for building materials has been reduced developers should reuse and prepare for the reuse of materials, either on-site/off-site. This can be done during the design, procurement and construction phases of a development by, for example: • identifying and segregating materials already on-site for reuse in the new development. Materials that can potentially be reused include:

	◊ bricks, concrete, ◊ internal features – historic fireplaces, timber floorboards, doors, ◊ metal frames, plastics, granite, and ◊ sub-soil, top soil; • using the BRE Smart Waste management plan tool. This is an online template contractors can use to input data on the amount and type of waste and have it sorted by the management tool; and • making the materials not (re)used on-site available for reuse elsewhere. Consider the exchange/sale/donation of construction site materials to waste recovery businesses, such as: BRE Materials Information Exchange; waste exchanges such as recipro52 or the waste change.com53 etc. These specialists can sort, clean, repair and refurbish the waste materials and then find businesses that can reuse/ recycle them. iii Recycling 2.7.24 Recycling materials (either on-site/offsite), is the preferable solution only when waste minimisation 'reduce' or reuse are not feasible. The recycling of materials enables them to be made into something new. Every opportunity should be taken to recycle materials in the most cost and carbon dioxide efficient way. This can be done by, for example: • identifying and segregating materials to promote closed loop recycling where materials are recycled back into the same material (for example recycling glass back into glass containers instead of aggregate.) This includes: ◊ metals and high value materials, ◊ timber, plasterboard, packaging, and ◊ concrete crushed and re-used for concrete aggregate; • using the BRE Smart Waste www.smartwaste.co.uk mentioned above; • considering 'take-back' schemes with suppliers for materials and packaging. This where suppliers take back any materials not used as well as any packaging the materials are delivered in; and • making materials not reused onsite available for reuse elsewhere, as discussed above. iv & v Other Recovery and Disposal 2.7.25 Disposal is the least preferred waste management approach. Developers should only consider disposal of materials and waste after all of the above approaches have been carried out. Disposal generally involves burying the materials in a landfill. Waste materials from construction and demolition activities are generally not suitable for energy generation. Where landfill is the only option for the materials developers should: • identify materials that are contaminated and cannot be reused or recycled and arrange for their safe and legal disposal by the authorised waste management; • remove all toxic and hazardous materials from a development site in accordance with any relevant legislation, unless they are integral to the structure or a feature to be retained, and any harm to environmental or public health should be mitigated; or • limit waste disposal to minimise the amount of land fill tax that needs to be paid.

2.7.27 – 2.2.28	Storage for recyclables, organic material and waste 2.7.27 Developers must ensure sufficient internal and external space is provided to facilitate recycling and composting and the good management of waste. Borough's have requirements for the storage of recyclable, organic material and waste in accordance with the local collection provision. The design of waste storage should be considered early in the design process and should ensure it is as convenient to recycle as it is to manage waste . It should be noted that from 2015, it likely additional space for the storage of recyclable materials will be required as local authorities will be required to collect various recyclable materials separately. 2.7.28 In all developments the location of external storage areas should consider the noise generated from the frequency of use of this area and its servicing as well as the requirements of the serving operator to pick up the materials. This is especially important in dense mixed use areas with residential occupiers as commercial recycling and waste services may occur at night.

Mayor's Land for Industry and Transport SPG (2012)

Policy/ paragraph reference	**Policy and paragraph text**
SPG 6	In implementing London Plan policies, the Mayor will and TfL, boroughs and others partners should: (i) take into account the need to accommodate additional waste management and recycling facilities in assessments of supply and demand for industrial land and make sufficient provision in DPDs to meet the waste apportionment targets set out in the London Plan; (ii) have regard to the indicative land requirements for additional waste management and recycling facilities 2011-2031 set out in Annex 2; (iii) take a proactive approach to accommodate additional waste management and recycling facilities, make efficient use of available sites and facilitate the redevelopment and intensification of existing occupied industrial land for waste management purposes; (iv) consider existing and emerging best practice in the design of new waste management facilities (see paragraphs 6.8 to 6.10) and explore opportunities for co-location of waste treatment facilities with other forms of development; (v) take account of the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, and to use modes other than road transport when practicable.

West London Waste Plan

Policy/ paragraph reference	**Policy and paragraph text**

Policy WLWP 1 - Provision of New Waste Management Capacity	Apportioned Waste – Municipal Solid Waste & Commercial and Industrial Waste:
	• Over the period to 2031, there is a need for about 614,000 tonnes of additional annual capacity to meet the apportionment set in the London Plan (2011). This is to be delivered on the allocated sites identified in Policy WLWP 2 as follows:
	  • 162,000 tonnes in the period up to 2021
	  • A further 221,000 tonnes (total 383,000 tonnes) in the period 2021 to 2026
	  • A further 231,000 tonnes (total 614,000 tonnes) in the period 2026 to 2031
	• The requirement is for capacity in the re-use, recycling, and other recovery
	• categories.
	• Provision over and above the tonnages required to meet the London Plan (2011) apportionment and of a nature similar to that identified above will be encouraged where this would contribute towards net self-sufficiency.
	• Provision should be made in accordance with the waste hierarchy, and this should be addressed and justified as a pre-requisite of any grant of planning permission.
	• Non apportioned Waste:
	• Development of management capacity will be supported in principle that contributes towards net self sufficiency across the Plan area for:
	  • Construction, Demolition and Excavation Waste in accordance with the waste hierarchy with particular support for the production of material suitable for use as substitutes for virgin materials such as recycled aggregates; and
	  • b. Hazardous waste treatment capacity that accords with any hazardous waste.

Policy WLWP 2 – Safeguarding and Protection of Existing and Allocated Waste Sites	Land accommodating existing waste management uses in West London will be protected for continued use for waste management. Existing sites which have been allocated as having the potential for capacity expansion by redevelopment (Table 5-1) and new sites with potential for development for waste management facilities (Table 5-2) are also be safeguarded. To ensure no loss in existing capacity, re-development of any existing waste management sites must ensure that the quantity of waste to be managed is equal to or greater than the quantity of waste for which the site is currently permitted to manage, or that the management of the waste is being moved up the waste hierarchy. Development for non-waste uses will only be considered on land in existing waste management use, or land allocated in Table 5-2 if compensatory and equal provision if capacity for waste, in scale and quality, is made elsewhere within the West London Boroughs*.
Policy WLWP 3 – Location of Waste Development	Waste development proposals on existing waste management sites31 and the sites listed in Table 5-2 will generally be supported, provided that the proposals comply with the development plan for the area. Waste development on other sites will be supported in principle if the proposals comply with the other WLWP policies and the Boroughs' and the OPDC's adopted development plans, and: a. It can be demonstrated that the development cannot be delivered at any available and suitable existing waste management site within the Borough or OPDC area32 where the development is proposed and at the sites listed in Tables 5-1 and 5-2; and

	b. In the case of facilities proposed for the management of MSW and C&I waste, identified sites in Tables 5-1 and 5-2 have not come forward and it can be demonstrated that there will be a shortfall in the waste management capacity required to meet the Boroughs' joint apportionment target as specified in Policy WLWP 1; and c. There is no adverse cumulative effect, when taken together with existing waste management facilities, on the well-being of the local community, including any significant adverse impacts against the WLWP sustainability objectives (see Appendix 1); and d. The proposed site meets the criteria set out in the subsequent WLWP Policies if applicable.
Policy WLWP 4 – Ensuring High Quality Development	All waste development proposals will be required to demonstrate, for both the construction and operational phases of the development, that: a. Development will be permitted only where it can be shown that unacceptable impact to local amenity will not arise from the construction and operation of a facility; b. Adequate means of controlling noise, vibration, dust, litter, vermin, odours, air and water-borne contaminants and other emissions are incorporated into the scheme; c. The development is of a scale, form and character appropriate to its location and incorporates a high quality of design, to be demonstrated through the submission of a Design and Access statement36 as appropriate; d. Active consideration has been given to the transportation of waste by modes other than road, principally by water and rail and this has been incorporated into the scheme or proven not to be practicable; e. Transport directly and indirectly associated with the development will not exceed the capacity of the local road network or result in any significant; f. Adverse impact on the amenities of the area. Where necessary, this is to be demonstrated by a Transport Assessment; g. An appropriate BREEAM38 or CEEQUAL39 rating, as specified in Borough and OPDC development plans, will be achieved; h. The development has no significant adverse effects on local biodiversity and it can be demonstrated that there will be no significant adverse impacts or effects on the integrity of an area designated under the "Habitats Directive"; i. There would not be a significant impact on the quality of surface and groundwater. The development incorporates the principles of Sustainable Drainage Systems (SUDS) unless evidence is provided to justify alternative drainage methods; j. There will be no increased flood risk, either to the immediate area or indirectly elsewhere. Where necessary40, this is to be demonstrated by a Flood Risk Assessment; k. Green Travel Plans have been considered, where appropriate41; l. The site does not contain features, or will not lead to substantial harm to, or loss of significance of, any heritage assets such as conservation areas, archaeological sites, listed buildings etc; m. There is no foreseeable adverse impact on health, and where necessary this is to be demonstrated by a Health Impact Assessment. In addition: n. Adjacent development proposals which would prevent or prejudice the use of safeguarded sites for waste purposes will be resisted unless suitable alternative provision is made. o. Applications shall provide details of the management arrangements for residues arising from any waste management facility.

Policy WLWP 5 – Decentralised Energy	All waste management facilities that are capable of directly producing energy or a fuel must secure, where reasonably practicable: • The local use of any excess heat in either an existing heat network or through the creation of a new network; • The use of biogas/syngas in Combined Heat and Power facilities, either directly through piped supply or indirectly through pressurisation and transport; • The use of any solid recovered fuel in Combined Heat and Power facilities or as a direct replacement for fossil fuels in London; or • Any other contribution to decentralised energy in London. Where it is demonstrated that the provision of decentralised energy is not economically feasible or technically practicable, the development shall not preclude the future implementation of such systems. Energy from Waste facilities will only be considered where it can be demonstrated that they qualify as a recovery operation as defined in the Waste Framework Directive. Proposals for Energy from Waste should demonstrate that they will not compromise the management of waste in accordance with the waste hierarchy requirement of the Waste Framework Directive.
Policy WLWP 6 – Sustainable Site Waste Management	To encourage sustainable waste management, waste management developments will be permitted where it can be demonstrated that: a. At least 10% of the materials or products used in the construction and operation of the development are re-used or recycled and sourced from within 100km from the site; b. Construction, demolition and excavation wastes are minimised and then reused or recycled on site, where practicable and environmentally acceptable; c. Site Waste Management Plans are comprehensive and capable of being delivered; and d. Where on-site management of waste is not possible, active consideration has been given to the transportation of construction, demolition and excavation wastes away from the site by modes other than road, principally by water and rail and this has been incorporated into the scheme or proven not to be practicable.
Policy WLWP 7 – National Planning Policy Framework: Presumption in Favour of Sustainable Development	When considering development proposals, Boroughs and OPDC will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. They will always work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area. Planning applications that accord with the policies in this waste plan (and, where relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise. Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Borough or OPDC will grant permission unless material considerations indicate otherwise – taking into account whether: • Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the NPPF taken as a whole; or • Specific policies in the NPPF indicate that development should be restricted.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle E2	Proposals should: a. Continue to protect waste sites in Park Royal as set out in the West London Waste Plan, as adopted by OPDC in July 2015; b. Investigate the potential for the relocation of existing waste sites from Old Oak to Park Royal and wider; c. Support London's transition to the circular economy to turn London's waste into an economic opportunity and become 100% net waste self-sufficient d. Investigate the potential for integrating waste sites in Old Oak delivering benefits in the form of jobs, new materials and low carbon heat and power; and e. Demonstrate innovative waste and recycling management and collection processes to help boost London's recycling rate.

LBHF Core Strategy (2018)

Policy/ paragraph reference	Policy and paragraph text
CC6	**The council will pursue sustainable waste management, including:** a. planning to manage 247,000 tonnes per annum of waste in LBHF by 2036; b. promoting sustainable waste behaviour and continued use of the WRWA Smuggler's Way facility; and c. seeking, where possible, the movement of waste and recyclable materials by sustainable means of transport, maximising the use of the River Thames where possible.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	Alternative policy option
12.43	Safeguard all waste sites in Old Oak. This approach would ensure that borough apportionment targets are exceeded, but would prevent development from being brought forward within the Old Oak North place and would undermine the delivery of homes and jobs in the OPDC area.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Waste apportionment: OPDC's waste study evidence should identify waste streams for construction/demolition, low level radioactive, agricultural, hazardous and waste water waste streams. Relationships with the Western Riverside Waste Authority should also be acknowledged.	North London Waste Plan, London Waste Planning Forum, City of London Corporation, Royal Borough of Kensington and Chelsea	Change proposed. Requirements for these waste streams are identified in OPDC's Waste Technical Paper supporting study. The supporting text to the waste policy (EU6) refers to the ongoing and continual work between OPDC and the Western Riverside Waste Authority boroughs and West London Waste Authority boroughs.
Resident, Environment Agency, Brent Council, City of London Corporation, North London Waste Plan	Existing waste sites: There was generally support for the relocation of existing waste sites, although recognition that this should happen in a sequential fashion, looking firstly to relocate within the OPDC area before considering other relocation options.	Change proposed. In accordance with London Plan Policy 5.17H, the Local Plan requires developers to ensure waste management site(s) which are lost to a non-waste use will be required to provide compensatory site provision which normally meets the maximum throughput that the site could achieve and supports its relocation to a suitable site in the following sequential manner: • within the borough where the site is located; • within the West London Waste Authority and Western Riverside Planning Authority areas; or • within Greater London
Hammersmith and Fulham, Grand Union Alliance, Harlesden Neighbourhood Forum, Midland Terrace Resident's Group, TITRA, 2 local residents	Powerday Waste Site: Hammersmith and Fulham were supportive of the retention of the Powerday waste site but other stakeholders raised concerns about its continued presence because of dust, noise and air quality issues	OPDC will continue to safeguard the Powerday waste site. The rationale for safeguarding Powerday (Old Oak Sidings) is outlined in the Waste Apportionment Study supporting evidence paper. It is required for safeguarding for

		apportionment to ensure that LBHF can meet its apportionment targets. This is a requirement of para 5.80 of the London Plan.
Environment Agency, Old Oak Park (DP9), London Waste Planning Forum, Wells House Road Residents Association, London Waste Planning Forum, 1 local resident	New or expanded waste sites: Requests were made that any new or expanded waste sites should be located well away from existing or planned residential areas and that the sites themselves should be fully enclosed. General requests were made for a criteria based policy to assess new waste site applications.	Change proposed. The waste policy has been revised to include criteria for the assessment of new and/or expanded waste sites. This includes the requirement for waste facilities to be fully enclosed. Other relevant Local Plan policies would also apply to waste sites, in particular, policies in the Transport and Environment and Utilities chapters.
Greater London Authority, Grand Union Alliance, WRc, London Sustainable Development Commission	Waste hierarchy: Requests were made that the waste hierarchy is more directly referenced in the Local Plan and that the policies promote re-use and recycling before considering measures such as energy from waste	Change proposed. Although the waste hierarchy is clearly articulated in the London Plan and OPDC has generally taken the approach to avoid repetition of London Plan policy, it is recognised that managing waste up the waste hierarchy is an important issue and this is now included in the revised waste policy.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Park Royal should contribute more to waste management process. The Local Plan places too much reliance on the Powerday site in Old Oak. Plan should share out waste processing across Old Oak and Park Royal. There should be a stronger emphasis on waste being managed at source.	Old Oak Interim Neighbourhood Forum, TITRA, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policy EU6 and its supporting text refers to a number of waste sites across its area. The West London Waste Plan is part of OPDC's Development Plan and this includes more detail on waste sites identified in Park Royal. Policy EU7 on the Circular Economy approach will help ensure that less waste is generated and Policy EU6 requires Site Waste Management Plans to demonstrate that waste is being managed, both during construction and operation, as high up the waste hierarchy as possible.

It is not possible to safeguard the Twyford Waste Transfer Station site as implemented permission exists to redevelop part of the site. Policy should reflect WLWP position. Figure 6.9 should be updated to reflect the correct land ownership details for the safeguarded Abbey Road waste site	Turley (on behalf of Ashia Centur Limited)	Change proposed. Figure supporting EU6 has been amended to reflect the boundary for the Twyford Waste Transfer Station allocated in the adopted West London Waste Plan.
Support policy reference to guidance on recycling and storage of waste	LWARB; Environment Agency	Noted.
Upholding policies in WLWP is welcomed, including the safeguarding of existing sites	London Borough of Ealing;	Noted.
Support EU6, including safeguarding sites, compensatory site provision, enclosure of facilities	Environment Agency	Noted.
Support EU6	Friary Park Preservation Group; Hammersmith Society; Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted.
The division between the roles and responsibilities of OPDC and the local authorities should be made clear.	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. More text has been provided to clarify the roles and responsibilities related to waste.
Changes to London Plan waste apportionment targets might result in a need to review WLWP and the identification of more waste sites. Preference for OPDC to have a separate apportionment target and Local Plan should be future proofed to allow for this scenario.	London Borough of Ealing	Change proposed. The current London Plan is adopted and therefore has significant weight as part of OPDC's Development Plan. The supporting text has been updated to recognise that a new Draft London Plan has been published and the potential need for a future review of policy EU6, if changes are required in order to help host boroughs to meet higher waste apportionment targets. The new draft London Plan does not propose a separate apportionment target for OPDC and OPDC is supportive of this approach.

Approach to compensatory provision should be revised to prioritise OPDC's area. Need to demonstrate that approach would be achievable/deliverable.	London Borough of Ealing	Change proposed. The sequential approach has been amended to prioritise finding sites within the OPDC area. In line with policy WLWP 1, the next step in the sequential process is for compensatory provision to made elsewhere within the relevant waste plan or authority area, this would include the whole of Ealing as well the rest of the boroughs covered by the WLWP. The applicant would need to demonstrate that the compensatory provision is available and therefore deliverable.
Clarify required on the status of the part of the WLWP relative to OPDC's Local Plan and to avoid duplication and inconsistencies.	London Borough of Ealing; Hammersmith, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The adopted WLWP policies will remain in place for part of the OPDC area that includes land within the London Boroughs of Brent and Ealing. This is already reflected in EU6 which requires proposals to comply with the WLWP policies where applicable. OPDC's Local Plan needs to include waste policies to cover the rest of its area which includes land within the London Borough of Hammersmith and Fulham, and therefore some duplication will be inevitable but necessary to provide comprehensive coverage of OPDC's area.
No policy on windfall sites so it is assumed WLWP policy 3 will continue to apply	London Borough of Ealing	No change proposed. The adopted WLWP policies will remain in place for part of the OPDC area that includes land within the London Boroughs of Brent and Ealing. This is already reflected in EU6 which requires proposals to comply with the WLWP policies where applicable.
Plan should identify all existing licenced waste management sites for safeguarding as per WLWP.	London Borough of Ealing	Change proposed. Policy EU6 has been amended to refer to all existing sites and the supporting text refers to the WLWP for further information.

Existing waste facilities, particularly Channel Gate, Quattro and Powerday. Powerday negatively impact residential areas and should not remain in its current location or increase its throughput. Greater emphasis should be on investing in the circular economy and at source disposal.	Bernie Timmins; Tim Potter; Lori Wiechec; Stuart McCaffer; Scott Cawley; Noam Lesham; Nicky Guymer; Bruce Stevenson; Oonagh Heron; Mark Walker; Jason Salkely; Dave Turner; TITRA; Grand Union Alliance; Ewa Cwirko-Godycka; Nye Jones, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Powerday is required to meet LBHF's waste apportionment targets and therefore it will continue to be safeguarded as a waste site. The other waste sites in the Plan have been identified as safeguarded sites in the adopted West London Waste Plan. These sites provide certainty that waste apportionment targets in Brent and Ealing can be met through the implementation of the WLWP. OPDC is not responsible for issuing waste permits or regulating waste management sites; these responsibilities are undertaken by the Environment Agency or the boroughs' Environmental Health departments. However policy EU6 seeks to ensure future proposals adequately mitigate their impact on amenity.
OPDC should continue to work positively with Western Riverside WPAs and other stakeholders to meet apportionment targets, and consider potential for additional capacity.	Mayor of London	No change proposed. OPDC is co-operating with host boroughs to ensure that their waste apportionments can be met as a priority in line paragraph 5.80 of the London Plan. OPDC host boroughs are Hammersmith and Fulham (LBHF), Brent and Ealing. The Waste Apportionment Study demonstrates how OPDC is meeting this obligation. In addition to this, OPDC has been working with the wider WRWA group (including LBHF) to prepare a joint Waste Technical Paper. This Waste Technical Paper forms part of the evidence base for OPDC's Local Plan. OPDC has no apportionment target and there is no formal agreement on pooling apportionment amongst the WRWA boroughs.

Object to proposal for Powerday site to become an energy from waste facility. Energy from waste using incineration is a fundamental misunderstanding of circular economy principles.	Nicky Guymer; Bruce Stevenson;bOonagh Heron; Mark Walker; Old Oak Interim Neighbourhood Forum; Dave Turner; TITRA; Grand Union Alliance; Ewa Cwirko-Godycka; Nye Jones, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The Utilities Study has assessed options and sets out further detail on the approach and assessment of energy sources for the strategic district heating network. The heat source for an area wide network is yet to be determined. Energy from waste has the potential to be the largest and most viable low carbon heat source but there are other potential secondary heat sources that have been investigated, including ground source heat pumps and heat recovery from the Grand Union Canal. The waste hierarchy includes 'other recovery' as a step prior to disposal and it at this stage in the hierarchy that energy from waste can make a contribution. Policy EU6 is clear that any such proposal should not shift the burden within the waste hierarchy from prevention, re-use or recycling.
Policy for managing construction waste is unrealistic and potentially harmful to local residential areas.	Nicky Guymer; Bruce Stevenson; Mark Walker; Dave Turner; TITRA; Ewa Cwirko-Godycka; Nye Jones, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The construction industry produces a significant amount of waste each year so it is right that OPDC should have ambitious targets for the re-use and recycling of construction materials. Major developments will be required to demonstrate how a minimum of 95% of excavation, demolition and construction waste will be re-used and/or recycled in line with the London Plan.
Policy requiring higher levels of recycling from residents is weak and ineffective. Policy should require more from developers as part of planning process. Need to fully integrate environmental infrastructure within housing developments and coordinate waste and recycling procedures across borough boundaries.	Nicky Guymer; Bruce Stevenson; Oonagh Heron; Mark Walker; Dave Turner; TITRA; Ewa Cwirko-Godycka; Nye Jones, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton; Grand Union Alliance	No change proposed. Brent, Ealing and Hammersmith and Fulham Councils are responsible for waste collection within the OPDC area. Policy EU6 requires developers to put the correct measures in place to ensure that recycling rates can be improved through alignment with boroughs collection/management methods and the provision of appropriate details and training for occupants.

Policy places reliance on out of date West London Waste plan, out of step with down-sized targets for waste in the current London Plan	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Powerday is required to meet LBHF's waste apportionment targets and therefore it will continue to be safeguarded as a waste site. The other waste sites in the Plan have been identified in the adopted West London Waste Plan (WLWP). The adopted WLWP policies will remain in place for part of the OPDC area that includes land within the London Boroughs of Brent and Ealing. It is noted that a new draft London Plan (2017) has been published with higher apportionment targets set out for Brent and Ealing and a reduced overall target for Hammersmith and Fulham by 2041. OPDC will continue to work positively with the host boroughs to help demonstrate how any revised London Plan apportionment targets would be met, and if necessary, this may trigger the review of this policy and relevant policies in the WLWP.
		Policy EU6 already includes criteria to allow for compensatory provision if waste sites are lost to a non-waste uses.
Need to fully integrate environmental infrastructure within housing developments and coordinate waste and recycling procedures across borough boundaries.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Brent, Ealing and Hammersmith and Fulham Councils are responsible for domestic waste and recycling within the OPDC area. Policy EU6 requires developers to put the correct measures in place to ensure that recycling rates can be improved through alignment with boroughs collection/management methods and the provision of appropriate details and training for occupants.
There are major flaws in the evidence base behind the policy and that as a result the OPDC is failing to meet the London Plan requirement to ensure that Boroughs apportionment targets are met.	North London Waste Plan	No change proposed. The Waste Apportionment Study demonstrates how OPDC is helping the host boroughs to meet their apportionment. LBHF have confirmed that they support the approach to safeguarding Powerday to meet their targets.

Policy should focus on maximum throughput achieved over a five year period where compensatory provision is required.	North London Waste Plan	Change proposed. The supporting text has been amended to refer to mayoral guidance.
OPDC have been working effectively with Hammersmith & Fulham Council as well as the other boroughs within the WRWA area on waste matters.	London Borough of Hammersmith and Fulham	Noted.
Support safeguarding of the Powerday site.	London Borough of Hammersmith and Fulham	Noted.
Concerned that policy does not afford safeguarded sites enough protection	London Borough of Hammersmith and Fulham	Change proposed. Text in policy EU6 has been removed to clarify that all waste sites are safeguarded in the same way. It also requires compensatory site provision if any waste management site is lost to a non-waste use to ensure no overall reduction in capacity. This approach is in line with the London Plan policy 5.17.
The capacity at EMR should be appropriately replaced, with priority given to any potential suitable locations within LBHF & then the WRWA area to ensure EMR capacity is not lost.	London Borough of Hammersmith and Fulham	No change proposed. The sequential approach prioritises finding sites within the OPDC area as this will give greater flexibility and a wider area of search to find suitable sites for waste. The sequential approach also includes a step which directs provision to the appropriate waste plan or authority area.
The wording should be enhanced to better explain how the re-provision would work and to confirm that this would only apply to non safeguarded sites	London Borough of Hammersmith and Fulham	Change proposed. Text in policy EU6 has been removed to clarify that all waste sites are safeguarded in the same way. It also requires compensatory site provision if any waste management site is lost to a non waste use to ensure no overall reduction in capacity. This approach is in line with the London Plan policy 5.17.
The wording of para 6.76 could be improved by referencing other relevant stakeholders	London Borough of Hammersmith and Fulham	Change proposed. Text updated to clarify that a range of stakeholders will be involved.

Planning for waste management is a strategic (cross-Borough) matter and subject to the legal requirement of the Duty to Cooperate. OPDC has waste planning responsibilities, it does not have a waste apportionment target which it is required to meet.	Royal Borough of Kensington and Chelsea	Noted.
OPDC has waste planning responsibilities but it does not have a waste apportionment target which it is required to meet. OPDC has resisted committing to pooling apportionment targets and capacity with the Western Riverside WPAs.	Royal Borough of Kensington and Chelsea	No change proposed. OPDC has been working positively with LBHF, RBKC and WRWA as part of the Duty to Co-operate. Joint working arrangements has extended to the preparation of joint evidence base in the form of the WRWA Waste Technical Paper. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. However, it is noted that the new Draft London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.

OPDC is releasing EMR on basis that it is not needed. However, the EMR facility is a vital contributor to the apportionment capacity for the Western Riverside WPAs.	Royal Borough of Kensington and Chelsea	No change proposed. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority. OPDC's Waste Apportionment Study demonstrates how OPDC is helping host boroughs to meet their targets and the rationale for releasing the EMR site. Notwithstanding this, EU6 includes a requirement for compensatory provision if any waste site is lost to a non waste use.
If compensatory EMR capacity is not provided within LBH&F or the WR area the potential for pooling apportionment will be permanently lost. Suggest that Policy is amended to ensure replacement capacity is provided within the OPDC host borough in which the facility is located as a priority.	Royal Borough of Kensington and Chelsea	No change proposed. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority. OPDC's Waste Apportionment Study shows that the Old Oak Sidings (Powerday site) can meet LBHF's apportionment target and also provides a rationale for releasing the EMR site. The sequential approach in EU6 prioritises finding sites within the OPDC area as this will give greater flexibility and a wider area of search to find suitable sites for waste. The sequential approach also includes a step which directs provision to the appropriate waste plan or authority area.
Further information for optimising use of Powerday is required.	Royal Borough of Kensington and Chelsea	Change proposed. Additional text has been included to support a more efficient use of the Powerday site. Policies P1, EU6, EU10 and T7 also include measures/requirements that will ensure that the site is maximised. The Waste Apportionment Study includes more information on the potential capacity of the Powerday site.

Capacity is committed to assist RBKC in the current adopted LBHF Core Strategy. Disappointed to see that the arrangement has not been reflected in the OPDC Local Plan.	Royal Borough of Kensington and Chelsea	No change proposed. OPDC has been working positively with LBHF, RBKC and WRWA as part of the Duty to Co-operate. Joint working arrangements has extended to the preparation of joint evidence base in the form of the WRWA Waste Technical Paper. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. However, it is noted that the new Draft London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.

There is no detail in the Local Plan on how the district heating scheme at Powerday will operate.	North London Waste Plan	No change proposed. The Utilities Study has assessed options and sets out further detail on the approach and assessment of energy sources for the strategic district heating network. The heat source for an area wide network is yet to be determined. Energy from waste has the potential to be the largest and most viable low carbon heat source but there are other potential secondary heat sources that have been investigated including ground source heat pumps and heat recovery from the Grand Union Canal.
The wording could be enhanced to better explain how re-provision would work for non-safeguarded waste sites. Amend para 6.74.	LBHF	Change proposed. Text in policy EU6 has been removed to clarify that all waste sites are safeguarded in the same way. It also requires compensatory site provision if any waste management site is lost to a non waste use to ensure no overall reduction in capacity. This approach is in line with the London Plan policy 5.17.
Improve wording in para 6.76 to say OPDC will work with operators of waste sites, the EA, waste authorities, LAs, businesses and residents to find ways to introduce energy generation in a way that delivers benefits and addresses adverse impacts to the area.	LBHF	Change proposed. Text updated to clarify that a range of stakeholders will be involved.
Plan does not adequately deal with waste plants in the area	Wells House Road Residents (Joanna Betts, Nicholas Kasic, Marc and Caroline Francis, Patrick Munroe, Lily Gray, Catherine Sookha, Ralph Scully, Mark Walker, Lynette Hollender,Jeremy Aspinall, Thomas Dyton)	No change proposed. Waste facilities are already covered by Policy EU6 and policies in the West London Waste Plan.
Changes to London Plan waste apportionment targets might result in a need to review WLWP and the identification of more waste sites. Preference for OPDC to have a separate apportionment target and Local Plan should be future proofed to allow for this scenario.	London Borough of Ealing	No change proposed. The current London Plan is adopted and therefore has significant weight as part of OPDC's Development Plan. The supporting text has been updated to recognise that a new Draft London Plan has been published and the potential need for a future review of policy EU6, if changes are required in order to help host boroughs to meet higher waste

		apportionment targets. The new draft London Plan does not propose a separate apportionment target for OPDC and OPDC is supportive of this approach.
Approach to compensatory provision should be revised to prioritise OPDC's area. Need to demonstrate that approach would be achievable/deliverable.	London Borough of Ealing	Change proposed. The sequential approach prioritises finding sites within the OPDC area as this will give greater flexibility and a wider area of search to find suitable sites for waste. The sequential approach also includes a step which directs provision to the appropriate waste plan or authority area.
Clarify required on the status of the part of the WLWP relative to OPDC's Local Plan and to avoid duplication and inconsistencies. The division of responsibilities between OPDC and local authorities should be made clear.	London Borough of Ealing; Hammersmith, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The adopted WLWP policies will remain in place for part of the OPDC area that includes land within the London Boroughs of Brent and Ealing. This is already reflected in EU6 which requires proposals to comply with the WLWP policies where applicable. OPDC's Local Plan needs to include waste policies to cover the rest of its area which includes land within the London Borough of Hammersmith and Fulham, and therefore some duplication will be inevitable but necessary to provide comprehensive coverage of OPDC's area.

OPDC's policy is major impediment to pooling and has not taken into account the wider Western Riverside joint working relationship or aims when developing the Plan and therefore has not fulfilled the Duty to Cooperate	Royal Borough of Kensington and Chelsea	No change proposed. OPDC has been working positively with LBHF, RBKC and WRWA as part of the Duty to Co-operate. Joint working arrangements has extended to the preparation of joint evidence base in the form of the WRWA Waste Technical Paper. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. It is noted that the new Draft London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.
Further information for optimising use of Powerday is required.	Royal Borough of Kensington and Chelsea	Change proposed. Additional text has been included to support a more efficient use of the Powerday site. Policies P1, EU6, EU10 and T7 also include measures/requirements that will ensure that the site is maximised. The Waste Apportionment Study includes more information on the

		potential capacity of the Powerday site.
Capacity is committed to assist RBKC in the current adopted LBHF Core Strategy. Disappointed to see that the arrangement has not been reflected in the OPDC Local Plan.	Royal Borough of Kensington and Chelsea	No change proposed. OPDC has been working positively with LBHF, RBKC and WRWA as part of the Duty to Co-operate. Joint working arrangements has extended to the preparation of joint evidence base in the form of the WRWA Waste Technical Paper. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. It is noted that the new Draft London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.

The wording could be enhanced to better explain how re-provision would work for non-safeguarded waste sites. Amend para 6.74.	LBHF	Change proposed. Text in policy EU6 has been removed to clarify that all waste sites are safeguarded in the same way. It also requires compensatory site provision if any waste management site is lost to a non waste use to ensure no overall reduction in capacity. This approach is in line with the London Plan policy 5.17.
Plan fails to control waste plants in the area	Wells House Road Residents (Joanna Betts, Nicholas Kasic, Marc and Caroline Francis, Patrick Munroe, Lily Gray, Catherine Sookha, Ralph Scully, Mark Walker, Lynette Hollender,Jeremy Aspinall, Thomas Dyton)	No change proposed. The policy sets out the strategy for managing waste across the OPDC area. All of the sites identified are required to help meet the waste management needs of Brent, Ealing and Hammersmith and Fulham. OPDC is not responsible for issuing waste permits or regulating waste management sites; these responsibilities are undertaken by the Environment Agency or the boroughs' Environmental Health departments. However policy EU6 seeks to ensure future proposals adequately mitigate their impact on amenity.
Figure 6.9 should be updated to reflect the correct land ownership details for the safeguarded Abbey Road waste site	Turley (on behalf of Ashia Centur Limited)	Change proposed. The boundary of the site identified as safeguarded for waste will refer to the WLWP for a detailed boundary.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Provided comments on the previous consultation.	North London Waste Plan	Noted. See responses to EU6/20, EU6/21 and EU6/34 from the first regulation 19 draft Local Plan.
Welcome the Waste in tall buildings study as a contribution to improving performance in this area. This could be referenced in EU6 instead of LWARB guidance.	North London Waste Plan	Noted. No change proposed. A waste in high-density development SPD will be produced that will give additional guidance on this policy.

A pooling arrangement with Western Riverside boroughs should be considered.	North London Waste Plan	No change proposed. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. However, it is noted that the new Draft London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.
Question assumptions for Powerday site.	North London Waste Plan	Noted. See response to comment EU6/20 from the first regulation 19 draft Local Plan.
Policy EU6 does not make extra provision for or consider new ways to collect and store waste on site, enforcement mechanisms for effective waste collection and promoting higher recycling despite focus on high density and tall buildings. This is storing up waste management problems for the future which will cause serious problems for Old Oak's existing areas (Club House Goodhall/Stephenson street, given as example of the problem). Want to see a far	Nye Jones; Gail Dobinson; Rachel Ritfeld; Ciara Solmi; Bernie Timmins; M. Szoke; James Trew; Eileen Hannington; Marta Donaghey; Jamie Sutcliffe; Pablo Navarrete; Midland Terrace Residents; Pendle Harte; Jason Salkely; David Turner; Nicky Guymer; TITRA; Natasha Salkey; Jane Dreaper; Mark Walker; Elaine Gristock	No change proposed. Policy EU6 requires a Site Waste Management Plan to be submitted and this will demonstrate how the Mayor's waste targets will be achieved and how waste will be stored and collected as part of development proposals. OPDC will be developing a waste in high density development SPD to help inform on site storage of waste. It is not the role of the Local Plan to set out enforcement

more strategic and practical and accountable policy in the Local Plan. Policy EU6 is ineffective and unsound.		mechanisms or to determine specific approaches to waste collection. This is the responsibility of the Waste Collection Authority.
The policy documentation does not discuss local authorities such as Ealing Council's failure to enforce effective segregation of waste and recyclable material on its part of the Old Oak development zone/existing HMO. If an under-funded local authority cannot manage waste and enforce controls then it is highly inappropriate for the Local Plan to be advocating development on this scale without fresh thinking on waste management and its control.	Rachel Ritfield; James Trew; Eileen Hannington; TITRA; Mark Walker	No change proposed. Policy EU6 requires a Site Waste Management Plan to be submitted and this will demonstrate how the Mayor's waste targets will be achieved and how waste will be stored and collected as part of development proposals. OPDC will be developing a waste in high density development SPD to help inform on site storage of waste. It is not the role of the Local Plan to set out enforcement mechanisms or to determine specific approaches to waste collection. This is the responsibility of the Waste Collection Authority.
Object to the safeguarding and expansion of waste management capacity on the Powerday site at Old Oak Sidings, including allowing more biological material to be treated on site. The site has negative impact on the area. Another waste management option must be found. Policy EU6 is ineffective and unsound.	Natasha Salkey; TITRA; Nicky Guymer; Liz Abraham; Alessia Stevani	No change proposed. The Mayor's London Plan requires Local Plans to identify land/facilities to meet waste apportionment targets, and expects this to include protecting and facilitating the maximum use of existing waste sites. Powerday is required to meet LBHF's waste apportionment targets and therefore it will continue to be protected as a waste management site. The other waste sites in the Plan have been identified as safeguarded sites in the adopted West London Waste Plan. These sites provide certainty that waste apportionment targets in Brent and Ealing can be met through the implementation of the WLWP. OPDC is not responsible for issuing waste permits or regulating waste management sites; these responsibilities are undertaken by the Environment Agency or the boroughs' Environmental Health departments. However, policies D6, EU4, EU5, EU6 and relevant place policies seek to ensure future proposals

		adequately mitigate their impact on amenity.
Welcome the amendment relating to the Quattro site in Acton Wells, which is safeguarded in the West London Waste Plan. Would like to place on record that they are actively seeking an alternative site so that the Quattro landholding can be comprehensively planned.	Osbourne Investments Limited and Quattro Holdings Limited	Noted.
Various amendments have been made to this policy following the last consultation, many of which are welcomed, and in part go some way to addressing our earlier concerns. Despite these changes, there remain a number of outstanding and in principle concerns. These comments should be read alongside our earlier comments submitted in September 2017 and March 2018.	London Borough of Ealing	Noted. See responses to comments EU6/8, EU6/9, EU6/10, EU6/11, EU6/12, EU6/38, EU6/39 and EU6/40 from the first regulation 19 draft Local Plan.
Against the new and significantly higher apportionment targets in the new Draft London Plan, insufficient sites are now allocated or safeguarded within the West London Waste Plan, or through OPDCs Local Plan. Merely safeguarding such sites then through policy EU6 fails to properly grapple with the challenge.	London Borough of Ealing	No change proposed. The current London Plan is adopted and therefore has significant weight as part of OPDC's development plan. The supporting text has already been updated to recognise that a Draft New London Plan has been published and the potential need for a future review of policy EU6, if changes are required in order to help host boroughs to meet higher waste apportionment targets. The Draft New London Plan does not propose a separate apportionment target for OPDC and OPDC is supportive of this approach.

Ealing has made representations to the GLA requesting that apportionment targets should be set for all authorities including the MDCs. The Council's ability to plan for this apportionment through utilising a significant area of this land to accommodate future waste facilities now no longer exists following the transfer of planmaking powers to the OPDC. The ability to utilise this capacity and to allocate new waste sites in this area now resides solely with the OPDC. To assign this responsibility to Ealing through the apportionment is in our view neither justifiable nor deliverable. Believe that there is a real possibility that the GLA will need to rectify this position in the London Plan, and the consequence of this is that the OPDC Local Plan will either fail to conform with the London Plan, or if adopted ahead of the London Plan, will be out of date shortly thereafter.	London Borough of Ealing	No change proposed. The current London Plan is adopted and therefore has significant weight as part of OPDC's Development Plan. The supporting text has already been updated to recognise that a Draft New London Plan has been published and the potential need for a future review of policy EU6, if changes are required in order to help host boroughs to meet higher waste apportionment targets. The Draft New London Plan does not propose a separate apportionment target for OPDC and OPDC is supportive of this approach.
In respect of compensatory provision clause 'b' now recognises that alternative replacement provision should be made in the OPDC area in the first instance, which is a welcome addition. Despite this, this policy continues to promote a sequential approach, which could ultimately depend on sites beyond OPDC's boundaries, and for which it has no locus. It is also unclear how this would be secured/managed in practice.	London Borough of Ealing	No change is proposed. Applicants will be required to demonstrate appropriate compensatory provision is in place. For example, deliverability could be demonstrated through confirmation of the availability of a site for development, demonstrating suitability of the alternative site through confirmation of planning consent.
The text here has been revised to advise that compensatory provision should be sufficient to meet the maximum throughput that the lost site achieved. Previously the plan advised that compensatory provision should be equivalent to the potential throughput which could be achieved on a site. The earlier text in this respect is preferred and necessary.	London Borough of Ealing	Change proposed. Policy has been amended to refer to the maximum throughput the site could achieve.

To futureproof the plan, and in the event that an allocated site is not an existing waste site, the policy should apply to both existing and allocated waste sites.	London Borough of Ealing	Change proposed. Policy has been amended to refer to allocated waste sites.
An existing site is missing from Ealing's area – O C S Group Ltd, Unit 2 and Yard, Sovereign Park. A GIS layer with boundaries for each site including this one will be sent by separate cover.	London Borough of Ealing	Change proposed. Figure 6.7 has been amended to reflect list of sites identified in the West London Waste Plan.
A more strategic approach to the relocation and re-provision of the European Metal Recycling site is necessary, as this has been allocated for housing. It is one of a few sites that is able to legally dispose certain types of waste and if that facility is not replaced we envisage there being a high risk of increased illegal disposal or flytipping of these materials. This could be on the site or elsewhere in London and the southeast of England. Acknowledge that this is not necessarily for you to resolve in isolation but we encourage you take a collaborative approach and begin discussions with us and relevant stakeholders on this topic in good time.	Environment Agency	Noted. Applicants will be required to demonstrate appropriate compensatory provision is in place. For example, deliverability could be demonstrated through confirmation of the availability of a site for development, demonstrating suitability of the alternative site through confirmation of planning consent.
In terms of innovative waste collection facilities, LBHF wish to be involved in future discussions on options for waste collection systems as part of new major developments proposals.	London Borough of Hammersmith and Fulham	Noted. OPDC will engage LBHF in any proposals to develop innovative waste collection systems.
Food waste collection service should be considered in all aspects of the development including provision of the appropriate storage space. Its likely that LBHF will have food waste collection in operation over the OPDC Local Plan period. LBHF wish to be involved in any future waste SPD guidance.	London Borough of Hammersmith and Fulham	Noted. No change proposed. Policy EU6 does require adeuqate provision for the segregation of bio-waste and other recyclables in development in anticipation that food waste will be collected separately.

Lambeth, along with Kensington & Chelsea and Wandsworth, aimed to plan for waste jointly across the Western Riverside area by pooling capacity and apportionment targets and formalise this agreement through an MoU. Hammersmith & Fulham and the OPDC have resisted planning for waste collectively. LBH&F and OPDC have said they are unable to commit to pooling with the Western Riverside WPAs until further work is done. We have not received any update on this work to date and look forward to a progress report.	London Boroughs of Lambeth and Wandsworth and the Royal Borough of Kensington and Chelsea	No change proposed. OPDC has been working positively with LBHF, RBKC and WRWA as part of the Duty to Co-operate. Joint working arrangements has extended to the preparation of joint evidence base in the form of the WRWA Waste Technical Paper. The London Plan states that "where a Mayoral Development Corporation (MDC) exists or is established within a Borough the MDC will co-operate with the Borough to ensure that the Borough's apportionment requirements are met". OPDC host boroughs are Brent, Ealing and Hammersmith and Fulham and current evidence demonstrates how OPDC is meeting this requirement. However, it is noted that the Draft New London Plan indicates a significantly increased apportionment for two of our host boroughs - Ealing and Brent although for the third borough, LBHF there is an overall reduced apportionment. OPDC is obligated to ensure that the apportionment targets of host boroughs can be met as a priority and we will need to undertake further work to establish if the two host boroughs with increased apportionments can meet the increased requirement within their area. Therefore, we are unable to commit to an MOU on pooling with the WRWA WPAs until this further work has been undertaken. In the meantime, we remain committed as before to continue to work with the Western Riverside grouping in respect of ongoing waste evidence.

Planning for waste management is a strategic (crossborough) matter and subject to the legal requirement of the Duty to Cooperate. We then pointed out that OPDC's strategy for waste is an impediment to joint waste planning across the Western Riverside area. Surprised that there has been no contact from OPDC about these comments since they were made.	London Boroughs of Lambeth and Wandsworth and the Royal Borough of Kensington and Chelsea	Noted. See responses to EU6/28, EU6/29, EU6/30, EU6/31, EU6/32, EU6/33 from the first regulation 19 draft Local Plan.
Should note supporting text in para 9.8.7 of new draft London Plan. Early suggested changes on the draft new London Plan are expected in August and we hope the responsibility of MDCs to work collaboratively in groups with other waste planning authorities is clarified.	London Boroughs of Lambeth and Wandsworth and the Royal Borough of Kensington and Chelsea	Noted.
Support Para 6.73	London Borough of Hammersmith and Fulham	Noted.
Support Para 6.85 & point c iii)	London Borough of Hammersmith and Fulham	Noted.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
Waste Apportionment Study	• The Old Oak Sidings (Powerday) waste site and other sites in the WLWP should be safeguarded to help the host boroughs to meet their waste apportionment targets. • The Local Plan should promote energy from waste to support the delivery of OPDC's strategic district heating network.
Waste Management Strategy	• Adopt designing out waste principles during design, procurement, construction and deconstruction • Require contractors to develop detailed strategies for construction, demolition and excavation waste • Segregate waste during construction by type to maximise waste • recovery. Coordinate segregation and recovery with waste management companies and keep as much waste within the area as possible for reuse • Engage the public to minimise waste from operational phase through campaigns and other means • Provide waste segregation facilities to stream waste and facilitate

	recycling • Ensure that best practice standards are used for waste storage and collection and work with estate management teams to optimise collection regimes • Use Anaerobic Digestion and other technologies to treat organic waste and separate wet waste from other waste • Promote community sharing platforms to encourage reuse and repair centres • Adopt automated waste collection systems where viable • Establish an industrial symbiosis platform that supports business to business systems to utilise waste as a resource
Waste Technical Paper	• The Powerday waste site will need to be safeguarded to meet the London borough of Hammersmith and Fulham's waste apportionment for Household and Commercial & Industrial waste. • All the Low level Radioactive waste generated (8,607,810 MBq in 2013) is disposed of by air or through wastewater. Therefore, there is no requirement for additional facilities. • No waste from agricultural sources has been reported in the area, so there is no need for facilities to manage this. • There is around 90ktpa (kilo tonnes per annum) of permitted hazardous waste capacity within the WRWA area. This exceeds the waste arisings forecast and therefore no provision needs to be made for additional capacity. • The planned upgrade to Beckton Sewage Treatment work will create sufficient capacity for population growth in the catchment area up to 2035, and therefore no additional facilities are required. • There is approximately 1,134 ktpa capacity to handle Construction, Demolition and Excavation waste.
Environmental Standards Study	Operational waste collection, storage and transfer • As part of planning applications, all developers will be required to submit strategies which clearly set out how user separated solid waste will be efficiently collected and stored within building plots and how regular transfer off-plot will be handled. Strategies will need to give particular attention to issues of a) source segregation of food waste; b) separation of waste collection and storage facilities from users in high density, high rise buildings; c) control of odour, nuisance and air and noise pollution from waste collection, storage and transfer facilities. Strategies should include building design standards regarding food waste collection from flats and retail units. • Developers will be required to provide sufficient facilities within their development to ensure 100% of user recyclable waste can be collected and stored within plot commensurate with regular transfer to transfer stations. This should cover both within-unit storage, e.g. specifications for 'under counter' separated storage, as well as communal storage, e.g. in basement areas. Operational waste treatment / disposal • OPDC will work with developers, waste management service providers and Park Royal industrial businesses to support development of onsite waste management facilities to recycle operational waste (organic and dry recyclable) generated from development at Old Oak and industrial activities at Park Royal, with the aim of a) minimising residual waste sent to landfill; b) minimising

	the carbon impacts of waste treatment / disposal; c) close integration with existing facilities. Energy from waste • OPDC will work with developers, waste management service providers, Park Royal industrial businesses and the utility regulators to support development of onsite energy from waste (EfW) / Anaerobic Digestion (AD) facilities capable of handling existing and potential waste streams from both Park Royal and Old Oak. Facilities with smaller scale waste inputs and energy outputs will be preferred, to support flexibility and scalability in connecting EfW / AD plant to the onsite heating / cooling network.

Rationale for any non-implemented recommendations

Supporting Study	**Recommendations**	Rationale for not including
	• **N/A**	• N/A

Policy EU7: Circular and Sharing Economy

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
17	Within the overarching roles that the planning system ought to play, a set of core land-use planning principles should underpin both plan-making and decision-taking. These 12 principles are that planning should: • support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	Policy and paragraph text
Design	
Title: Planning should promote efficient use of natural resources **Paragraph:** 013 **Reference ID:** 26-013-20140306 **Revision Date:** 06 03 2014	The structure, layout and design of places can help reduce their resource requirements in terms of energy demands, water and land take, and help to sustain natural ecosystems Having a mix of uses and facilities within a neighbourhood can reduce travel demand and energy demands. Ensuring a place is durable and adaptable will help make it less resource hungry over time. For example the layout of infrastructure servicing development (including water supply, sewerage, drainage, gas, electricity, cable, telephone, roads, footpaths, cycle ways and parks) should take account of foreseeable changes in demand to reduce the need for expensive future changes. The layout and design of buildings and planting can reduce energy and water use and mitigate against flooding, pollution and over heating. Passive solar design is the siting and design of buildings to maximise the use of the sun's energy for heating and cooling. Passive solar design takes advantage of natural characteristics in building materials and air to help reduce the additional energy needed for heating and cooling. Policies can encourage sites to be planned to permit good solar access to as many buildings as

	possible. The potential benefits of passive solar design can only be realised by careful siting and layout. For example, access roads could predominantly run east-west, with local distributors running north-south and glazing minimised on north facing elevations to reduce heat loss. Passive solar design principles can be applied equally effectively in housing and commercial developments. It is important that passive design considers the potential for overheating in the summer, as well as reducing need for heating in the winter. A range of design solutions can be considered to help avoid overheating and the need for air conditioning. For example, high levels of thermal mass, maximising natural ventilation, passive cooling using planting for shade, roof overhangs to provide shade for high-sun angles, and smart glazing materials. The urban heat island effect can be reduced by, for example, allowing sufficient space between buildings, tree planting, shading and street layouts which encourage air flow and using light and reflective surfaces or vegetation on buildings.
Title: Consider materials **Paragraph:** 028 **Reference ID:** 26-028-20140306 **Revision Date:** 06 03 2014	Materials should be practical, durable, affordable and attractive. Choosing the right materials can greatly help new development to fit harmoniously with its surroundings. They may not have to match, but colour, texture, grain and reflectivity can all support harmony. There are a wide range of building and open space materials available and more products developed all the time. Innovative construction materials and techniques can help to achieve well designed homes and other buildings. This could include offsite construction and manufacturing which can help to deliver energy efficient and durable buildings more quickly. Although materials and building techniques may not be specified before planning permission is granted, the functions they will be expected to perform should be clear early on.
Waste	
Title: How is the Waste Hierarchy delivered through Local Plans and in planning decisions **Paragraph:** 009 **Reference ID:** 28-009-20141016 **Revision Date:** 16 10 2014	Driving waste up the Waste Hierarchy is an integral part of the National waste management plan for England and national planning policy for waste. All local planning authorities must have regard to the Plan and national policy in preparing their Local Plans. National waste planning policy is capable of being a material consideration in decisions on planning applications for waste management facilities.
Title: How can “non-waste” planning authorities	While such authorities may not have the planning functions in respect of the preparation of Local Plans covering waste, or dealing directly with waste planning applications, they must have regard to

deal with the Waste Hierarchy? **Paragraph:** 010 **Reference ID:** 28-010-20141016 **Revision Date:** 16 10 2014	national planning policy for waste and are expected to help deliver the Waste Hierarchy. This might include: • working constructively with waste planning authorities to identify and protect those sites needed for waste management facilities. Local planning authorities should consider the need for waste management alongside other spatial planning objectives • integrating local waste management opportunities in proposed new development • considering, where relevant, the likely impact of proposed, non-waste related development on existing waste management sites and on sites and areas allocated for waste management • promoting sound management of waste from any proposed development, such as encouraging on-site management of waste where this is appropriate, or including a planning condition to encourage or require the developer to set out how waste arising from the development is to be dealt with • including a planning condition promoting sustainable design of any proposed development through the use of recycled products, recovery of on-site material and the provision of facilities for the storage and regular collection of waste • ensuring that their collections of household and similar waste are organised so as to help towards achieving the higher levels of the waste hierarchy.
Title: What should Local Plans deliver? **Paragraph:** 011 **Reference ID:** 28-011-20141016 **Revision Date:** 16 10 2014	The Local Plan relating to waste should identify sufficient opportunities to meet the identified needs of an area for the management of waste, aiming to drive waste management up the Waste Hierarchy. It should ensure that suitable sites and areas for the provision of waste management facilities are identified in appropriate locations.
Title: How should local planning authorities integrate the need for waste management with other spatial concerns in the preparation of Local Plans? **Paragraph:** 018 **Reference ID:** 28-018-20141016[**Revision Date:**	Opportunities for land to be utilised for waste management should be built into the preparatory work for Local Plans, to the level appropriate to the local planning authorities planning responsibilities. For example: • suitable previously-developed land, including industrial land, provides opportunities for new waste facilities and priority should be given to reuse of these sites. It is important for waste to be considered alongside other land uses when looking at development opportunities • as reviews of employment land are undertaken, it is important to build in the needs of waste management before releasing land for other development or when considering areas where major regeneration is proposed • the integration of local waste management opportunities in new development should be integral to promoting good urban design • facilitating the co-location of waste sites with end users of waste outputs such as users of fuel, low carbon energy/heat, recyclates and soils.

16 10 2014	
Title: Can Local Plans prescribe specific technologies? **Paragraph:** 019 **Reference ID:** 28-019-20141016 **Revision Date:** 16 10 2014	Local plans should not generally prescribe the waste management techniques or technologies that will be used to deal with specific waste streams in the area. Rather, the Plan should identify the type or types of waste management facility that would be appropriately located on the allocated site or in the allocated area. The government tries not to direct towards one waste technology above any others, when there may be a number of technologies, both existing and developing, that might deliver the same favourable outcome. Circumstances when it may be more appropriate to prescribe a specific technology include: • for those sites that are allocated for facilities larger than just local facilities; • for any facilities to deal with municipal waste where a clear service development strategy is required; • when the site is suitable for only one particular type of waste management facility.
Title: Should significant developments include a waste audit? **Paragraph:** 049 **Reference ID:** 28-049-20141016 **Revision Date:** 16 10 2014	For proposals that are likely to generate significant volumes of waste through the development or operational phases it will be useful to include a waste audit as part of the application. This audit should demonstrate that in both construction and operational phases of a proposed development, waste will be minimised as far as possible and that such waste as is generated will be managed in an appropriate manner in accordance with the Waste Hierarchy. In particular, the waste audit could cover the following: • the anticipated nature and volumes of waste that the development will generate • where appropriate, the steps to be taken to ensure the maximum amount of waste arising from development on previously developed land is incorporated within the new development • the steps to be taken to ensure effective segregation of wastes at source including, as appropriate, the provision of waste sorting, storage, recovery and recycling facilities • any other steps to be taken to manage the waste that cannot be incorporated within the new development or that arises once development is complete. Before granting planning permission, the local planning authority will need to be satisfied that the impacts of non-waste development on existing waste management facilities are acceptable and do not prejudice the implementation of the Waste Hierarchy. Where appropriate, the local planning authority may require additional waste management measures in order to facilitate the movement of waste management up the Hierarchy. In addition, the potential impacts from noise, vibration, artificial light, dust and odour must be properly considered for any proposed site.
Renewable and Low Carbon Energy	
Title: How can decentralised energy opportunities be identified?	There is an important contribution to be made by planning that is independent of the contribution from other regimes such as building regulations. For example, getting the right land uses in the right place can underpin the success of a district heating scheme. Similarly, planning can influence opportunities for recovering and using waste heat from industrial installations.

Paragraph: 009 **Reference ID:** 5-009-20140306 **Revision Date:** 06 03 2014	Planning can provide opportunities for, and encourage energy development which will produce waste heat, to be located close to existing or potential users of the heat. Planning can also help provide the new customers for the heat by encouraging development which could make use of the heat. Information on local heat demand is published by the Department of Energy and Climate Change to assist planners and developers in identifying locations with opportunities for heat supply. See the national heat map and the UK combined heat and power (CHP) development map. This information will be supplemented in future by further work, including detailed mapping, on the potential for combined heat and power and district heating and cooling. View the National Planning Policy Framework definition of 'decentralised energy'.

National Waste Management Plan

Policy / paragraph reference	Policy and paragraph text
The Waste Hierarchy	In England, the waste hierarchy is both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011. The hierarchy gives top priority to waste prevention, followed by preparing for reuse, then recycling, other types of recovery (including energy recovery), and last of all disposal (e.g. landfill). The dividends of applying the waste hierarchy will not just be environmental. We can save money by making products with fewer natural resources, and we can reduce the costs of waste treatment and disposal. The 2011 Regulations require everyone involved in waste management and waste producers in England to take, on the transfer of waste, all reasonable measures to apply the waste hierarchy except where, for specific waste streams, departing from the hierarchy is justified by lifecycle thinking on the overall effects of generating and managing the waste. Regulators under the Environmental Permitting (England and Wales) Regulations 201013 must exercise functions (such as granting environmental permits) for the purpose of ensuring that the waste hierarchy is applied to the generation of waste by a waste operation. To aid people to apply the waste hierarchy, Defra has produced guidance on its application. Prevention The Government's aim is to reduce the amount of waste produced across the economy whilst supporting economic growth. We measure the total amount of raw materials used and waste produced alongside the commercial, industrial and household waste produced per unit of Gross Value Added (GVA). This shows how quickly we are moving along a pathway to a zero waste economy. Although information on waste arisings is available for England,

	information on use of materials is currently only available at a UK level. The most current statistics (2010) providing this information can be found at: https://www.gov.uk/government/organisations/department-for-environment-food-ruralaffairs/series/waste-and-recycling-statistics We have developed a Waste Prevention Programme for England15 to continue the progress towards a zero waste economy by setting out detailed actions to: • encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services, • encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, to use products for longer, repair broken items, and enable reuse of items by others, • help businesses recognise and act upon potential savings through better resource efficiency and preventing waste, to realise opportunities for growth; and • support action by central and local government, businesses and civil society to capitalise on these opportunities. Preparing for Re-use Government is currently developing re-use and repair policies alongside the development of the waste prevention programme. The Government's Call for Evidence for the Waste Prevention Programme provided information on current reuse, remanufacture and repair activities in England. Recycling The most recent statistics show that the rate of recycling for waste from households in England continues to increase, with our current policy measures, towards the EU target of recycling 50% of household waste by 2020. The Government keeps progress towards the targets under review by monitoring actual recycling rates and by modelling future recycling. We are already exceeding the 70% target for recovering construction and demolition waste. Commercial and industrial waste reached a recycling rate of 52% in 2010. This Plan sets out a number of other initiatives that are under way to boost recycling. Other Recovery The Government supports anaerobic digestion (AD) because of its value in dealing with organic waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions associated with its disposal to landfill. AD also recovers energy and produces valuable bio-fertilisers. The Government is committed to increasing the energy from waste produced through AD and has produced, working with industry, a Strategy and Action Plan to tackle the barriers to AD. Two progress reports on the Action Plan have been published.

	The Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled - to deliver environmental benefits, reduce carbon impact and provide economic opportunities. Our aim is to get the most energy out of waste, not to get the most waste into energy recovery. Defra has produced a guide to energy from waste to provide factual information to all of those interested in the development of such facilities including developers, local authorities and local communities. It is for the Environment Agency to determine on a case by case basis whether an application for an environmental permit constitutes a waste recovery or a disposal operation. Inert waste can and should be recovered or recycled whenever possible. However, the disposal of inert waste in or on land i.e. landfill, remains a valid way of restoring quarries and worn out mineral workings where this is a planning requirement. Disposal Landfill or incineration without energy recovery should usually be the last resort for waste, particularly biodegradable waste. (Incineration may be classed as recovery or disposal depending on the circumstances. Our Energy from Waste guide provides further analysis of this issue). The landfill tax is the key driver to divert waste from landfill to ensure that we meet EU targets under the Landfill Directive. That does not mean that all wastes will be diverted from landfill by 2020. There are some wastes for which landfill remains the best or least worst option. The Waste Review 2011 suggested that such materials are likely to include: • some hazardous wastes – such as asbestos; • certain process residues, such as pre-treated industrial wastes from which no further resources can be recovered; and • waste for which the alternatives to landfill are not justified on cost or environmental and resource efficiency grounds.
Assessment of need for new collection schemes and infrastructure/closure of waste infrastructure	Collection infrastructure Local authorities in England are under a legal obligation under the Environmental Protection Act 1990 to provide waste collections to households. From 2003, they have also been under a duty to collect at least two types of recyclable waste separately where they have a duty to collect household waste. From 1 January 2015, local authorities will need to collect waste paper, metal, plastic or glass by way of separate collection where this is necessary to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Waste Framework Directive and to facilitate or improve recovery; and where such separate collection is technically, environmentally and economically practicable. As noted in the section on measures to promote high quality recycling, the Government has also been working with local authorities to increase the frequency and quality of waste collections, make it easier to recycle and to encourage reward schemes to increase recycling. In November 2012, the Department for Communities and Local Government made available £250m

	under its Weekly Collections Support Scheme. The Department is providing funding for 82 councils committed to retaining or reinstating weekly collections of residual waste for residents. In nearly all cases, successful bids propose delivering enhanced recycling services, making it easier for residents to recycle. All successful bids will deliver environmental benefits. The Department for Communities and Local Government will continue to encourage weekly collections of residual waste in the coming years. Within England, local authorities assess the need for any changes to collection arrangements that best fit their local circumstances and meet the legal obligations to collect waste set out above. At national level, the Waste and Resources Action Programme assesses the performance of local authority collection arrangements in terms of yields of residual waste and of dry recyclables47. This work will help to inform future decisions on collection schemes that are needed to help the UK meet its obligations under the Waste Framework Directive. Technologies for managing residual waste The 2011 Waste Review set out the Government's support towards efficient energy recovery from residual waste which can deliver environmental benefits, reduce carbon impacts and provide economic opportunities. The Government aims to obtain the most energy from waste, not to get the most waste into energy recovery. To achieve this Government will ensure the right incentives are in place to develop this industry. The Government does not express a preference for one technology over another, since local circumstances differ. Any given technology is more beneficial if both heat and electricity can be recovered. Particular attention should therefore be given to the location of the plant to maximise opportunities for heat use. Waste management technologies are still being devised to treat society's residual waste which cannot sustainably be recycled. While some technologies such as large-scale incineration are well established, others such as gasification are less developed or still at the pre-deployment stage. Those making investment decisions should consider the information in the public domain, such as the Government's guidance on energy from waste.

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 4. London's Economy	
Policy 4.4: Managing industrial land and premises	LDF preparation B LDFs should demonstrate how the borough stock of industrial land and premises in strategic industrial locations (Policy 2.17), locally significant industrial sites and other industrial sites will be planned and managed in local circumstances in line with this strategic policy and the location strategy in Chapter 2, taking account of: • d the need for strategic and local provision for waste management, transport facilities (including inter-modal freight interchanges),

	logistics and wholesale markets within London and the wider city region; and to accommodate demand for workspace for small and medium sized enterprises and for new and emerging industrial sectors including the need to identify sufficient capacity for renewable energy generation
Chapter 5. London's Response to Climate Change	
Policy 5.3 Sustainable Design and Construction	C Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • c efficient use of natural resources (including water), including making the most of natural systems both within and around buildings • e minimising the generation of waste and maximising reuse or recycling
Policy 5.4 Retrofitting	Strategic A The environmental impact of existing urban areas should be reduced through policies and programmes that bring existing buildings up to the Mayor's standards on sustainable design and construction. In particular, programmes should reduce carbon dioxide emissions, improve the efficiency of resource use (such as water) and minimise the generation of pollution and waste from existing building stock. LDF preparation B Within LDFs boroughs should develop policies and proposals regarding the sustainable retrofitting of existing buildings. In particular they should identify opportunities for reducing carbon dioxide emissions from the existing building stock by identifying potential synergies between new developments and existing buildings through the retrofitting of energy efficiency measures, decentralised energy and renewable energy opportunities (see Policies 5.5 and 5.7).
Policy 5.5 Decentralised Energy Networks	Within LDFs boroughs should develop policies and proposals to identify and establish decentralised energy network opportunities. Boroughs may choose to develop this as a supplementary planning document and work jointly with neighbouring boroughs to realise wider decentralised energy network opportunities. As a minimum boroughs should: • c develop energy master plans for specific decentralised energy opportunities which identify: o possible opportunities to utilise energy from waste
Policy 5.8: Innovative Energy Technologies	Strategic A The Mayor supports and encourages the more widespread use of innovative energy technologies to reduce use of fossil fuels and carbon dioxide emissions. In particular the Mayor will seek to work with boroughs and other partners in this respect, for example by stimulating: • a the uptake of electric and hydrogen fuel cell vehicles • b hydrogen supply and distribution infrastructure • c the uptake of advanced conversion technologies such as anaerobic digestion, gasification and pyrolysis for the treatment of waste. LDF preparation B Within LDFs boroughs may wish to develop more detailed policies and proposals to support the use of alternative energy technologies (particularly in infrastructure and masterplanning opportunities).
Policy 5.16	A The Mayor will work with London boroughs and waste authorities, the

Waste Net Self-Sufficiency	London Waste and Recycling Board (LWaRB), the Environment Agency, the private sector, voluntary and community sector groups, and neighbouring regions and authorities to: • a manage as much of London's waste within London as practicable, working towards managing the equivalent of 100% of London's waste within London by 2026 • b create positive environmental and economic impacts from waste processing • c work towards zero biodegradable or recyclable waste to landfill by 2026. B This will be achieved by: • a minimising waste • b encouraging the reuse of and reduction in the use of materials • c exceeding recycling/composting levels in local authority collected waste (LACW) of 45 per cent by 2015, 50 per cent by 2020 and aspiring to achieve 60 per cent by 2031 • d exceeding recycling/composting levels in commercial and industrial waste of 70 per cent by 2020 • e exceeding recycling and reuse levels in construction, excavation and demolition (CE&D) waste of 95 per cent by 2020 • f improving London's net self-sufficiency through reducing the proportion of waste exported from the capital over time • g working with neighbouring regional and district authorities to coordinate strategic waste management across the greater south east of England.
Chapter 6: Transport	
Policy 6.11 Smoothing Traffic Flow and Tackling Congestion	LDF Preparation B DPDs should develop an integrated package of measures drawn from the following: • promoting and encouraging car sharing and car clubs
Chapter 7: London's Living Spaces and Places	
Policy 7.22 Land for Food	Strategic A The Mayor will seek to encourage and support thriving farming and land-based sectors in London, particularly in the Green Belt. B Use of land for growing food will be encouraged nearer to urban communities via such mechanisms as 'Capital Growth'. LDF preparation C Boroughs should protect existing allotments. They should identify other potential spaces that could be used for commercial food production or for community gardening, including for allotments and orchards. Particularly in inner and central London innovative approaches to the provision of spaces may need to be followed, these could include the use of green roofs.

Draft London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 1 Planning London's Future	

Policy GG6 Increasing efficiency and resilience	To help London become a more efficient and resilient city, those involved in planning and development must: A Seek to improve energy efficiency and support the move towards a low carbon circular economy, contributing towards London becoming a zero carbon city by 2050.
Chapter 8 Green Infrastructure and Natural Environment	
Policy G8 Food Growing	A In Development Plans, boroughs should: 1) protect existing allotments and encourage provision of space for community gardening, including for food growing, within new developments 2) identify potential sites that could be used for commercial food production.
Chapter 9 Social Infrastructure	
Policy SI3 Energy infrastructure	B Energy masterplans should be developed for large-scale development locations which establish the most effective energy supply options. Energy masterplans should identify: 4) possible opportunities to utilise energy from waste
Policy SI7 Reducing waste and supporting the circular economy	A Waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by: 1) promoting 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) encouraging waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products 3) ensuring that there is zero biodegradable or recyclable waste to landfill by 2026 4) meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon energy in London from suitable remaining waste: a) municipal waste – 65 per cent by 2030 b) construction, demolition and excavation waste – 95 per cent by 2020 5) designing developments with adequate and easily accessible storage space that supports the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food. 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 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 to support recycling and re-use 5) how much waste the proposal is expected to generate, and how and where the waste will be handled.
Policy SI8 Waste capacity and net waste self-sufficiency	B Development Plans should: 1) identify how waste will be reduced, in line with the principles of the Circular Economy and how remaining quantums of waste will be managed

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	Policy and paragraph text
Mayor's Priority: Efficient Energy Supply	Where opportunities arise, developers generating energy or waste heat should maximise long term carbon dioxide savings by feeding the decentralised energy network with low or zero carbon hot, and where required, cold water.
Materials and Waste – Construction Phase: Mayors Priority	Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy.
Materials and Waste – Occupation Phase: Mayors Priority	Developers should provide sufficient internal space for the storage of recyclable and compostable materials and waste in their schemes. The design of development should meet borough requirements for the size and location of recycling, composting and refuse storage and its removal.
2.2.28 – 2.2.34	2.28 The Mayor's Capital Growth programme has shown the potential for growing food locally in London with the associated health and community benefits that it can bring. Local food growing can encompass a range of activities including back garden food growing, roof top gardening, education and health gardens, allotment cultivation, community gardening projects, bee keeping, planting orchards and fruit trees on public land, city farms, urban fringe farms and market gardens. 2.2.29 Even in commercial schemes, lower maintenance herbs and other edible plants have been incorporated into roof gardens or landscaping schemes. 2.2.30 In certain circumstance the non-active parts of large construction sites have been used for food growing with temporary growing containers and skips brought on-site. It is essential that growers are certain the land used for growing is not contaminated. See section 4.2 for further details on land contamination. 2.2.31 Prior to designing a scheme's landscape or green infrastructure plan developers should investigate the demand and opportunities for providing food growing space on their site. Developers should contact the relevant borough and Capital Growth to determine whether there is demand for food growing space in the vicinity of the application site. Where opportunities arise, especially where there is an organisation willing to manage and maintain the space, food growing space should be secured through the planning application process. For phased schemes this can be temporary growing space until that area of the site is developed or permanent space provided on the final developed site. 2.2.32 Where boroughs are aware of a demand for food growing space they can secure landscape designs within developments that provide flexible open spaces which may be adapted for food growing to be undertaken in the future, should there be demand from the local community. Consideration at the design stage will include:

	• safeguarding south facing spaces; • the availability of water, incorporating rain water harvesting ; • the loading capacity of green roofs and balconies; • planting walls with espaliers or climbing plants; • integrating edible plants with ornamental plants; • proving planters that can be easily converted for food growing; and • management. 2.2.33 Where provided, it may be appropriate to secure (through condition or s106 agreement) the identified space for food growing, as opposed to wider open space uses. 2.2.34 In addition to food growing, urban agriculture can provide non-food products. For example, the urban forest can produce not only food but other products such as wood and beansticks for allotments/ gardens.
2.4.26	In accordance with London Plan policy 5.6, where a development consists of several buildings, each building should be served by communal heating and a site wide heating network should be considered and established, where appropriate. In addition to the strategic advantages of being able to connect to a district heating either immediately or in the future. The main benefit of district heating in the longer term is expected to be the carbon savings they can deliver by accessing sources of waste heat e.g. industrial waste heat, heat generated from municipal waste, etc. As such, communal heating schemes on individual sites are not installed to achieve carbon dioxide savings compared to individual boilers in the short term, but to maintain the ability of buildings to be supplied by low carbon, waste heat sources in the future.
2.4.30	Energy from waste and heat sources Every opportunity should be taken to utilise waste heat, including from heat rejection equipment or to generate energy and heat from waste. For some types of heat generation mitigation measures may be required to ensure the scheme minimises any harmful effects of emissions into the air. See chapter 4 for more details on protecting air quality.
2.7.4 – 2.7.5	Pre-fabrication 2.7.4 The fabrication of elements of a building off-site can reduce the generation of waste due to the controlled manufacturing process. For example, most bathrooms for student housing and for some hotels are constructed off-site and simply installed in their entirety within the development. 2.7.5 Most elements, at varying proportions, of a development can be manufactured off-site. The manufacture and preassembly in controlled conditions and improved accuracy of building elements can significantly reduce the time required to construct a development as well as improve a building's environmental performance. Developers are encouraged to design their schemes to incorporate as many pre-fabricated buildings elements as possible.
2.7.6	Deconstruction 2.7.6 When designing their schemes and selecting materials, developers should consider designing for deconstruction, rather than demolition. Deconstruction is the dismantling of a structure in the reverse order in which it was constructed, which means that the materials that were put on last are removed first. From the outset, new buildings should be designed with the prospect of future deconstruction being implementable.

	This process will facilitate the segregation and extraction of materials that could be carefully removed intact during redevelopment, and then reused/recycled wherever possible.
2.7.8 - 2.7.9	Most development sites have existing materials which can be reused or recycled. Developers should always look for options to sensitively reuse, refurbish, repair and convert buildings, rather than wholesale demolition. This will reduce the amount of resources used and will help reduce construction waste. Where the retention of a building or part of a building is not possible, developers should have measures to reduce the quantity of waste produced – from the demolition phase through to the construction phase – through the use of the waste hierarchy. More details on the waste hierarchy can be found in paragraphs.
2.7.18	Demolition material 2.7.18 Where the demolition of a building cannot be avoided developers should either reuse materials on-site or salvage appropriate materials to enable their reuse or recycling off-site. Where materials cannot be salvaged whole, and where aggregate is required on-site, this demolished material should be crushed on-site for reuse, with measures taken to minimise dust and noise. See the waste hierarchy below and the Mayor's SPG on The control of dust and emissions during construction and demolition.
2.7.19 – 2.7.25	The Waste Hierarchy 2.7.19 The 'waste hierarchy' ranks the different ways in which waste can be treated so that it limits the amount of resources used and waste generated. Developers should maximise the (re)use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation the following waste hierarchy: i Reduce; ii Reuse (prioritise on-site reuse of demolition materials, followed by offsite reuse); iii Recycle (prioritise on-site recycling, then off-site recycling); iv Resource recovery (for energy generation processes – fuels, heat and power); and v Disposal. 2.7.20 In line with the waste hierarchy, when selecting materials, the preferred approach should be: i the use of reclaimed materials; ii the use of materials with higher levels of recycled content; and iii the use of new materials. i Reduce 2.7.21 Reducing waste, which is at the top of the waste hierarchy, should be developers' preferred option. This means, it is better to prevent waste being produced in the first place rather than to recycle or dispose of waste that is produced. Developers should focus on opportunities for waste reduction from the outset, at the earliest stages of design, as well as through better methods of purchasing and ways of working, for example by purchasing pre-used materials and monitoring over-supply to better inform future procurement of materials. 2.7.22 Where demolition is necessary, developers are encouraged to: • safely remove the most valuable or more contaminating materials and fittings for later reuse or processing before work commences;

	• optimise the reuse and recycling of demolition materials. Developers are encouraged to use the Demolition Protocol where substantial demolition is proposed (over 1,000 square meters). In general the protocol is a 'demolition waste audit' - a process that describes the percentage of the materials present on a site which can be reused/recycled (either in the development site or one nearby); • demonstrate that the most significant opportunities to increase the value of materials derived from recycled and reused content have been considered. A good way of achieving this aim at no additional construction cost is to use the Waste and Resources Action Programme (WRAP)49 by selecting the top ten WRAP Quick Wins or equivalent, and implement the good practice guidance; • to produce Site Waste Management Plans50 (SWMP) A Site Waste Management Plan can provide a framework for managing waste in line with the hierarchy by identifying types and quantities of materials for reuse/recycling to reduce the amount of waste produced by construction projects. For further guidance see the WRAP NetWaste tool which has a site waste management plan function; • design for deconstruction (as explained above); and • incorporate a 'material salvage phase', in which construction and surplus materials are recovered from the site. Additionally, materials should be segregated into categories, e.g. timber waste, metal waste, concrete waste and general waste – to aid reuse or recycling. ii Reuse 2.7.23 Once the demand for building materials has been reduced developers should reuse and prepare for the reuse of materials, either on-site/off-site. This can be done during the design, procurement and construction phases of a development by, for example: • identifying and segregating materials already on-site for reuse in the new development. Materials that can potentially be reused include: ◊ bricks, concrete, ◊ internal features – historic fireplaces, timber floorboards, doors, ◊ metal frames, plastics, granite, and ◊ sub-soil, top soil; • using the BRE Smart Waste management plan tool. This is an online template contractors can use to input data on the amount and type of waste and have it sorted by the management tool; and • making the materials not (re)used on-site available for reuse elsewhere. Consider the exchange/sale/donation of construction site materials to waste recovery businesses, such as: BRE Materials Information Exchange; waste exchanges such as recipro52 or the waste change.com53 etc. These specialists can sort, clean, repair and refurbish the waste materials and then find businesses that can reuse/ recycle them. iii Recycling 2.7.24 Recycling materials (either on-site/offsite), is the preferable solution only when waste minimisation 'reduce' or reuse are not feasible. The recycling of materials enables them to be made into something new. Every opportunity should be taken to recycle materials in the most cost and carbon dioxide efficient way. This can be done by, for example: • identifying and segregating materials to promote closed loop recycling where materials are recycled back into the same material (for example

	recycling glass back into glass containers instead of aggregate.) This includes: ◊ metals and high value materials, ◊ timber, plasterboard, packaging, and ◊ concrete crushed and re-used for concrete aggregate; • using the BRE Smart Waste www.smartwaste.co.uk mentioned above; • considering 'take-back' schemes with suppliers for materials and packaging. This where suppliers take back any materials not used as well as any packaging the materials are delivered in; and • making materials not reused onsite available for reuse elsewhere, as discussed above. iv & v Other Recovery and Disposal 2.7.25 Disposal is the least preferred waste management approach. Developers should only consider disposal of materials and waste after all of the above approaches have been carried out. Disposal generally involves burying the materials in a landfill. Waste materials from construction and demolition activities are generally not suitable for energy generation. Where landfill is the only option for the materials developers should: • identify materials that are contaminated and cannot be reused or recycled and arrange for their safe and legal disposal by the authorised waste management; • remove all toxic and hazardous materials from a development site in accordance with any relevant legislation, unless they are integral to the structure or a feature to be retained, and any harm to environmental or public health should be mitigated; or • limit waste disposal to minimise the amount of land fill tax that needs to be paid.
2.7.27 – 2.2.28	Storage for recyclables, organic material and waste 2.7.27 Developers must ensure sufficient internal and external space is provided to facilitate recycling and composting and the good management of waste. Borough's have requirements for the storage of recyclable, organic material and waste in accordance with the local collection provision. The design of waste storage should be considered early in the design process and should ensure it is as convenient to recycle as it is to manage waste . It should be noted that from 2015, it likely additional space for the storage of recyclable materials will be required as local authorities will be required to collect various recyclable materials separately. 2.7.28 In all developments the location of external storage areas should consider the noise generated from the frequency of use of this area and its servicing as well as the requirements of the serving operator to pick up the materials. This is especially important in dense mixed use areas with residential occupiers as commercial recycling and waste services may occur at night.
2.3.3	Reuse of existing building 2.3.3 Existing buildings have a significant amount of embodied carbon. In addition, the construction of new buildings is a major consumer of resources and can produce large quantities of waste and carbon dioxide emissions as well as contribute towards poor air quality. Developers should carefully consider the potential to retain existing buildings, including through their conversion, refurbishment and extension. Where possible, sustainable measures should be retrofitted into existing buildings. Where the demolition

	of a building cannot be avoided the resulting materials should be reused or salvaged in accordance with the waste hierarchy. See section 2.6 for more details. Measures to minimise air pollution during the demolition and construction process in accordance with the Mayor's SPG on The Control of Dust and Emissions during Construction and Demolition should also be implemented.

West London Waste Plan

Policy/ paragraph reference	**Policy and paragraph text**
Policy WLWP 5 – Decentralised Energy	All waste management facilities that are capable of directly producing energy or a fuel must secure, where reasonably practicable: • The local use of any excess heat in either an existing heat network or through the creation of a new network; • The use of biogas/syngas in Combined Heat and Power facilities, either directly through piped supply or indirectly through pressurisation and transport; • The use of any solid recovered fuel in Combined Heat and Power facilities or as a direct replacement for fossil fuels in London; or • Any other contribution to decentralised energy in London. Where it is demonstrated that the provision of decentralised energy is not economically feasible or technically practicable, the development shall not preclude the future implementation of such systems. Energy from Waste facilities will only be considered where it can be demonstrated that they qualify as a recovery operation as defined in the Waste Framework Directive. Proposals for Energy from Waste should demonstrate that they will not compromise the management of waste in accordance with the waste hierarchy requirement of the Waste Framework Directive.
Policy WLWP 6 – Sustainable Site Waste Management	To encourage sustainable waste management, waste management developments will be permitted where it can be demonstrated that: a. At least 10% of the materials or products used in the construction and operation of the development are re-used or recycled and sourced from within 100km from the site; b. Construction, demolition and excavation wastes are minimised and then reused or recycled on site, where practicable and environmentally acceptable; c. Site Waste Management Plans are comprehensive and capable of being delivered; and d. Where on-site management of waste is not possible, active consideration has been given to the transportation of construction, demolition and excavation wastes away from the site by modes other than road, principally by water and rail and this has been incorporated into the scheme or proven not to be practicable.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle E2	Proposals should: a. Continue to protect waste sites in Park Royal as set out in the West London Waste Plan, as adopted by OPDC in July 2015; b. Investigate the potential for the relocation of existing waste sites from Old Oak to Park Royal and wider; c. Support London's transition to the circular economy to turn London's waste into an economic opportunity and become 100% net waste self-sufficient d. Investigate the potential for integrating waste sites in Old Oak delivering benefits in the form of jobs, new materials and low carbon heat and power; and e. Demonstrate innovative waste and recycling management and collection processes to help boost London's recycling rate.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	Alternative policy option
	None considered. Policy EU7 has been produced in response to new evidence base documents prepared following the Regulation 18 consultation, including the Circular and Sharing Economy Study, and the Environmental Standards Study. As such, policy options were not included in the Regulation 18 Draft Local Plan. The Regulation 18 Draft Local Plan did include a Policy on the Circular economy and resource efficiency (EU5), though the contents of that policy have now been incorporated in Policy EU6 Waste.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Circular economy: There was general support for the inclusion of a circular economy policy and OPDC's development of a Circular Economy Strategy in support of the next draft Local Plan. Requests were made to ensure that the principles	London Sustainable Development Commission WRc, Old Oak Park (DP9), Surrey County Council, London Waste Planning Forum	Change proposed. OPDC has produced a Circular and Sharing Economy Strategy. The recommendations from this have been appropriately embedded into the Local Plan. Policy EU7 deals directly with the circular and sharing economy and

arising from the strategy are embedded in the next draft Local Plan.		requires major development proposals to submit a Circular and Sharing Economy Statement demonstrating how proposals will support the circular and sharing economy through redevelopment in the area.
Clearer policies: Policies need to be drafted in a way that they are clear what the requirements are during and post construction and across time, recognising that policies and standards should become more binding in the medium and long term	Grand Union Alliance, London Sustainable Development Commission	Noted. Policies in the Local Plan need to be drafted work now and in the future. The Local Plan is a 20 year Plan and to ensure its deliverability, officers have ensured that the policies and standards it contains are resilient and fit for purpose for the full lifetime of the Plan. Construction impacts are dealt with in Policy T8 in the transport chapter and through a series of policies in the Environment and Utilities chapter, specifically EU2 (urban greening), EU4 (air quality), EU5 (noise and vibration), EU6 (waste), EU7 (circular and sharing economy), EU8 (sustainable materials) and EU13 (land contamination). Impacts post-construction are also dealt with through these and other policies in the environment and utilities chapter.

Regulation 19 (1) consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
LWARB strongly support the inclusion of a policy devoted to the circular economy in the Local Plan.	LWARB	Noted

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Strongly support the requirement for a circular and sharing economy statement and see OPDC as leading the way. LWARB would like to support development of circular economy SPG.	LWARB, Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted
Support recognition that circular economy offers opportunity to support growth and innovation in Park Royal.	LWARB	Noted.
Fully support Policy EU7 on the Circular and Sharing Economy	North London Waste Plan	Noted
Policy is potentially too onerous and beyond what is required of development elesewhere in London and will restrict development at Old Oak. Sustainability policies should be proportionate and appropriate when viewed alongside other requirements.	Old Oak Park Ltd	No change proposed. OPDC considers that resource utilisation is a major issue that concerns large scale regeneration projects. The requirement for a Circular Economy Statement is now also a requirement in the new draft London Plan. Finding ways to minimise resource use and waste and increase reuse and resource recovery over the life of the project will help reduce the embodied carbon impacts of the development. Further it supports the mayor's London Environment Strategy aspirations, efficient use of buildings, support for circular economy initiatives, waste management and clean tech employment targets. The London Plan and the London Environment Strategy requires OPDC to take a lead in promoting best practice in sustainable regeneration including in resource management. Waste and materials use are major issues in the construction sector and leading construction companies are starting to establish circular economy and resource efficient strategies that support this policy.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Support circular economy recommendations and opportunities, and would like to work with OPDC to capitalise on the opportunities that exist in Park Royal to establish the area as a leader in this area.	Park Royal Business Group	Noted. OPDC welcome the opportunity to work with PRBG to promote the circular economy in Park Royal.
lack of monitoring details	Friary Park Preservation Group	No change proposed. Monitoring will be included in the Authority Monitoring Report.
policy lacks clarity or specific requirements and examples	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC believe the policy and supporting study on the circular economy set out clear requirements and provide many examples and opportunities for adoption of the circular economy.
Questions whether EfW is a circular solution	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC believe EfW can be considered a circular solution if carefully and efficiently managed, where careful attention is paid to ensuring only appropriate materials are used, where appropriate technologies to screen, bail and treat the waste are used and heat networks provided to ensure the EfW makes a significant contribution to reduction in carbon emissions. In addition, EfW would not be permitted if it impacts inappropriately on air quality. As a matter of principle, OPDC promote the adoption of the waste hierarchy and encourage waste to be recycled as high up the hierarchy as possible in line with the existing and draft London Plan policy (2017).

Regulation 19 (2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
The policy is onerous, is beyond what is required elsewhere in London or nationally, and not appropriate for inclusion in a Local Plan. Sustainability policies should be proportionate	Old Oak Park Limited	Noted. See response to comment EU7/5 from the first regulation 19 draft Local Plan.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
and appropriate when viewed alongside other requirements.		
Support approach to the circular economy.	Environment Agency	Noted.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
OPDC Circular and Sharing Economy Study	• Target key sectors including food, logistics, clean technology, the sharing economy and smart technology. • Adopt CSE approaches to design of infrastructure development including for example in looking at clean and low carbon sources of energy, water and waste and infrastructure that supports reuse of those resources • Embed CSE requirements into policy as far as possible
Waste Apportionment Study	• The Local Plan should promote energy from waste to support the delivery of OPDC's strategic district heating network.
Waste Management Strategy	• Adopt designing out waste principles during design, procurement, construction and deconstruction • Require contractors to develop detailed strategies for construction, demolition and excavation waste • Segregate waste during construction by type to maximise waste • recovery. Coordinate segregation and recovery with waste management companies and keep as much waste within the area as possible for reuse • Engage the public to minimise waste from operational phase through campaigns and other means • Provide waste segregation facilities to stream waste and facilitate recycling • Ensure that best practice standards are used for waste storage and collection and work with estate management teams to optimise collection regimes • Use Anaerobic Digestion and other technologies to treat organic waste and separate wet waste from other waste • Promote community sharing platforms to encourage reuse and repair centres • Adopt automated waste collection systems where viable • Establish an industrial symbiosis platform that supports business to business systems to utilise waste as a resource
Environmental Standards Study	Energy from waste • OPDC will work with developers, waste management service providers, Park Royal industrial businesses and the utility regulators

	to support development of onsite energy from waste (EfW) / Anaerobic Digestion (AD) facilities capable of handling existing and potential waste streams from both Park Royal and Old Oak. Facilities with smaller scale waste inputs and energy outputs will be preferred, to support flexibility and scalability in connecting EfW / AD plant to the onsite heating / cooling network.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
OPDC Circular and Sharing Economy Study	• To develop initiatives that will promote CSE in construction and operational phases of the project wide scale buy in from developers and businesses is required. OPDC should establish a team to work to secure support. • Adopt innovation in CSE in building design for example in design for disassembly and adaptation. • Work with West London Business and Park Royal Business Group to promote circular economy. • Embed CSE objectives into procurement policy • Work with the GLA, LWARB and Central Government to promote CE • Establish clear objectives and targets for CSE on projects especially on development that is either funded or is developed on public land • Look at ways to capture and include the value (economic, social and environmental) that CE delivers over the long term in assessing development. • Support investment in business and innovation in the CSE in the OPDC area especially in Park Royal	• Recommendations are supported by OPDC and will form part of the organisations wider corporate objectives but are not considered appropriate for Local Plan policy. Some details may be included in future SPDs.

EU8: Sustainable Materials

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Paragraph Reference	Paragraph
143	In preparing Local Plans, local planning authorities should so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials;
163	Minerals planning authorities should work with other relevant organisations to use the best available information to: • assess the projected demand for their use, taking full account of opportunities to use materials from secondary and other sources which could provide suitable alternatives to primary materials.

National Planning Practice Guidance (NPPG)

Paragraph Reference	Paragraph
Design	
Title: Planning should promote efficient use of natural resources **Paragraph:** 013 **Reference ID:** 26-013-20140306 **Revision Date:** 06 03 2014	The structure, layout and design of places can help reduce their resource requirements in terms of energy demands, water and land take, and help to sustain natural ecosystems Having a mix of uses and facilities within a neighbourhood can reduce travel demand and energy demands. Ensuring a place is durable and adaptable will help make it less resource hungry over time. For example the layout of infrastructure servicing development (including water supply, sewerage, drainage, gas, electricity, cable, telephone, roads, footpaths, cycle ways and parks) should take account of foreseeable changes in demand to reduce the need for expensive future changes. The layout and design of buildings and planting can reduce energy and water use and mitigate against flooding, pollution and over heating. Passive solar design is the siting and design of buildings to maximise the use of the sun's energy for heating and cooling. Passive solar design takes advantage of natural characteristics in building materials and air to help reduce the additional energy needed for heating and cooling. Policies can encourage sites to be planned to permit good solar access to as many buildings as possible. The potential benefits of passive solar design can only be realised by careful siting and layout. For example, access roads could predominantly run east-west, with local distributors running north-south and glazing minimised on north facing elevations to reduce heat loss.

	Passive solar design principles can be applied equally effectively in housing and commercial developments. It is important that passive design considers the potential for overheating in the summer, as well as reducing need for heating in the winter. A range of design solutions can be considered to help avoid overheating and the need for air conditioning. For example, high levels of thermal mass, maximising natural ventilation, passive cooling using planting for shade, roof overhangs to provide shade for high-sun angles, and smart glazing materials. The urban heat island effect can be reduced by, for example, allowing sufficient space between buildings, tree planting, shading and street layouts which encourage air flow and using light and reflective surfaces or vegetation on buildings.
Title: Consider Materials **Paragraph:** 028 **Reference ID:** 26-013-20140306 **Revision Date:** 06 03 2014	Materials should be practical, durable, affordable and attractive. Choosing the right materials can greatly help new development to fit harmoniously with its surroundings. They may not have to match, but colour, texture, grain and reflectivity can all support harmony. There are a wide range of building and open space materials available and more products developed all the time. Innovative construction materials and techniques can help to achieve well designed homes and other buildings. This could include offsite construction and manufacturing which can help to deliver energy efficient and durable buildings more quickly. Although materials and building techniques may not be specified before planning permission is granted, the functions they will be expected to perform should be clear early on.

London Plan (2016) Policies

Paragraph Reference	**Paragraph**
Chapter 5. London's Response to Climate Change	
5.3 Sustainable Design and Construction	Planning Decisions Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • minimising the generation of waste and maximising reuse or recycling • securing sustainable procurement of materials, using local supplies where feasible,
5.9 Overheating and Cooling	Planning Decisions Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible. Further details and guidance regarding overheating and cooling are outlined in the London Climate Change Adaptation Strategy. LDF preparation D Within LDFs boroughs should develop more detailed policies and proposals to support the avoidance of overheating and to support the

	cooling hierarchy.

Draft London Plan (2017) Policies

Paragraph Reference	Paragraph
Chapter 4 Design	
Policy D1 London's form and characteristics	B Development design should: 2) be of high quality, with architecture that pays attention to detail, and gives thorough consideration to the practicality of use, flexibility, safety and building lifespan, through appropriate construction
Chapter 9 Sustainable Infrastructure	
Policy SI4 Managing heat risk	A Development proposals should minimise internal heat gain and the impacts of the urban heat island through design, layout, orientation and materials.
Policy SI7 Reducing waste and supporting the circular economy	A Waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by: 1) promoting 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) encouraging waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products 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 enable building materials, components and products to be disassembled and re-used at the end of their useful life
Policy SI8 Waste capacity and net waste self-sufficiency	A In order to manage London's waste sustainably: 5) environmental, social and economic benefits from waste and secondary materials management should be created. C The following are particularly encouraged – development proposals which: 2) support prolonged product life and production of secondary materials including repair, refurbishment and remanufacture

Sustainable Design and Construction SPG (2014)

Paragraph Reference	Paragraph
Materials and Waste	
Mayor's Priority: Materials and Waste	The design of development should prioritise materials that: • have a low embodied energy, including those that can be reused intact or recycled; o at least three of the key elements of the building envelope (external walls,

	• windows roof, upper floor slabs, internal walls, floor finishes / coverings) are to achieve a rating of A+ to D in the BRE's The Green Guide of specification; • can be sustainably sourced; o at least 50% of timber and timber products should be sourced from accredited Forest Stewardship Council (FSC) or Programme for the Endorsement of forestry Certification (PEFC) source; • are durable to cater for their level of use and exposure; and • will not release toxins into the internal and external environment, including • those that deplete stratospheric ozone.
Mayors Priority: Construction Phase	Developers should maximise the use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy
2.3.3	Reuse of existing building Existing buildings have a significant amount of embodied carbon. In addition, the construction of new buildings is a major consumer of resources and can produce large quantities of waste and carbon dioxide emissions as well as contribute towards poor air quality. Developers should carefully consider the potential to retain existing buildings, including through their conversion, refurbishment and extension. Where possible, sustainable measures should be retrofitted into existing buildings. Where the demolition of a building cannot be avoided the resulting materials should be reused or salvaged in accordance with the waste hierarchy. See section 2.6 for more details. Measures to minimise air pollution during the demolition and construction process in accordance with the Mayor's SPG on The Control of Dust and Emissions during Construction and Demolition should also be implemented.
2.3.8	Other effects buildings can have on the local climate include: • overshadowing and reducing access to sunlight; • making it warmer, either through the heat released from any operating plant or from the materials forming the building as they cool down at night. This contributes to the urban heat island effect which is a particular issue in central London. Sections 3.2 and 3.3 provide some guidance on how to minimise the urban heat island effect; and • making it cooler through the effects of including vegetation or water
2.7.7	Developers can limit the environmental impact of their developments by selecting construction materials that are the least resource intensive, in both their composition and manufacturing process. This can be achieved through the sustainable (re)use of existing materials as far as possible before considering introducing new materials. Following are six key ways to achieve these objectives: 1. Managing existing resources; 2. Specifying materials using the Building Research Establishment's Green Guide to Specification; 3. Ensuring that materials are responsibly sourced; 4. Sourcing materials from local sources; 5. Minimising the harmful effects of some materials on human health; and 6. Ensuring that specified materials are robust and sensitive to the building type and age.
2.7.8 2.7.9	Most development sites have existing materials which can be reused or recycled. Developers should always look for options to sensitively reuse, refurbish, repair and convert buildings, rather than wholesale demolition. This

	will reduce the amount of resources used and will help reduce construction waste. Where the retention of a building or part of a building is not possible, developers should have measures to reduce the quantity of waste produced – from the demolition phase through to the construction phase – through the use of the waste hierarchy. More details on the waste hierarchy can be found in paragraphs 2.719 - 2.7.25.
2.7.10	Developers and designers are encouraged to use the BRE Green Guide which provides guidance on how to make the best environmental choices when selecting construction materials and building components. The Green Guide ranks materials and components on an A+ to E rating scale – where A+ represents the best environmental performance / least environmental impact, and E the worst environmental performance / most environmental impact.
2.7.11 2.7.12	Ensuring that materials are responsibly sourced; 2.7.11 Developers and designers should specify materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard. All timber specified should be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) accreditation (which ensures that the harvest of timber and non-timber products maintains the forest's ecology and its long-term viability). The Timber Supply Panel set up to facilitate the use of only sustainable timber during the delivery of the Olympic and para Olympic Games provides an exemplar. http://learninglegacy.london2012.com/documents/pdfs/sustainability/425009-188-timber-aw.pdf 2.7.12 The use of responsible sourcing can contribute towards attaining the BREEAM/Code for Sustainable Homes credits but a clear audit trail will need to be provided to gain these credits. For further guidance on responsible sourcing of materials see http://www.bre.co.uk/
2.7.13	Sourcing materials from local sources Where appropriate developers should choose materials are grown or made locally. Many natural products such as timber, wool insulation, paper insulation can be sourced in or close to London.
2.7.14	Healthy Materials Internally it is recommended that environmentally sensitive (non-toxic) building materials are used and the use of materials or products that produce VOC (volatile organic compounds and formaldehyde) which can affect human health are avoided. The use of 'healthy' material options can contribute towards attaining the BREEAM/Code credits but a clear audit trail will need to be provided to gain these credits.
2.7.15 2.7.16	Robust materials 2.7.15 Materials chosen should be robust, low maintenance and long lasting to suit the location and intended use. 2.7.16 When negotiating the design of schemes, boroughs and developers should consider the above objectives and not specify unsustainable materials. Where less sustainable materials are required, for example for listed buildings or in historic areas, attempts should be made to use reclaimed materials first. Boroughs can secure appropriate materials from developments through BREEAM or Code assessments, where they are required and by referring to the BRE's Green Guide.

2.7.18	Where the demolition of a building cannot be avoided developers should either reuse materials on-site or salvage appropriate materials to enable their reuse or recycling off-site. Where materials cannot be salvaged whole, and where aggregate is required on-site, this demolished material should be crushed on-site for reuse, with measures taken to minimise dust and noise. See the waste hierarchy below and the Mayor's SPG on The control of dust and emissions during construction and demolition.
2.7.23	Once the demand for building materials has been reduced developers should reuse and prepare for the reuse of materials, either on-site/off-site. This can be done during the design, procurement and construction phases of a development by, for example: • identifying and segregating materials already on-site for reuse in the new development. Materials that can potentially be reused include: ◊ bricks, concrete, ◊ internal features – historic fireplaces, timber floorboards, doors, ◊ metal frames, plastics, granite, and ◊ sub-soil, top soil; • using the BRE Smart Waste management plan tool. This is an online template contractors can use to input data on the amount and type of waste and have it sorted by the management tool; and • making the materials not (re)used on-site available for reuse elsewhere. Consider the exchange/sale/donation of construction site materials to waste recovery businesses, such as: BRE Materials Information Exchange; waste exchanges such as recipro or the waste change.com etc. These specialists can sort, clean, repair and refurbish the waste materials and then find businesses that can reuse/ recycle them.
2.7.24	2.7.24 Recycling materials (either on-site/offsite), is the preferable solution only when waste minimisation 'reduce' or reuse are not feasible. The recycling of materials enables them to be made into something new. Every opportunity should be taken to recycle materials in the most cost and carbon dioxide efficient way. This can be done by, for example: • identifying and segregating materials to promote closed loop recycling where materials are recycled back into the same material (for example recycling glass back into glass containers instead of aggregate.) This includes: ◊ metals and high value materials, ◊ timber, plasterboard, packaging, and ◊ concrete crushed and re-used for concrete aggregate; • using the BRE Smart Waste www.smartwaste.co.uk mentioned above; • considering 'take-back' schemes with suppliers for materials and packaging. This where suppliers take back any materials not used as well as any packaging the materials are delivered in; and • making materials not reused onsite available for reuse elsewhere, as discussed above.
3.2.4	Section 2.4 sets out some broad measures on how a development's design can minimise carbon dioxide emissions. To prevent overheating developers should incorporate the following measures, as appropriate, into their schemes: Passive measures: • avoid designing small south facing units; • use materials with a high thermal mass; • use green roofs and green walls to keep the heat out, and keep the building and its surroundings cool; • use materials with high albedo surfaces;

	• locate spaces and uses that need to be cool or that generate heat on the north side of development; • use smaller windows on the south and western elevations with low g-value glazing; • use carefully designed shading measures, including balconies, louvers, internal or external blinds, shutters, trees and vegetation; • design the building and its internal layout to enable passive ventilation, including openable windows, a shallow floor plan, high floor to ceiling heights, the stack effect, a double façade; • minimise internal heat gains by using low energy equipment, including energy efficient lighting and insulating hot water pipes and infrastructure as well as thermal stores; and design in vegetation, including green roofs and walls, and water features for passive cooling.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle E2	Proposals should: a. Continue to protect waste sites in Park Royal as set out in the West London Waste Plan, as adopted by OPDC in July 2015; b. Investigate the potential for the relocation of existing waste sites from Old Oak to Park Royal and wider; c. Support London's transition to the circular economy to turn London's waste into an economic opportunity and become 100% net waste self-sufficient d. Investigate the potential for integrating waste sites in Old Oak delivering benefits in the form of jobs, new materials and low carbon heat and power; and e. Demonstrate innovative waste and recycling management and collection processes to help boost London's recycling rate.

Local Plan Regulation 18 Draft Policy Options

Policy Options were not provided in the Regulation 18 Draft Local Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Policies need to be drafted in a way that they are clear what the requirements are during and post construction and across time, recognising that policies and standards should	Grand Union Alliance, London Sustainable Development Commission	Noted. Policies in the Local Plan need to be drafted work now and in the future. The Local Plan is a 20 year Plan and to ensure its deliverability, officers have ensured that the policies and

become more binding in the medium and long term		standards it contains are resilient and fit for purpose for the full lifetime of the Plan. Construction impacts are dealt with in Policy T8 in the transport chapter and through a series of policies in the Environment and Utilities chapter, specifically EU2 (urban greening), EU4 (air quality), EU5 (noise and vibration), EU6 (waste), EU7 (circular and sharing economy), EU8 (sustainable materials) and EU13 (land contamination).
The policy should have greater referencing to 'embodied carbon'. This is particularly relevant when considering whether an existing building can be converted rather demolished and replaced	Grand Union Alliance, The Hammersmith Society, 1 resident	Change proposed. Embodied carbon is covered in Policy EU8 (sustainable materials)
development should be future proofed to meet the challenge of climate change, flood risk, built and natural environments under pressure, environmental degradation and resource competition	Grand Union Alliance	Noted. The Local plan's environment and utilities chapter sets out a number of policies which aim to ensure that development appropriately minimises carbon emissions, mitigates the impacts of flood risk and makes sustainable use of resources and materials.
Construction Policy T9 only deals with transport aspects of construction; should also deal with other aspects such as sustainable construction and materials	LB H&F	Change proposed. Environment and Utilities policy EU6, EU87 and EU8 deal in detail with construction waste. T8 highlights how OPDC will aim to maximise re-use and recycling of waste and construction materials within the area will reduce transport demands and how with the amount of construction activity planned for the area provides an opportunity for sustainable construction traffic and transport solutions to be adopted.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Sustainability considerations need to be balanced with specific site conditions and viability.	Castlepride Ltd	Noted. This is recognised in Policy DI1.
The use of sustainable materials can only be considered with reference to the need to prioritise compliance with fire safety and other safety critical Building Regs. Amend bullet point (g)	LBHF	No change proposed. OPDC agree that buildings and the choice of materials, components and systems must comply with fire safety and other safety critical Building Regs. OPDC do not consider that this policy in any way challenges that position. The requirement to conform with safety and other building regulations falls outside of planning but reference to fire safety has been made in Policy D4.
Support the policy but need to consider the outcome of the Grenfell public inquiry.	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. Reference has been made to fire safety in policy D4.
Policy fails to address embodied carbon and could adopt approaches used by 6 LAs across the England,	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Policy EU8 e) does seek to address embodied carbon. OPDC will also be developing an Environmental Standards SPD, which will further consider approaches to embodied carbon.
Need to address issue of indoor air quality in policy	Local Resident (Adrian Lafond)	Change proposed. Policy EU8 promotes the use of healthy materials and emphasises the importance of material selection and adequate ventilation for example in promoting good indoor air quality. Minor changes have been made to the supporting text.
Clarify wording in policy h) so that it is clear that 20% of materials should be from recycled or reused content for buildings, and infrastructure and landscape separately.	LWARB	Change proposed. The wording has been amended to make this clear.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Support Policy EU8 (Sustainable Materials).	London Borough of Hammersmith and Fulham	Noted.

Summary of Relevant Evidence Base

OPDC Supporting Study	Recommendation
Environmental Standards Study	*Recycled Materials* • As part of their Sustainable Materials Plan, developers will be required to set out measures for optimising the overall recycled content of materials. In addition to helping to reduce embodied carbon, use of recycled materials also increases overall resource efficiency and reduces waste to landfill. *Sustainably Sourced Materials* • As part of their Sustainable Materials Plan, developers will be required to demonstrate specification of all materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001 Framework Standard for Responsible Sourcing and that operate Environmental Management Systems certified against ISO140019 or EU Eco-Management and Audit Scheme (EMAS) standards, covering all stages of material manufacturing. • All new and retrofit development will be required to ensure all wood used is from FSC / PEFC certified sustainable sources. *Locally sourced materials* • As part of their Sustainable Materials Plan, developers will be required to provide a Local Materials Sourcing Strategy clearly setting out the approach for maximising use of locally sourced materials, i.e. from within or close to London. Where it is proposed to use non-local materials which are available locally, a clear explanation of reasons for this should be set out.
Circular and Sharing Economy Study	OPDC should adopt innovation in the Circular and Sharing Economy in building design for example in design for disassembly and adaptation.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	*Carbon Efficient Materials* • As part of planning applications, developers will be required to develop strategies demonstrating how their proposals comply with the site-wide Carbon Planning and Management Framework (CPMF), which OPDC will use to define and implement	• Recommendations are considered too detailed to justify inclusion as Local Plan policy, but will used to inform future SPDs.

	exemplar zero carbon development at Old Oak and Park Royal (see Carbon Emissions topic section above). The OPDC CPMF will include requirements to ensure data on embodied carbon are collected, monitored and reported. • Developers, utility services providers, associated consultants and contractors, and management services providers will be required to measure, collect, record and submit carbon related data in accordance with the CPMF. The CPMF will cover all phases and stages, from early design through to operation and decommissioning, and include data on embodied carbon emissions as well as operational and 'end-of-life' emissions. • As part of their Sustainable Materials Plan, and also forming part of their CPMF related submission, developers will be required to submit an Embodied Carbon Reduction Strategy clearly setting out the approach to reducing embodied carbon, and measures proposed for quantified reductions to achieve overall embodied carbon reduction targets. • Standardised embodied carbon benchmarks will be used to enable developers to measure performance against embodied carbon targets. *Healthy materials* • As part of their Sustainable Materials Plan, developers will be required to demonstrate compliance with the target of zero toxic materials for all new and retrofit development. A list of proscribed and controlled materials will be developed by OPDC, which all new and retrofit development will be required to comply with. • Use of volatile organic compound (VOC) emitting materials in all new and retrofit development will be required to comply with targets set in the Air Quality topic section above. •	

EU9: Minimising Carbon Emissions and Overheating

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
7	There are three dimensions to sustainable development: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles: • an economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure; • a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and • an environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.
17	Within the overarching roles that the planning system ought to play, a set of core land-use planning principles should underpin both plan-making and decision-taking. These 12 principles are that planning should: • support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);
18	The Government is committed to securing economic growth in order to create jobs and prosperity, building on the country's inherent strengths, and to meeting the twin challenges of global competition and of a low carbon future.
93	Planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.
95	To support the move to a low carbon future, local planning authorities

	should: • plan for new development in locations and ways which reduce greenhouse gas emissions; • actively support energy efficiency improvements to existing buildings; and • when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards.
97	To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should: • have a positive strategy to promote energy from renewable and low carbon sources; • design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts; • consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources; • support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and • identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	**Policy and paragraph text**
Climate Change	
Title: Why is it important for planning to consider climate change? **Paragraph:** 001 **Reference ID:** 6-001-20140306 **Revision Date:** 06 03 2014	In addition to supporting the delivery of appropriately sited green energy, effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases. In doing so, local planning authorities should ensure that protecting the local environment is properly considered alongside the broader issues of protecting the global environment. Planning can also help increase resilience to climate change impact through the location, mix and design of development. Addressing climate change is one of the core land use planning principles which the National Planning Policy Framework expects to underpin both plan-making and decision-taking. To be found sound, Local Plans will need to reflect this principle and enable the delivery of sustainable development in accordance with the policies in the National Planning Policy Framework. These include the requirements for local authorities to adopt proactive strategies to mitigate and adapt to climate change in line with the provisions and objectives of the Climate Change Act 2008, and co-operate to deliver strategic priorities which include climate change.

	In addition to the statutory requirement to take the Framework into account in the preparation of Local Plans, there is a statutory duty on local planning authorities to include policies in their Local Plan designed to tackle climate change and its impacts. This complements the sustainable development duty on plan-makers and the expectation that neighbourhood plans will contribute to the achievement of sustainable development. The National Planning Policy Framework emphasises that responding to climate change is central to the economic, social and environmental dimensions of sustainable development.
Title: What climate change legislation should planners be aware of? **Paragraph:** 002 **Reference ID:** 6-002-20140306 **Revision Date:** 06 03 2014	Section 19(1A) of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to include in their Local Plans "policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change". This will be a consideration when a Local Plan is examined. The Climate Change Act 2008 establishes a legally binding target to reduce the UK's greenhouse gas emissions by at least 80% in 2050 from 1990 levels. To drive progress and set the UK on a pathway towards this target, the Act introduced a system of carbon budgets including a target that the annual equivalent of the carbon budget for the period including 2020 is at least 34% lower than 1990. The Climate Change Act 2008 also requires the government: to assess regularly the risks to the UK of the current and predicted impact of climate change; to set out its climate change adaptation objectives; and to set out its proposals and policies for meeting these objectives. These requirements are fulfilled by the UK climate change risk assessment and the National adaptation programme report respectively, which may provide helpful information for plan-making.
Title: How can the challenges of climate change be addressed through the Local Plan? **Paragraph:** 003 **Reference ID:** 6-003-20140612 **Revision Date:** 12 06 2014	There are many opportunities to integrate climate change mitigation and adaptation objectives into the Local Plan. Sustainability appraisal can be used to help shape appropriate strategies in line with the statutory duty on climate change and ambition in the Climate Change Act 2008. Examples of mitigating climate change by reducing emissions: • Reducing the need to travel and providing for sustainable transport • Providing opportunities for renewable and low carbon energy technologies • Providing opportunities for decentralised energy and heating • Promoting low carbon design approaches to reduce energy consumption in buildings, such as passive solar design. Engaging with appropriate partners, including utility providers, communities, health authorities, regulators and emergency planners, statutory environmental bodies, Local Nature Partnerships, Local Resilience Forums, and climate change partnerships will help to identify relevant local approaches.
Title: How can adaptation and mitigation	When preparing Local Plans and taking planning decisions local planning authorities should pay particular attention to integrating adaptation and mitigation approaches and looking for 'win-win' solutions

approaches be integrated? **Paragraph:** 004 **Reference ID:** 6-004-20140612 **Revision Date:** 12 06 2014	that will support sustainable development. This could be achieved in a variety of ways, for example: • by maximising summer cooling through natural ventilation in buildings and avoiding solar gain; • through district heating networks that include tri-generation (combined cooling, heat and power); or • through the provision of multi-functional green infrastructure, which can reduce urban heat islands, manage flooding and help species adapt to climate change – as well as contributing to a pleasant environment which encourages people to walk and cycle. • Local planning authorities should be aware of and avoid the risk of maladaptation (adaptation that could become more harmful than helpful). For example, designing buildings to maximise solar gain in winter without thinking through the implications for overheating in summer. Sustainability appraisal and, where required, Environmental Impact Assessment, can be useful for testing the integration of mitigation and adaptation measures and the long term implications of decisions.
Title: How can local planning authorities support energy efficiency improvements to existing buildings? **Paragraph:** 008 **Reference ID:** 6-008-20140306 **Revision Date:** 06 03 2014	Where energy efficiency improvements require planning permission local planning authorities should ensure any advice to developers is co-ordinated to ensure consistency between energy, design and heritage matters. Many improvements to homes and other buildings may not require planning permission. Further guidance can be found on the Planning Portal's interactive house and in the When is permission required? Guidance.
Title: What are government's national standards for a building's sustainability and for zero carbon buildings? **Paragraph:** 009 **Reference ID:** 6-009-20150327	The National Planning Policy Framework expects local planning authorities when setting any local requirement for a building's sustainability to do so in a way consistent with the government's zero carbon buildings policy and adopt nationally described standards. Local requirements should form part of a Local Plan following engagement with appropriate partners, and will need to be based on robust and credible evidence and pay careful attention to viability. In this respect, planning authorities will need to take account of government decisions on the Housing Standards Review when considering a local requirement relating to new homes. If considering policies on local requirements for the sustainability of other buildings, local planning authorities will wish to consider if there are nationally described standards and the impact on viability of development. Further guidance can be found under Viability.

Revision Date: 27 03 2015	
Design	
Title: Planning should promote efficient use of natural resources **Paragraph:** 013 **Reference ID:** 26-013-20140306 **Revision Date:** 06 03 2014	The structure, layout and design of places can help reduce their resource requirements in terms of energy demands, water and land take, and help to sustain natural ecosystems Having a mix of uses and facilities within a neighbourhood can reduce travel demand and energy demands. Ensuring a place is durable and adaptable will help make it less resource hungry over time. For example the layout of infrastructure servicing development (including water supply, sewerage, drainage, gas, electricity, cable, telephone, roads, footpaths, cycle ways and parks) should take account of foreseeable changes in demand to reduce the need for expensive future changes. The layout and design of buildings and planting can reduce energy and water use and mitigate against flooding, pollution and over heating. Passive solar design is the siting and design of buildings to maximise the use of the sun's energy for heating and cooling. Passive solar design takes advantage of natural characteristics in building materials and air to help reduce the additional energy needed for heating and cooling. Policies can encourage sites to be planned to permit good solar access to as many buildings as possible. The potential benefits of passive solar design can only be realised by careful siting and layout. For example, access roads could predominantly run east-west, with local distributors running north-south and glazing minimised on north facing elevations to reduce heat loss. Passive solar design principles can be applied equally effectively in housing and commercial developments. It is important that passive design considers the potential for overheating in the summer, as well as reducing need for heating in the winter. A range of design solutions can be considered to help avoid overheating and the need for air conditioning. For example, high levels of thermal mass, maximising natural ventilation, passive cooling using planting for shade, roof overhangs to provide shade for high-sun angles, and smart glazing materials. The urban heat island effect can be reduced by, for example, allowing sufficient space between buildings, tree planting, shading and street layouts which encourage air flow and using light and reflective surfaces or vegetation on buildings.
Natural Environment	
Title: How can green infrastructure help to deliver wider planning policy? **Paragraph:** 030 **Reference ID:**	Meeting the challenge of climate change, flooding and coastal change Green infrastructure can help urban, rural and coastal communities mitigate the risks associated with climate change and adapt to its impacts by storing carbon; improving drainage (including the use of sustainable drainage systems) and managing flooding and water resources; improving water quality; reducing the urban heat-island effect and; where appropriate, supporting adaptive management in coastal areas. Green infrastructure networks also help species adapt to climate change by providing opportunities for movement.

8-030-20160211 **Revision Date:** 11 02 2016	

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 4. London's Economy	
4.1 Developing London's Economy	The Mayor will work with partners to: • B drive London's transition to a low carbon economy and to secure the range of benefits this will bring
Chapter 5. London's Response to Climate Change	
5.1 Climate Change Mitigation	Strategic A The Mayor seeks to achieve an overall reduction in London's carbon dioxide emissions of 60 per cent (below 1990 levels) by 2025. It is expected that the GLA Group, London boroughs and other organisations will contribute to meeting this strategic reduction target, and the GLA will monitor progress towards its achievement annually. LDF preparation B Within LDFs boroughs should develop detailed policies and proposals that promote and are consistent with the achievement of the Mayor's strategic carbon dioxide emissions reduction target for London.
5.2 Minimising Carbon Dioxide Emissions	Planning decisions A Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy: 1 Be lean: use less energy 2 Be clean: supply energy efficiently 3 Be green: use renewable energy B The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019. Residential buildings: Year Improvement on 2010 Building Regulatons 2010 – 2013 25 per cent (Code for Sustainable Homes level 4)t 2013 – 2016 40 per cent 2016 – 2031 Zero Carbon Year Improvement on 2010 Building Regulatons

	2010 – 2013 25 per cent 2013 – 2016 40 per cent 2016 – 2019 As per building regulations requirements 2019 - 2031 Zero Carbon C Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy. D As a minimum, energy assessments should include the following details: • a calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations (see paragraph 5.22) at each stage of the energy hierarchy • b proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services • c proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP) • d proposals to further reduce carbon dioxide emissions through the • use of on-site renewable energy technologies. E The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.
5.3 Sustainable Design and Construction	Strategic A The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime. Planning decisions B Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process. C Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: • a. minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems) • b. avoiding internal overheating and contributing to the urban heat island effect • c. efficient use of natural resources (including water), including making the most of natural systems both within and around buildings • d. minimising pollution (including noise, air and urban runoff) • e. minimising the generation of waste and maximising reuse or recycling

	• f. avoiding impacts from natural hazards (including flooding) • g. ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions • h. securing sustainable procurement of materials, using local supplies where feasible, and • i. promoting and protecting biodiversity and green infrastructure. LDF preparation D Within LDFs boroughs should consider the need to develop more detailed policies and proposals based on the sustainable design principles outlined above and those which are outlined in the Mayor's supplementary planning guidance that are specific to their local circumstances.
5.9 Overheating and Cooling	Strategic A The Mayor seeks to reduce the impact of the urban heat island effect in London and encourages the design of places and spaces to avoid overheating and excessive heat generation, and to reduce overheating due to the impacts of climate change and the urban heat island effect on an area wide basis. Planning decisions B Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this in accordance with the following cooling hierarchy: • 1 minimise internal heat generation through energy efficient design • 2 reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls • 3 manage the heat within the building through exposed internal thermal mass and high ceilings • 4 passive ventilation • 5 mechanical ventilation • 6 active cooling systems (ensuring they are the lowest carbon options). C Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible. Further details and guidance regarding overheating and cooling are outlined in the London Climate Change Adaptation Strategy. LDF preparation D Within LDFs boroughs should develop more detailed policies and proposals to support the avoidance of overheating and to support the cooling hierarchy.
5.10 Urban Greening	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.

Draft New London Plan (2017) Policies

Policy / paragraph reference	Policy and paragraph text
Chapter 1 – Good Growth	
Policy GG6 Increasing efficiency and resilience	To help London become a more efficient and resilient city, those involved in planning and development must: A Seek to improve energy efficiency and support the move towards a low carbon circular economy, contributing towards London becoming a zero carbon city by 2050. B Ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, and avoiding contributing to the urban heat island effect.
Chapter 3 – Design	
Policy D4 Housing quality and standards	E Residential development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Policy D1 London's form and characteristics than a dual aspect dwelling and it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating. F The design of development should provide sufficient daylight and sunlight to new housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.
Chapter 9 – Sustainable Infrastructure	
Policy SI2 Minimising greenhouse gas emissions	A Major development should be net zero-carbon. This means reducing carbon dioxide emissions from construction and operation, and minimising both annual and peak energy demand in accordance with the following energy hierarchy: 1) Be lean: use less energy and manage demand during construction and operation. 2) Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly. Development in Heat Network Priority Areas should follow the heating hierarchy in Policy SI3 Energy infrastructure. 3) Be green: generate, store and use renewable energy on-site. B Major development should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy and will be expected to monitor and report on energy performance. C In meeting the zero-carbon target a minimum on-site reduction of at least 35 per cent beyond Building Regulations117 is expected. Residential development should aim to achieve 10 per cent, and non-residential development should aim to achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided: 1) through a cash in lieu contribution to the relevant borough's carbon offset fund, and/or

	2) off-site provided that an alternative proposal is identified and delivery is certain. D Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver greenhouse gas reductions. The operation of offset funds should be monitored and reported on annually.
Policy SI3 Energy infrastructure	C Development Plans should: 1) identify the need for, and suitable sites for, any necessary energy infrastructure requirements including upgrades to existing infrastructure 2) identify existing heating and cooling networks and opportunities for expanding existing networks and establishing new networks. D Major development proposals within Heat Network Priority Areas should have a communal heating system 1) the heat source for the communal heating system should be selected in accordance with the following heating hierarchy: a) connect to local existing or planned heat networks b) use available local secondary heat sources (in conjunction with heat pump, if required, and a lower temperature heating system) c) generate clean heat and/or power from zero-emission sources d) use fuel cells (if using natural gas in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) e) use low emission combined heat and power (CHP) (in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) f) use ultra-low NOx gas boilers. 2) CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that there is no significant impact on local air quality. 3) Where a heat network is planned but not yet in existence the development should be designed for connection at a later date.
Policy SI4 Managing heat risk	A Development proposals should minimise internal heat gain and the impacts of the urban heat island through design, layout, orientation and materials. B Major development proposals should demonstrate through an energy strategy how they will reduce the potential for overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy: 1) minimise internal heat generation through energy efficient design 2) reduce the amount of heat entering a building through orientation, shading, albedo, fenestration, insulation and the provision of green roofs and walls 3) manage the heat within the building through exposed internal thermal mass and high ceilings 4) provide passive ventilation 5) provide mechanical ventilation 6) provide active cooling systems.

Mayor’s Sustainable Design and Construction (SPG)

Policy / paragraph reference	Policy and paragraph text
Mayor's Priority: Site Layout and Building Design	The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider: Existing features • the possible retention and reuse of existing buildings and structures; and • the retention of existing green infrastructure, including trees and other ecological features, and potential for its improvement and extension; • access routes to public transport and other facilities that minimise the use of private transport; New design of development • the existing landform; • the potential to take advantage of natural systems such as wind, sun and shading; • the principles sets out London Plan policies 7.1 and 7.6; • the potential for adaption and reuse in the future; • potential for incorporating green infrastructure, including enhancing biodiversity; • potential for incorporating open space, recreation space, child play space; • energy demands and the ability to take advantage of natural systems and low and zero carbon energy sources; • site wide infrastructure; • access to low carbon transport modes; • the promotion of low carbon transport modes, including walking and cycling ; • potential to address any local air quality, noise disturbance, flooding and land contamination issues; and • the potential effect on the micro-climate.
Mayor's Priority: Energy and Carbon Dioxide Emissions	The overall carbon dioxide emissions from a development should be minimised through the implementation of the energy hierarchy set out in London Plan policy 5.2.
Mayor's Priority: Carbon dioxide off-setting	Boroughs should establish a carbon off-set fund and identify suitable projects to be funded. Where developments do not achieve the Mayor's carbon dioxide reduction targets set out in London Plan policy 5.2, the developer should make a contribution to the local borough's carbon dioxide off-setting fund.
Mayor's Best Practice: Monitoring Energy Use	Developers are encouraged to incorporate monitoring equipment, and systems where appropriate to enable occupiers to monitor and reduce their energy use.
Mayor's Priority: Overheating	Developers should include measures, in the design of their schemes, in line with the cooling hierarchy set out in London Plan policy 5.9 to prevent overheating over the scheme's lifetime
2.3.6	Site Layout

	The location of uses across a site and the orientation and design of individual buildings have an important role in minimising energy demand. Measures to minimise carbon dioxide emissions include enabling access to daylight and sunlight for uses that require heat and light. Site planning can minimise the impact of the shadow created by the new buildings to protect existing features such as open space and renewable solar technologies on roofs. Developers should ensure the layout of their site and buildings maximises the opportunities provided by natural systems, such as light and wind and the potential for sustainable drainage systems. On large sites developers should ensure permeability and improved connectivity, where required to encourage walking.
2.3.7 – 2.3.9	Micro-climate Large buildings have the ability to alter their local environment and affect the micro-climate. For example, not only can particularly tall buildings cast a long shadow effecting buildings several streets away, they can influence how wind travels across a site, potentially making it unpleasant at ground level or limiting the potential to naturally ventilate buildings. One way to assess the impact of a large building on the comfort of the street environment is the Lawson Comfort Criteria. This tool sets out a scale for assessing the suitability of wind conditions in the urban environment based upon threshold values of wind speed and frequency of occurrence. It sets out a range of pedestrian activities from sitting through to crossing the road and for each activity defines a wind speed and frequency of occurrence. Where a proposed development is significantly taller that it's surrounding environment, developers should carry out an assessment of its potential impact on the conditions at ground level, and ensure the resulting design of the development provides suitable conditions for the intended uses. Other effects buildings can have on the local climate include: • overshadowing and reducing access to sunlight; • making it warmer, either through the heat released from any operating plant or from the materials forming the building as they cool down at night. This contributes to the urban heat island effect which is a particular issue in central London. Sections 3.2 and 3.3 provide some guidance on how to minimise the urban heat island effect; and • making it cooler through the effects of including vegetation or water. These effects should be considered during the design of a development and assessed once the designed is finalised.
2.4.3	The Mayor began to implement his 40% carbon dioxide reduction target for major development, in line with London Plan policy 5.2 from 1st October 2013. It was thought that this would be in line with the introduction of Part L of the Building Regulations 2013. The Government has announced the improvements in carbon dioxide emissions set out in Part L 2013 will come into force on the 6th April 2014. The Part L 2013 carbon dioxide improvements are in the lower range of the options consulted and there will be different improvement targets for various building types20 to recognise the differing potential for carbon abatement between different forms of building. Part L 2013 aims to deliver an overall 6% reduction in carbon dioxide emissions from new residential buildings and an overall 9% reduction in carbon dioxide emissions from new non-residential buildings compared to 2010.

	To avoid complexity and extra costs for developers, the Mayor will adopt a flat carbon dioxide improvement target beyond Part L 2013 of 35% to both residential22 and non-residential development. This approach introduces some inequalities between building types which the differentiated Part L 2013 target approach is designed to reduce. Therefore, when reviewing planning applications, the Mayor will recognise that some building types will find it harder to achieve the 35% target without a contribution to a local off-set fund. Developers will continue to need to undertake sufficient calculations to demonstrate compliance with London Plan policy 5.2. Should particular building types struggle to meet the target onsite, developers will need to provide the Mayor with sufficient evidence to demonstrate that this is the case. Please see the Mayor's Guidance for developers on preparing Energy Assessments for more detailed information, including transitional arrangements for the introduction of Part L 2013. For housing development please see paragraph 1.3.5 for details on the Government's Housing Standards Review.
2.4.4 – 2.4.7	The document Guidance for developers on preparing Energy Assessments provides detailed guidance on what information regarding design and energy is required to support a planning application referred to the Mayor and how carbon dioxide emissions are to be calculated. Boroughs may use this guidance to support borough planning applications. This document is available on the Mayor's web-site and is regularly updated to take into account the changes in the above carbon dioxide targets and changes to Part L of the Building Regulations. Boroughs should be satisfied that the proposed energy strategy is satisfactory for the intended use of the building and secure the overall energy strategy, by condition or s106 agreement, to ensure the identified carbon dioxide savings are achieved. 2.4.5 Where schemes will be delivered over a long period of time, the Mayor may seek the later phases of a development to comply with the carbon dioxide targets that will be in place at the time. Boroughs may ask developers to review their strategy to determine whether technological improvements will enable them to achieve their targets more easily. These measures can be secured through s106 agreements. Any substantial changes to the energy strategy of schemes referable to the Mayor are to be agreed by the GLA . 2.4.6 Where a planning application includes refurbishment or retrofitting works for a major development, applicants should summit energy strategies which follow the energy hierarchy and demonstrate appropriate reductions in carbon dioxide emissions. Whilst the targets in policy 5.2 apply to major developments, it is acknowledged that for many schemes involving existing buildings it will be a challenge to meet these target, except perhaps where a development can connect to a low or zero carbon energy source. Where boroughs receive a large number of applications for refurbishments or changes of use they are encouraged to develop local policies to maximise the reduction in carbon dioxide emissions from these schemes. See paragraphs 2.4.12 to 2.4.30 for more details on connecting to an efficient energy supply and paragraphs 2.5.26 to 2.5.29 for further details on retrofitting.

	2.4.7 The specific implementation dates for the later targets will be dependent on the Government's timetable for the changes to the Building Regulations and its implementation of the 'zero carbon' target. This issue will be addressed in further alterations to the London Plan or through Supplementary Planning Guidance.
2.4.8 – 2.4.11	Use Less Energy 2.4.8 London Plan policy 5.2 sets out an energy hierarchy that developers are to followed when designing their scheme and its building services. Whilst the constraints of some sites limit the potential to alter a building's orientation, careful design, including the location, size and depth of windows and choice of materials can all influence the carbon dioxide emissions from a development. The design of the building envelope can have the greatest influence in the energy demands of a building. Further information can be found in the GLA report on Meeting the Carbon Reduction Targets through Design and Fabric. 2.4.9 Designing carbon dioxide saving measures into a development from the start is the most cost effective way to ensure developers can minimise these emissions. To facilitate this early consideration, developers should set clear carbon dioxide targets (based on the London Plan and this SPG) for their scheme from the outset and employ a multidisciplinary team to ensure the design and mechanical services can together achieve the set target, both at the design stage and whilst occupied. 2.4.10 Following are some of the easiest and most cost-effective measures developments can incorporate to help them reach the London Plan carbon dioxide targets. Some measures can be directly influenced through design and therefore are direct planning matters. Other internal design features and mechanical systems are influenced by the Building Regulations. Both types of measures will need to be implemented to help developments reach the London Plan carbon dioxide targets. In their energy assessment developers should demonstrate how they have considered, and where practical included the following measures: Passive and design measures: • optimise natural daylight – including through dual aspect, optimal window • size, higher floor to ceiling heights, shallow floorplates, the use of lightwells and rooflights; • optimise solar gain – depending whether heat is required – by altering • the size and depth of windows on the north and south elevations. To retain heat, providing a thermal buffer will provide a transition area between entry/ exit areas. If heat is not required include shading devises, low g-value glazing; • limit overshadowing - of windows to areas that require daylight or could • benefit from solar gain; or of the roof if solar renewable technologies are planned; • optimise insulation - particularly in non-residential development, the level will vary to limit overheating, depending on solar gain and internal heat gains as well as air tightness. In residential developments insulation should generally be maximised with appropriate design measures used to minimise overheating;

	• minimise cold bridging – to prevent the loss of heat and to prevent the development of cold spots which can lead to mould; • optimise air tightness - based on heating or cooling requirements; • maximise insulation of heating infrastructure including hot water pipes and hot water storage units; • minimise the length of hot water pipe runs; • optimise thermal mass – which can help retain heat, or if exposed, lose heat to the cooler external environment; • use light coloured materials - to avoid the absorption of heat resulting in overheating; • incorporate green roofs, green walls and other green infrastructure which can keep buildings warm or cool and improve biodiversity and contribute to sustainable urban drainage; and • maximise the potential for natural ventilation – including through openable windows, shallow floorplates, dual aspect units, passive ventilation with heat recovery, designing in the 'stack effect' system where pressure differences are used to draw air through a building and double façade where the inner façade has openings to release heat without occupants being exposed to external wind and noise. Active measures • include carbon dioxide efficient heating systems – such as efficient ultra-low NOx gas boilers for small schemes, low temperature heating eg underfloor, community heating systems, combined heat and power plants for large schemes (to be considered as the second element of the energy hierarchy). Boilers fed with a renewable fuel, solar thermal for small schemes or other renewable heat technology (to be considered as part of the third element of the energy hierarchy). Careful consideration needs to be given to the air quality implications of heating plant, especially those burning solid or liquid fuel. See section 4.3 and Appendix 7 for emissions standards for CHP and biomass; • include heat recovery – collecting waste heat from domestic and commercial activities to pre-heat air or water for heating or hot water systems. Basic systems include plumbing that enables the warm waste water from showering to pre-heat the water for the remainder of that shower. • maximise natural cooling and efficient cooling systems, where required – including chilled beams, evaporation cooling; • select efficient ventilation systems, where required – including ventilation • with heat recovery, which is a growing requirement due to the increased air tightness of buildings. Passive ventilation with heat recovery units, that do not require electricity, are preferred; • incorporate low energy mechanical services; • maximise energy efficient lighting systems, such as using LEDs and occupancy and daylight sensors. The latter measures can reduce electricity use by 30% and 40% respectively26; and • incorporate other energy efficient and saving equipment such as heating controls, individual controls, zoning, movement sensors, photo sensors, timers, metering, building management and monitoring systems. Energy efficient appliances generally generate less heat and can help minimise the build up of heat within buildings.

	2.4.11 Careful consideration needs to be given to what areas of the building are likely to need light, need to be warm or cool and the activities that will generate their own heat such as the use of IT equipment. The design should also include measures to prevent the development from overheating in the future, ideally without the need for active measures. Further details on measures to prevent overheating are provided in section 3.2. Active measures should be designed to meet the needs of the building so that plant can run efficiently. Oversized plant can lead to the inefficient use or unnecessary use of the equipment. Boroughs should be satisfied that the proposed design and energy strategy is satisfactory for the intended use of the building and should secure the appropriate design and technological measures as part of a development's energy strategy.
2.4.29	Preventing overheating from communal heating systems 2.4.29 The Mayor has produced the report Designing Communal Heating Systems in Residential Developments which sets out measures that should be implemented to prevent overheating by communal systems. Section 3.2 provide further guidance on how to limit overheating within buildings.
2.5.7 2.5.8	Off-site provisions 2.5.7 Boroughs may agree with a developer for the developer to directly offset any shortfall in carbon dioxide reductions from a scheme by installing a carbon dioxide saving project off- site. Measures could include directly funding or installing community energy and retrofitting projects. For example, a developer could install photovoltaics on a nearby school. The CIL regulations need to be taken into account when securing these arrangements. The borough should ensure that the off-setting measure provides added value - that is, the measure would be unlikely to be funded through another means. Boroughs should secure off-setting measures through s106 agreements. 2.5.8 An assessment should be made by the Council or beneficiary of the off-setting measure so that the off-setting measures either have carbon dioxide or financial equivalence to the carbon dioxide saving that would otherwise be required on the development site.
2.5.9	Cash in-lieu payment To maximise the reduction in carbon dioxide emissions across London boroughs should establish a planning related carbon dioxide reduction fund and set a price at which the carbon dioxide short fall will be calculated. Boroughs can use the guidance in this SPG, including the suggested nationally recognised price to form the basis of their carbon off-setting fund or develop a locally specific fund. Contributions should be secured by a s106 agreement.
	Calculating the Price of Carbon Boroughs should develop and publish a price for carbon dioxide based on either: • a nationally recognised carbon dioxide pricing mechanism; or • the cost of reducing off-setting carbon dioxide emissions across the borough. 2.5.11 The price set should not put an unreasonable burden on development and must enable schemes to remain viable. Nationally recognised price for carbon dioxide

	2.5.12 Nationally recognised prices for carbon dioxide include: • the Zero Carbon Hub price, currently £60 per tonne34, and • the non-trading price of carbon. 2.5.13 The overall contribution should be calculated over 30 years35. For example, using the Zero Carbon Hub price equates to £60 x 30 years = £1,800 per tonne of carbon dioxide to be off-set. The cost of off-setting carbon dioxide emissions 2.5.14 This approach could include an assessment of the carbon dioxide offsetting measures possible in the borough and dividing it by the anticipated amount of development coming forward over the next 30 years. The price for a locally specific fund should be published in a Supplementary Planning Document. 2.5.15 When assessing which off-setting measures are possible in the borough consideration needs to be given to the real potential to deliver these measures, once adequate funding is available. For example, measures in conservation areas on listed buildings may have to be limited or there may be other barriers to delivery.
2.5.16 – 2.5.20	2. The off-setting fund and projects *Spending the fund* 2.5.16 Unless the price set for carbon dioxide fully reflects the delivery of the identified carbon dioxide reduction projects, it is not considered necessary that the ratio of carbon dioxide saving to the off-setting price has to be 1:1. That is, the cost of the measure to save one tonne of carbon dioxide does not have to be equal to the off-set price per one tonne of carbon dioxide. This is because the off-set price set generally does not fully cover the cost of saving carbon dioxide in order to ensure the price is viable for development to proceed. 2.5.17 The benefit of the fund is in unlocking carbon dioxide saving measures. If a 1:1 ratio is set, only the simplest retrofitting measures are likely to be carried out. This would potentially still leave the more complicated measures without adequate funding and could result in a property requiring further retrofitting works in the future, resulting in further disturbance to the occupier. *The projects* 2.5.18 It is essential that boroughs identify a suitable range of projects that can be funded through the carbon dioxide offset fund. Where the overall contribution is calculated over 30 year boroughs should take into consideration the lifespan of the retro-fit measures that are being funded. Consideration needs to be given to the CIL regulations regarding the funding of infrastructure and the restriction on the use of s106 agreements. 2.5.19 Preference should be given to retrofitting publicly owned property as this would provide wider community benefit. Initial discussions suggest that schools, council buildings and social housing are the buildings that could be retrofit most readily. Another option could be establishing a borough wide revolving energy fund, where a loan is provided to local residents or businesses wanting to retrofit energy and water saving measures.

	2.5.20 For more costly measures boroughs may wish to seek additional funding from other sources, including: • SALIX • Green Deal • Energy Company Obligations (ECO) • London Energy Efficiency Fund (LEEF).
2.5.34 – 2.5.36	2.5.34 Various studies have shown that there is often a gap between how buildings are designed and modelled to perform and how they perform once they are occupied. Various organisations are carrying out research into why there is this gap and whether there are ways to address this, so it is possible for developers to learn from the experience of others. BREEAM and Code for Sustainable Homes assessments have a post-construction assessment process. 2.5.35 It is important that the original design considers how the development is likely to be occupied, and that measures, including Smart Meters are installed to enable the monitoring of the energy (heat and electricity) and water use. This is already common practice in commercial buildings to enable landlords to monitor and reduce energy use. Displayed energy use in residential developments will enable occupiers to better understand the energy implications of the way they occupy and use their buildings and to take advantage of energy as it is generated. Even where energy costs are covered by the service charge, such as in student housing, monitoring can still be helpful to identify excessive use of energy. 2.5.36 When negotiating with developers on planning applications, boroughs should encourage them to install smart metering in their scheme. Comprehensive metering, including of low and zero carbon technologies will assist occupiers and future proof the scheme for changes in the energy and water market in the future, including enabling occupiers and landlords to take advantage of demand side response.
3.2.2 – 3.2.5	Overheating 3.2.2 Section 2.3 sets out how larger developments can influence their local environment and contribute to the urban heat island effect. Overheating within buildings can result from either too much heat entering a building and not being released or too much heat being generated within a building and not being released. Just like being too cold, overheating can result in discomfort for occupiers, poor productivity and health concerns. Therefore, if the internal environment becomes too hot it is likely occupiers will try to find a way to cool their environment. In order to continue minimising carbon dioxide emissions it is important designers consider the internal comfort required by occupiers at the design stage and that this comfort level is met through implementing the cooling hierarchy set out in London Plan Policy 5.9. 3.2.3 Overheating is not fully assessed by carbon dioxide emission models, therefore developers are encouraged to undertake dynamic thermal modelling to ensure that their development does not overheat. This is particularly important for small south facing and top floor living accommodation. As outlined in the London Plan59 the GLA is developing with the Chartered Institute of Building Services Engineers (CIBSE) guidance for developers to address the risk of overheating in buildings. This document will be titled 'TM49: Probabilistic design summer years for

	London '. Modelling should address what the temperature is likely to be over the lifetime of the development . 3.2.4 Section 2.4 sets out some broad measures on how a development's design can minimise carbon dioxide emissions. To prevent overheating developers should incorporate the following measures, as appropriate, into their schemes: Passive measures: • avoid designing small south facing units; • use materials with a high thermal mass; • use green roofs and green walls to keep the heat out, and keep the building and its surroundings cool; • use materials with high albedo surfaces; • locate spaces and uses that need to be cool or that generate heat on the north side of development; • use smaller windows on the south and western elevations with low g-value glazing; • use carefully designed shading measures, including balconies, louvers, internal or external blinds, shutters, trees and vegetation; • design the building and its internal layout to enable passive ventilation, including openable windows, a shallow floor plan, high floor to ceiling heights, the stack effect, a double façade; • minimise internal heat gains by using low energy equipment, including energy efficient lighting and insulating hot water pipes and infrastructure as well as thermal stores; and design in vegetation, including green roofs and walls, and water features for passive cooling. Active measures: • energy efficient lighting and equipment to minimise internal heat generation; and • follow the Mayor's Low Carbon Cooling Guide to select the most efficient ventilation and cooling systems. 3.2.5 An assessment of the heat gains in communal areas also needs to be considered. The Mayor has produced the report Designing Communal Heating Systems in Residential Developments which sets out measures that should be implemented to prevent overheating by communal systems.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
Principle E2	Proposals should: a. Continue to protect waste sites in Park Royal as set out in the West London Waste Plan, as adopted by OPDC in July 2015; b. Investigate the potential for the relocation of existing waste sites from Old Oak to Park Royal and wider; c. Support London's transition to the circular economy to turn London's waste into an economic opportunity and become 100% net waste self-sufficient

	d. Investigate the potential for integrating waste sites in Old Oak delivering benefits in the form of jobs, new materials and low carbon heat and power; and e. Demonstrate innovative waste and recycling management and collection processes to help boost London's recycling rate.

Local Plan Regulation 18 Draft Policy Options

Policy Options were not provided in the Regulation 18 Draft Local Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
The policy (EU6) has too limited scope; it should be broadened to include how greenhouse gas emissions should be minimised and should promote renewables/low carbon energy	Grand Union Alliance, Hammersmith and Fulham Council, 3 residents	Change proposed. The Reg 19 Local Plan includes a policy on minimising carbon emissions.
Reducing greenhouse gas emissions is critical as part of any environmental standard setting	Diocese of London	Noted. Reducing carbon emissions is an integral part of the overarching environmental sustainability strategy in the Local Plan. Policy EU9 expressly deals with this.
Need to set out how carbon emissions will be minimised	Resident	Change proposed. This is covered specifically in Policy EU9 but carbon reductions cut across a number of other policy areas and are supported by measures such as supporting sustainable travel modes (SP7), delivering open space and urban greening (EU1 and EU2) and minimising waste (EU6)
High densities proposed would create a canyon effect along Old Oak High Street. Approach to densities here is not supported and precedent of Tottenham Court Road is not appropriate	Midland Terrace Resident's Group, Old Oak Interim Forum, 2 residents	No change proposed. Policy SP7 requires that development proposals for the High Street optimise the levels of daylight and sunlight that the street receives and minimises other environmental impacts such

		as wind and urban heat island effect. Policies SP3 (improving health and reducing health inequalities), D6 (amenity), EU4 (air quality) and EU9 (minimising carbon emissions and overheating).
There should be a requirement for high standards of sustainability performance	Hammersmith & Fulham Council	Noted. The Environment and utility policies set out how the development will be sustainable, for example: how it can help to deliver a high quality microclimate, which receives adequate sunlight and daylight, has a good quality of air, low levels of noise, good quality soil and water and that development avoids overheating. Development and growth is often viewed as a key risk to climate change, but if well designed, delivered and operated, it can also be a key part of the response.
Do not support high densities along the High Street as this could result in a soulless place, like Chiswick Park in Gunnersbury	TITRA	Change proposed. Policy SP7 requires the High Street to be designed to a high quality with green infrastructure, mature tree planting and optimises the levels of daylight and sunlight that the street receives and minimises other environmental impacts such as wind and urban heat island effect, to ensure the proposed densities deliver a high quality place. Chiswick Park is not a High Street; it is a business park with limited retail provision.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Welcome Para 6.100 on production of SPD guidance on the carbon price to be charged and encourage OPDC to make this a priority. In particular clarity on how payments will be organised is necessary.	LBHF	No change proposed. OPDC will adopt the draft London Plan approach to off-setting. SPD will be developed in due course setting out OPDC's approach to carbon off-setting.
Policy not sound. No justification provided	Friary Park Preservation Group	No change proposed. OPDC officers believe the policy and supporting study are sound and will help to minimise carbon emissions and overheating in compliance with the London Plan.
Need to reinstate targets from Reg 18 and add reference to embodied carbon and building reuse	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Embodied carbon is addressed in EU8. The carbon targets in the Reg 18 plan are either included as they form part of National Policy or London Plan policy, which all development is required to conform with, or because it has been superseded. for example, all new homes now have to be zero carbon by 2016 as per the London Plan and Government legislation requires UK to reduce its carbon emissions by 80% by 2050.
Housing should be zero carbon including use of solar PV, hot water and green roofs	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC requires housing to comply with the London Plan, which is for development to deliver a 35% reduction over Part L from on-site measures and to demonstrate how it will be fully zero carbon through on-site measures by 2050. OPDC cannot be prescriptive about how zero carbon is achieved. Every effort will be made to promote the use of community and building scale renewables where viable. Carbon off-setting will be used where developments cannot achieve carbon reduction targets in line with the London Plan.
Policy does not align with Mayor's Zero Carbon London by 2050 aspiration or fully address overheating.	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The draft Local Plan requires all developers to conform with the London Plan when bringing forward applications.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Should require new non-residential development to achieve BREEAM outstanding	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC officers will promote BREEAM outstanding but the Plan has to be viable and BREEAM excellent is considered to deliver a high standard of development whilst being financially viable. OPDC also expect development to contribute to a range of other benefits including delivery of affordable housing and green infrastructure for example.
Post construction audits are welcome and should include energy performance	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Noted, energy performance will be considered as part of the scope. Further guidance on this will be set out in OPDC's Post Occupancy Evaluation SPD.
The BREEAM requirement should be relocated to Policy D4	LBHF	Change proposed. OPDC agrees that it would sit better here and this has been relocated.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Clarification should be provided on the timeframes envisaged for monitoring of CO2 emissions, and what actions would take if a development is not meeting the required CO2 emission targets.	London Borough of Hammersmith and Fulham	No change proposed. The draft new London requires major developments to monitor and report on energy performance to the Mayor for at least five years. Further clarity on how OPDC's approach to monitoring CO2 emissions new developments will be included in the forthcoming Post Occupancy Evaluation SPD. Further details on obligations where development does not achieve the agreed CO2 emission targets will be included within OPDC's forthcoming Planning Obligations SPD.
Support the development of guidance on the carbon offset scheme to be implemented in the OPDC area.	London Borough of Hammersmith and Fulham	Noted.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Requirement for Post Occupancy Evaluations are welcomed, but they should also monitor issues relating to landscape and public realm.	Grand Union Alliance	Noted. No change proposed. The Post Occupancy Evaluations will include monitoring of landscape and public realm. OPDC is preparing an SPD on Post Occupancy Evaluations which provide greater details on the requirements of development and issues to be monitored.
Environmental targets set out by OPDC and the Mayor may not be met due to the proposed density of development.	Grand Union Alliance	No change proposed. Policy SP2 (Good Growth) sets out how development is expected to deliver high density, high quality development by meeting or exceeding the environmental standards set out across the Local Plan. The supporting text to Policy SP2 acknowledges that these standards will be difficult to meet and that regard would be given to the viability of development in line with Policy DI1.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
Environmental Standards Study	*Reducing Demand* • All new development will be required, as a minimum, to be operationally zero carbon in respect of regulated energy loads. Zero carbon is defined as at least 35% reductions in carbon emissions beyond Building Regulations 2013 Part L requirements onsite, with remaining regulated emissions to be off-set by a cash in lieu payment to OPDC. Developers should aim to achieve zero carbon development by maximising design and energy efficiency measures as far as possible. Developers should aim to meet or exceed guideline performance targets for regulated energy demand for all land use types. • As part of planning applications, developers will be required to submit strategies to monitor, manage and reduce unregulated energy demand. These should set out how the developer will support occupiers to minimise their energy demand. *Monitoring Performance and Demand side response* • All development will require post-construction monitoring to demonstrate compliance with OPDC energy policies. • Developers will be required to incorporate smart metering equipment that would enable their schemes to participate in demand side

	response opportunities and facilitate real-time monitoring of energy performance. *Driving Carbon Emissions Reduction* • Old Oak and Park Royal will be developed as an exemplar of high density, high rise sustainable development. The aspiration is for all new development at the OPDC site to be zero carbon. In line with current GLA policy and London-wide carbon accounting, 'zero carbon' is defined in terms of operational emissions which are readily measurable. *Measuring and Monitoring Carbon Emissions* • As part of the CPMF, OPDC will work with the GLA, other London public authorities, regulators, infrastructure services providers and developers to develop procedures and mechanisms to ensure accurate measurement, collection, management and analysis of carbon related data to create a detailed 'live' carbon footprint for the site. • Developers, utility services providers, associated consultants and contractors, and management services providers will be required to measure, collect, record and submit carbon related data in accordance with the CPMF. The CPMF will cover all phases and stages, from early design through to operation and decommissioning, and include data on embodied carbon emissions as well as operational and 'end-of-life' emissions. • As part of planning applications, developers will be required to submit a CPMF plan setting out how they will ensure compliance with CPMF procedures and mechanisms. *Carbon Offsetting* • As part of the CPMF, OPDC will work with relevant stakeholders to develop guidance on site-specific procedures and mechanisms for offsetting residual carbon emissions. • As part of planning applications, developers will be required to develop strategies demonstrating how their proposals will be compliant with OPDC carbon offsetting procedures and mechanisms. *Climate Response Design* • Development of Old Oak Common and Park Royal should promote climate responsive urban design to create high quality, attractive, open spaces and streetscapes as well as healthy, comfortable and energy efficient buildings. The future masterplanning process will need to define a street layout and hierarchy which takes into account the microclimate and climate sensitive design principles. This should include: o Incorporating design measures including shading, controlling solar gain, mixed mode and cross ventilation strategies to reduce overheating of indoor spaces.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	• OPDC will work with the GLA, other London public authorities, regulators, infrastructure services providers and developers to develop an appropriate Carbon Planning and Management Framework (CPMF) for defining and implementing exemplar zero carbon development at Old Oak and Park Royal. As part of planning applications, developers will be required to develop strategies demonstrating how their proposals comply with the CPMF. This will include submission of a Carbon Reduction Strategy clearly setting out the approach to reducing carbon, and measures proposed to achieve quantified reductions.	• OPDC will work with the GLA and other strategic partners to establish strategies for defining exemplar zero carbon development at Old Oak, however it is not appropriate for this to be included in Local Plan Policy.

Other evidence base

Supporting Study	Recommendations
UK Climate Change Risk Assessment 2017	People & the built environment Increasing temperatures, rising sea-levels and modified rainfall patterns will change the climate-related risks to people and the built environment. Climate change is expected to increase the frequency, severity and extent of flooding. According to research conducted to support the CCRA, at present an estimated 1.8 million people are living in areas of the UK at significant risk of river, surface water or coastal flooding. The population living in such areas is projected to rise to 2.6 million by the 2050s under a 2°C scenario and 3.3 million under a 4°C scenario, assuming low population growth and a continuation of current levels of adaptation. Analysis conducted for the CCRA suggests that 0.5 to 1 metre of sea level rise could make some 200km of coastal flood defences in England highly vulnerable to failure in storm conditions. Sea level rise and increased wave action will make it increasingly difficult and costly to maintain current sea defence lines in some areas. The number of heat-related deaths in the UK are projected to increase by around 250% by the 2050s (median estimate), due to climate change, population growth and ageing, from a current annual baseline of around 2,000 heat-related deaths per year. There are also potential opportunities associated with higher temperatures. For

	example, outdoor activities may become more attractive, with perhaps an increase in active travel such as cycling and walking. Very little quantitative evidence exists that considers these benefits. Cold is currently a significant public health problem, with between 35,800 and 49,700 cold-related deaths per year on average in the UK. Climate change is projected to reduce the health risks from cold, but the number of cold-related deaths is projected to decline only slightly due to the effects of a growing, ageing population increasing the number of vulnerable people at risk. Health services will be vulnerable to an increase in the frequency and intensity of extreme weather events. The capacity of the system to cope with shocks is unknown but could decrease given pressures on the health service and local authorities. Higher temperatures in the future may lead to the expansion of insect vectors for certain diseases. For example, Culex modestus has recently been found in south-east England and is a vector for West Nile virus. Higher temperatures in the future will also increase the suitability of the UK's climate for invasive mosquito species. The risk of dengue and the Chikungunya virus remains low in the near term but may increase under a 4C scenario. The risk of malaria in the UK remains low.

EU10: Energy Systems

Legislation, Policy and Guidance Context

National Planning Policy Framework 2012 (NPPF)

Policy/ paragraph reference	Policy and paragraph text
17	Within the overarching roles that the planning system ought to play, a set of core land-use planning principles should underpin both plan-making and decision-taking. These 12 principles are that planning should: • support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);
93	Planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.
96	In determining planning applications, local planning authorities should expect new development to: • comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and • take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.
97	To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should: • have a positive strategy to promote energy from renewable and low carbon sources; • design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts; • consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources; • support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and • identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.
98	When determining planning applications, local planning authorities should:

	• not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and • approve the application18 if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.
156	Local planning authorities should set out the strategic priorities for the area in the Local Plan. This should include strategic policies to deliver: • the homes and jobs needed in the area; the provision of retail, leisure and other commercial development; • the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat); • the provision of health, security, community and cultural infrastructure and other local facilities; and • climate change mitigation and adaptation, conservation and enhancement of the natural and historic environment, including landscape.
162	Local planning authorities should work with other authorities and providers to: • assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands; and • take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.

National Planning Practice Guidance

Policy/ paragraph reference	**Policy and paragraph text**
Climate Change	
Title: How can the challenges of climate change be addressed through the Local Plan? **Paragraph:** 003 **Reference ID:** 6-003-20140612 **Revision Date:** 12 06 2014	There are many opportunities to integrate climate change mitigation and adaptation objectives into the Local Plan. Sustainability appraisal can be used to help shape appropriate strategies in line with the statutory duty on climate change and ambition in the Climate Change Act 2008. Examples of mitigating climate change by reducing emissions: • Reducing the need to travel and providing for sustainable transport • Providing opportunities for renewable and low carbon energy technologies • Providing opportunities for decentralised energy and heating • Promoting low carbon design approaches to reduce energy consumption in buildings, such as passive solar design Engaging with appropriate partners, including utility providers, communities, health authorities, regulators and emergency planners, statutory environmental bodies, Local Nature

	Partnerships, Local Resilience Forums, and climate change partnerships will help to identify relevant local approaches.
Title: How can local planning authorities identify appropriate mitigation measures in plan-making? **Paragraph:** 007 **Reference ID:** 6-007-20140306 **Revision Date:** 06 03 2014	Every area will have different challenges and opportunities for reducing carbon emissions from new development such as homes, businesses, energy, transport and agricultural related development. • Robust evaluation of future emissions will require consideration of different emission sources, likely trends taking into account requirements set in national legislation, and a range of development scenarios. • Information on carbon emissions at local authority level has been published by the government for 2005 onwards, and can be drawn on to inform emission reduction options. Information is also available on GOV.UK on how emissions are reported against the national target to reduce the UK's greenhouse gas emissions by at least 80% (from the 1990 baseline) by 2050. • The distribution and design of new development and the potential for servicing sites through sustainable transport solutions, are particularly important considerations that affect transport emissions. Sustainability appraisal should be used to test different spatial options in plans on emissions. • Different sectors may have different options for mitigation. For example, measures for reducing emissions in agricultural related development include anaerobic digestion, improved slurry and manure storage and improvements to buildings. In more energy intensive sectors, energy efficiency and generation of renewable energy can make a significant contribution to emissions reduction.
Planning for Renewable and Low Carbon Energy	
Title: Why is planning for renewable and low carbon energy important? **Paragraph:** 001 **Reference ID:** 5-001-20140306 **Revision Date:** 06 03 2014	Increasing the amount of energy from renewable and low carbon technologies will help to make sure the UK has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.
Title: Are all energy developments handled by local planning authorities? **Paragraph:** 002 **Reference ID:** 5-002-20150618	Local planning authorities are responsible for renewable and low carbon energy development of 50 megawatts or less installed capacity (under the Town and Country Planning Act 1990). Renewable and low carbon development over 50 megawatts capacity are currently considered by the Secretary of State for Energy under the Planning Act 2008, and the local planning authority is a statutory consultee. It is the government's intention to amend legislation so that all applications for onshore wind energy development are handled by local planning authorities. Microgeneration is often permitted development and may not require an application for planning permission.

Revision Date: 18 06 2015	
Title: How can local planning authorities develop a positive strategy to promote the delivery of renewable and low carbon energy? **Paragraph:** 003 **Reference ID:** 5-003-20140306 **Revision Date:** 06 03 2014	The National Planning Policy Framework explains that all communities have a responsibility to help increase the use and supply of green energy, but this does not mean that the need for renewable energy automatically overrides environmental protections and the planning concerns of local communities. As with other types of development, it is important that the planning concerns of local communities are properly heard in matters that directly affect them. Local and neighbourhood plans are the key to delivering development that has the backing of local communities. When drawing up a Local Plan local planning authorities should first consider what the local potential is for renewable and low carbon energy generation. In considering that potential, the matters local planning authorities should think about include: • the range of technologies that could be accommodated and the policies needed to encourage their development in the right places; • the costs of many renewable energy technologies are falling, potentially increasing their attractiveness and the number of proposals; • different technologies have different impacts and impacts can vary by place; • the UK has legal commitments to cut greenhouse gases and meet increased energy demand from renewable sources. Whilst local authorities should design their policies to maximise renewable and low carbon energy development, there is no quota which the Local Plan has to deliver. There is information below on community-led renewable energy initiatives
Title: How can local planning authorities identify suitable areas for renewable and low carbon energy? **Paragraph:** 005 **Reference ID:** 5-005-20150618 **Revision Date:** 18 06 2015	There are no hard and fast rules about how suitable areas for renewable energy should be identified, but in considering locations, local planning authorities will need to ensure they take into account the requirements of the technology and, critically, the potential impacts on the local environment, including from cumulative impacts. The views of local communities likely to be affected should be listened to. When identifying suitable areas it is also important to set out the factors that will be taken into account when considering individual proposals in these areas. These factors may be dependent on the investigatory work underpinning the identified area. There is a methodology available from the Department of Energy and Climate Change's website on assessing the capacity for renewable energy development which can be used and there may be existing local assessments. However, the impact of some types of technologies may have changed since assessments were drawn up (eg the size of wind turbines has been increasing). In considering impacts, assessments can use tools to identify where impacts are likely to be acceptable. For example, landscape character areas

	could form the basis for considering which technologies at which scale may be appropriate in different types of location. Landscape Character Assessment is a process used to explain the type and characteristics of landscape in an area. Natural England has used Landscape Character Assessment to identify 159 National Character Areas in England which provide a national level database. Landscape Character Assessment carried out at a county or district level may provide a more appropriate scale for assessing the likely landscape and visual impacts of individual proposals. Some renewable energy schemes may have visual impacts on the marine and coastal environment and it may be appropriate to also to assess potential impacts on seascape character. Identifying areas suitable for renewable energy in plans gives greater certainty as to where such development will be permitted. For example, where councils have identified suitable areas for large scale solar farms, they should not have to give permission outside those areas for speculative applications involving the same type of development when they judge the impact to be unacceptable. In the case of wind turbines, a planning application should not be approved unless the proposed development site is an area identified as suitable for wind energy development in a Local or Neighbourhood Plan. There is information in the rest of the guidance on technical considerations, criteria-based policies, buffer zones and decentralised energy.
Title: How can decentralised energy opportunities be identified? **Paragraph:** 009 **Reference ID:** 5-009-20140306 **Revision Date:** 06 03 2014	There is an important contribution to be made by planning that is independent of the contribution from other regimes such as building regulations. For example, getting the right land uses in the right place can underpin the success of a district heating scheme. Similarly, planning can influence opportunities for recovering and using waste heat from industrial installations. Planning can provide opportunities for, and encourage energy development which will produce waste heat, to be located close to existing or potential users of the heat. Planning can also help provide the new customers for the heat by encouraging development which could make use of the heat. Information on local heat demand is published by the Department of Energy and Climate Change to assist planners and developers in identifying locations with opportunities for heat supply. See the national heat map and the UK combined heat and power (CHP) development map. This information will be supplemented in future by further work, including detailed mapping, on the potential for combined heat and power and district heating and cooling.
Waste	
Title: How should local planning authorities integrate the need for waste management	Opportunities for land to be utilised for waste management should be built into the preparatory work for Local Plans, to the level appropriate to the local planning authorities planning responsibilities. For example:

with other spatial concerns in the preparation of Local Plans? **Paragraph:** 018 **Reference ID:** 28-018-20141016 **Revision Date:** 16 10 2014	• suitable previously-developed land, including industrial land, provides opportunities for new waste facilities and priority should be given to reuse of these sites. It is important for waste to be considered alongside other land uses when looking at development opportunities • as reviews of employment land are undertaken, it is important to build in the needs of waste management before releasing land for other development or when considering areas where major regeneration is proposed • the integration of local waste management opportunities in new development should be integral to promoting good urban design • facilitating the co-location of waste sites with end users of waste outputs such as users of fuel, low carbon energy/heat, recyclates and soils.

London Plan (2016) Policies

Policy/ paragraph reference	Policy and paragraph text
Chapter 2. London's Places	
2.7 Outer London: Economy	Strategic The Mayor will, and boroughs and other stakeholders should, seek to address constraints and opportunities in the economic growth of outer London so that it can rise above its long term economic trends by: • prioritising improvements to the business environment, including safety and security measures; partnership-based approaches like business improvement districts; enhancing the vibrancy of town centres through higher density, retail, commercial and mixed use development including housing; providing infrastructure for homeworking; improving access to industrial locations; developing opportunities for decentralised energy networks and ensuring high quality design contributes to a distinctive business offer
2.17 Strategic Industrial Locations	Strategic A The Mayor will, and boroughs and other stakeholders should, promote, manage and, where appropriate, protect the strategic industrial locations (SILs) designated in Annex 3 and illustrated in Map 2.7, as London's main reservoirs of industrial and related capacity, including general and light industrial uses, logistics, waste management and environmental industries (such as renewable energy generation), utilities, wholesale markets and some transport functions.
Chapter 4. London's Economy	
4.4 Managing Industrial Land and Premises	LDF preparation B LDFs should demonstrate how the borough stock of industrial land and premises in strategic industrial locations (Policy 2.17), locally significant industrial sites and other industrial sites will be planned and managed in local circumstances in line with this strategic d the need for strategic and local provision for waste management, transport facilities (including inter-modal freight interchanges), logistics and wholesale markets within London and the wider city region; and to accommodate demand for workspace for small and medium sized

	enterprises and for new and emerging industrial sectors including the need to identify sufficient capacity for renewable energy generation.
Chapter 5. London's Response to Climate Change	
5.2 Minimising Carbon Dioxide Emissions	Planning decisions A Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy: 1 Be lean: use less energy 2 Be clean: supply energy efficiently 3 Be green: use renewable energy B The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019. C Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy. D As a minimum, energy assessments should include the following details: a calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations (see paragraph 5.22) at each stage of the energy hierarchy b proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services c proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP) d proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies. E The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.
5.4A Electricity and Gas Supply	Strategic A The Mayor will work with the relevant energy companies, Ofgem the regulator, national Government, the boroughs, developers, business representatives and others to promote strategic investment in electricity and gas infrastructure where and when it is required to accommodate the anticipated levels of growth in London. The forecasting of requirements should take into account the opportunities and impacts of decentralised energy and demand management measures. Planning Decisions B Developers, especially of major schemes, should engage at an early stage with relevant boroughs and energy companies to identify the gas and electricity requirements arising from their development proposals.

	C The Mayor will work with relevant boroughs, energy companies and other relevant parties to support where appropriate development proposals for gas and electricity infrastructure which address identified energy requirements. LDF preparation D Boroughs should work with the relevant energy companies to establish the future gas and electricity infrastructure needs arising from the development of their area and address them in their local plans. Boroughs should cooperate across boundaries (including outside Greater London where appropriate) to identify and address potential capacity shortfalls in the wider energy network serving their area. Where land is required for infrastructure, boroughs should allocate suitable sites.
5.5 Decentralised Energy Networks	Strategic A The Mayor expects 25 per cent of the heat and power used in London to be generated through the use of localised decentralised energy systems by 2025. In order to achieve this target the Mayor prioritises the development of decentralised heating and cooling networks at the development and area wide levels, including larger scale heat transmission networks. LDF preparation B Within LDFs boroughs should develop policies and proposals to identify and establish decentralised energy network opportunities. Boroughs may choose to develop this as a supplementary planning document and work jointly with neighbouring boroughs to realise wider decentralised energy network opportunities. As a minimum boroughs should: a identify and safeguard existing heating and cooling networks b identify opportunities for expanding existing networks and establishing new networks. Boroughs should use the London Heat Map tool and consider any new developments, planned major infrastructure works and energy supply opportunities which may arise c develop energy master plans for specific decentralised energy opportunities which identify: – major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing) – major heat supply plant – possible opportunities to utilise energy from waste – possible heating and cooling network routes – implementation options for delivering feasible projects, considering issues of procurement, funding and risk and the role of the public sector d require developers to prioritise connection to existing or planned decentralised energy networks where feasible.
5.6 Decentralised Energy in Development Proposals	Planning decisions A Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites. B Major development proposals should select energy systems in accordance with the following hierarchy: – 1 Connection to existing heating or cooling networks; – 2 Site wide CHP network; – 3 Communal heating and cooling;

	C Potential opportunities to meet the first priority in this hierarchy are outlined in the London Heat Map tool. Where future network opportunities are identified, proposals should be designed to connect to these networks.
5.7 Renewable Energy	Strategic A The Mayor seeks to increase the proportion of energy generated from renewable sources, and expects that the projections for installed renewable energy capacity outlined in the Climate Change Mitigation and Energy Strategy and in supplementary planning guidance will be achieved in London. Planning decisions B Within the framework of the energy hierarchy (see Policy 5.2), major development proposals should provide a reduction in expected carbon dioxide emissions through the use of on-site renewable energy generation, where feasible. LDF preparation C Within LDFs boroughs should, and other agencies may wish to, develop more detailed policies and proposals to support the development of renewable energy in London – in particular, to identify broad areas where specific renewable energy technologies, including large scale systems and the large scale deployment of small scale systems, are appropriate. The identification of areas should be consistent with any guidelines and criteria outlined by the Mayor. D All renewable energy systems should be located and designed to minimise any potential adverse impacts on biodiversity, the natural environment and historical assets, and to avoid any adverse impacts on air quality.
5.8 Innovative Energy Technologies	Strategic A The Mayor supports and encourages the more widespread use of innovative energy technologies to reduce use of fossil fuels and carbon dioxide emissions. In particular the Mayor will seek to work with boroughs and other partners in this respect, for example by stimulating: a the uptake of electric and hydrogen fuel cell vehicles b hydrogen supply and distribution infrastructure c the uptake of advanced conversion technologies such as anaerobic digestion, gasification and pyrolysis for the treatment of waste. LDF preparation B Within LDFs boroughs may wish to develop more detailed policies and proposals to support the use of alternative energy technologies (particularly in infrastructure and masterplanning opportunities).
5.9 Overheating and Cooling	Strategic A The Mayor seeks to reduce the impact of the urban heat island effect in London and encourages the design of places and spaces to avoid overheating and excessive heat generation, and to reduce overheating due to the impacts of climate change and the urban heat island effect on an area wide basis. Planning decisions B Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this in accordance with the following cooling hierarchy: 1 minimise internal heat generation through energy efficient design

	2 reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls 3 manage the heat within the building through exposed internal thermal mass and high ceilings 4 passive ventilation 5 mechanical ventilation 6 active cooling systems (ensuring they are the lowest carbon options). C Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible. Further details and guidance regarding overheating and cooling are outlined in the London Climate Change Adaptation Strategy. LDF preparation D Within LDFs boroughs should develop more detailed policies and proposals to support the avoidance of overheating and to support the cooling hierarchy.
5.14 Water Quality and Water Capture	Planning decisions C Development proposals to upgrade London's sewage (including sludge) treatment capacity should be supported provided they utilise best available techniques and energy capture.
5.17 Waste Capacity	Planning decisions B Proposals for waste management should be evaluated against the following criteria: – achieving a positive carbon outcome of waste treatment methods and technologies (including the transportation of waste, recyclates and waste derived products) resulting in greenhouse gas savings. Facilities generating energy from waste will need to meet, or demonstrate that steps are in place to meet, a minimum CO2eq performance of 400 grams of CO2eq per kilowatt hour (kwh) of electricity produced. Achieving this performance will ensure that energy generated from waste activities is no more polluting in carbon terms that the energy source it replaces (see paragraph 5.85 below). The following will be supported: – j developments that contribute towards renewable energy generation, in particular the use of technologies that produce a renewable gas – k developments for producing renewable energy from organic/biomass waste. C Wherever possible, opportunities should be taken to provide combined heat and power and combined cooling heat and power.

Draft New London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 9 Sustainable Infrastructure	
Policy SI2 Minimising	A Major development should be net zero-carbon. This means reducing carbon dioxide emissions from construction and operation, and minimising

greenhouse gas emissions	both annual and peak energy demand in accordance with the following energy hierarchy: 1) Be lean: use less energy and manage demand during construction and operation. 2) Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly. Development in Heat Network Priority Areas should follow the heating hierarchy in Policy SI3 Energy infrastructure. 3) Be green: generate, store and use renewable energy on-site. B Major development should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy and will be expected to monitor and report on energy performance. C In meeting the zero-carbon target a minimum on-site reduction of at least 35 per cent beyond Building Regulations117 is expected. Residential development should aim to achieve 10 per cent, and non-residential development should aim to achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided: 1) through a cash in lieu contribution to the relevant borough's carbon offset fund, and/or 2) off-site provided that an alternative proposal is identified and delivery is certain. D Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver greenhouse gas reductions. The operation of offset funds should be monitored and reported on annually.
Policy SI3 Energy infrastructure	A Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy requirements and infrastructure arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development. B Energy masterplans should be developed for large-scale development locations which establish the most effective energy supply options. Energy masterplans should identify: 1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing) 2) heat loads from existing buildings that can be connected to future phases of a heat network 3) major heat supply plant 4) possible opportunities to utilise energy from waste 5) secondary heat sources 6) opportunities for low temperature heat networks 7) possible land for energy centres and/or energy storage 8) possible heating and cooling network routes 9) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works 10) infrastructure and land requirements for electricity and gas supplies 11) implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector. C Development Plans should:

	1) identify the need for, and suitable sites for, any necessary energy infrastructure requirements including upgrades to existing infrastructure 2) identify existing heating and cooling networks and opportunities for expanding existing networks and establishing new networks. D Major development proposals within Heat Network Priority Areas should have a communal heating system 1) the heat source for the communal heating system should be selected in accordance with the following heating hierarchy: a) connect to local existing or planned heat networks b) use available local secondary heat sources (in conjunction with heat pump, if required, and a lower temperature heating system) c) generate clean heat and/or power from zero-emission sources d) use fuel cells (if using natural gas in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) e) use low emission combined heat and power (CHP) (in areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler) f) use ultra-low NOx gas boilers. 2) CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that there is no significant impact on local air quality. 3) Where a heat network is planned but not yet in existence the development should be designed for connection at a later date.
Policy SI7 Reducing waste and supporting the circular economy	A Waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by: 4) meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon energy in London from suitable remaining waste: a) municipal waste127 – 65 per cent by 2030 b) construction, demolition and excavation waste – 95 per cent by 2020
Policy SI8 Waste capacity and net waste self-sufficiency	C The following are particularly encouraged – development proposals which: 3) contribute towards renewable energy generation, especially renewable gas technologies from organic/biomass waste. D Developments proposals for new waste sites or to increase the capacity of existing sites should be evaluated against the following criteria: 3) achieving a positive carbon outcome (i.e. re-using and recycling high carbon content materials) resulting in significant greenhouse gas savings - 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

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
Mayor's Priority: Site	The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider:

Layout and Building Design	energy demands and the ability to take advantage of natural systems and low and zero carbon energy sources;
Mayor's Priority: Energy and carbon dioxide emissions	The overall carbon dioxide emissions from a development should be minimised through the implementation of the energy hierarchy set out in London Plan policy 5.2. Developments should contribute to ensuring resilient energy infrastructure and a reliable energy supply, including from local low and zero carbon sources.
Mayor Priority: Efficient Energy Supply	Where borough heat maps have identified district heating opportunities, boroughs should prepare more detailed Energy Master Plans (EMPs) to establish the extent of market competitive district heating networks. Developers should assess the potential for their development to: – connect to an existing district heating or cooling network; – expand an existing district heating or cooling network, and connect to it; or – establish a site wide network, and enable the connection of existing buildings in the vicinity of the development. Where opportunities arise, developers generating energy or waste heat should maximise long term carbon dioxide savings by feeding the decentralised energy network with low or zero carbon hot, and where required, cold water.
Mayor's Priority: Renewable Energy	Boroughs and neighbourhoods should identify opportunities for the installation of renewable energy technologies in their boroughs and neighbourhoods. Major developments should incorporate renewable energy technologies to minimise overall carbon dioxide emissions, where feasible.
Mayor's Best Practice: Monitoring Energy Use	Developers are encouraged to incorporate monitoring equipment, and systems where appropriate to enable occupiers to monitor and reduce their energy use.
Mayor's Best Practice: Supporting a Resilient Energy Supply	Developers are encouraged to incorporate equipment that would enable their schemes to participate in demand side response opportunities.
2.3.5	Mix of land uses 2.3.5 Where appropriate boroughs should encourage a mix of land uses to reduce the need for local residents and visitors to travel. A range of complementary uses will promote vibrant communities. A mix of uses with varying energy demands <u>can also support decentralised energy generation and networks.</u>
2.4.6	Where a planning application includes refurbishment or retrofitting works for a major development, applicants should summit energy strategies which follow the energy hierarchy and demonstrate appropriate reductions in carbon dioxide emissions. Whilst the targets in policy 5.2 apply to major developments, it is acknowledged that for many schemes involving existing buildings it will be a challenge to meet these target, except perhaps where a

	development can connect to a low or zero carbon energy source. Where boroughs receive a large number of applications for refurbishments or changes of use they are encouraged to develop local policies to maximise the reduction in carbon dioxide emissions from these schemes. See paragraphs 2.4.12 to 2.4.30 for more details on connecting to an efficient energy supply and paragraphs 2.5.26 to 2.5.29 for further details on retrofitting.
2.4.10	2.4.10 Following are some of the easiest and most cost-effective measures developments can incorporate to help them reach the London Plan carbon dioxide targets. Some measures can be directly influenced through design and therefore are direct planning matters. Other internal design features and mechanical systems are influenced by the Building Regulations. Both types of measures will need to be implemented to help developments reach the London Plan carbon dioxide targets. In their energy assessment developers should demonstrate how they have considered, and where practical included the following measures: Active measures • include carbon dioxide efficient heating systems – such as efficient ultra-low NOx gas boilers for small schemes, low temperature heating eg underfloor, community heating systems, combined heat and power plants for large schemes (to be considered as the second element of the energy hierarchy). Boilers fed with a renewable fuel, solar thermal for small schemes or other renewable heat technology (to be considered as part of the third element of the energy hierarchy). Careful consideration needs to be given to the air quality implications of heating plant, especially those burning solid or liquid fuel. See section 4.3 and Appendix 7 for emissions standards for CHP and biomass; • include heat recovery – collecting waste heat from domestic and commercial activities to pre-heat air or water for heating or hot water systems. Basic systems include plumbing that enables the warm waste water from showering to pre-heat the water for the remainder of that shower. • maximise natural cooling and efficient cooling systems, where required – including chilled beams, evaporation cooling; • select efficient ventilation systems, where required – including ventilation with heat recovery, which is a growing requirement due to the increased air tightness of buildings. Passive ventilation with heat recovery units, that do not require electricity, are preferred; • incorporate low energy mechanical services; • maximise energy efficient lighting systems, such as using LEDs and occupancy and daylight sensors. The latter measures can reduce electricity use by 30% and 40% respectively; and • incorporate other energy efficient and saving equipment such as heating controls, individual controls, zoning, movement sensors, photo sensors, timers, metering, building management and monitoring systems. Energy efficient appliances generally generate less heat and can help minimise the build up of heat within buildings.
2.4.12 – 2.4.14	London Plan policy 5.5 sets out how boroughs, in conjunction with land owners, heat suppliers and developers should identify the opportunities for district heating networks in their areas. London boroughs have prepared borough wide heat maps. Details of these can be found on the London Heat Map website. These heat maps should feed into boroughs' Local Plans and, where appropriate, neighbourhood plans.

	Where borough heat maps show potential for a district heating network, more detailed energy master plans should be prepared for these areas by local authorities or, in an area of growth, the landowners. The preparation of a more detailed energy master plan is especially encouraged where an Opportunity Area Action Plan or the Area Action Plan or Site Allocations element of a Local Plan are being prepared. Where indicated by a borough's energy master plan, boroughs should cooperate with adjoining boroughs to prepare an area wide energy master plan. As a minimum energy master plans should identify: • the extent of the potential market competitive district heating network; • the potential phasing for the delivery / construction of the network; • existing and potential sites with sufficient high heat demand to justify connection; • sites and undertakings that generate waste heat that could be supplied to the district heating network over time; • known sites to be redeveloped; • areas of growth; • potential locations for energy centres; and • pipe routes for the purposes of safeguarding and future-proofing their later installation where other works take place in the meantime ie road improvements, public realm works, etc. The Mayor's District Heating Manual for London provides some details on how to finance district heating networks and management of the sale of energy. From time to time there is financial support for boroughs interested in delivering district heating networks. These are generally provided through the Department of Energy and Climate Change .
2.4.16	Facilitating district heating networks through development London Plan policy 5.6 sets out a hierarchy for developing a scheme's heating network, and where required, cooling systems. This section of the guidance is likely to be relevant to larger schemes with a substantial heat load comprising two or more buildings. However, there may be specific circumstances where it could be applied to smaller schemes, for example, where development sites are adjoining, so an initial heat network is created to allow developments to share energy production plant. The connection would be a relatively short pair of pipes across the site boundary. The connecting up of such sites can make CHP feasible and viable where otherwise it would not have been, thereby increasing energy efficiency and carbon dioxide savings and contributing to London's energy infrastructure.
2.4.17 – 2.4.20	Feasibility and viability When determining whether it is feasible to connect to an existing district heating network, developers should consider the following measures, as appropriate: • the size of the development, and the heat load and energy demands throughout the year; • the distance of the development to the district heating network or proposed networks; • the presence of physical barriers such as major roads or railway lines in making a connection to the network; and • the cost of connection and the impact this has on financial viability of the heat supply.

	When determining whether it is feasible to install an energy centre and establish a heating and/or cooling network, the following measures should be considered, as appropriate: • the size and density of the development, and the heat load and energy demands throughout the year; • the heat load and energy demands throughout the year and density of surrounding built environment. • the proximity of and potential supply to any public sector estates and buildings with communal heating systems, especially use such as swimming pools, hospitals and large housing estates; and • the ability to secure agreements for the connection of nearby buildings or estates. 2.4.19 The economic evaluation of the heat supply option should be carried out on whole life costing over a 30 year period. It should note the Mayor's strategic target for local energy generation across London and the potential wider contribution the scheme would make to this target. The viability should be compared with the case where an energy centre and decentralised energy network is not installed. Developers should discuss with the relevant borough the appropriate considerations prior to submitting their planning application, and their feasibility assessment should form part of the energy strategy submitted with the planning application. Please see the Mayor's Guidance for developers on preparing Energy Assessments for more detailed information. 2.4.20 Where the heating plant proposed is CHP and a development proposal consists of a number of buildings or where a borough is considering which site should house the plant, consideration should be given to making the best financial use of the electricity generated. For example, if a building has a high electrical demand then placing the CHP plant within this building will enable that scheme to make the greatest financial savings from the use of the electricity as opposed to exporting the electricity to the national distribution network for a nominal price. An alternative solution could be to sell the electricity output under a Licence Lite arrangement.
2.4.21 – 2.4.25	Timing of Connection 2.4.21 One of the key challenges of developing a new district heating network is the timing between the delivery of the new network and the completion of new developments which are to be connected to the network. Paragraph 8.2.2 of the Mayor's District Heating Manual for London sets out the three most likely scenarios where development precedes the expansion of a district heating network and the preferred design responses for each. In summary these are as follows: Where an Energy Master Plan or similar studies identify the feasibility of an areawide heat network but no firm plans exist as to who will build the network or by when. Design responses should include: • be 'future proofed' to enable connection - provision of a single plant room producing all hot water, including engineering measures to facilitate the connection of an interfacing heat exchanger; • space identified for the heat exchanger; • provisions made in the building fabric such as soft-points in the building walls to allow pipes to be routed through from the outside to a later date; and • external pipework routes identified and safeguarded.

	Where there is a district heating network being delivered but there is no programme to connect the development as it would not be viable to connect. Design responses should include: • the development should be designed on the basis of its own efficient heating plant, such as CHP, where appropriate, and 'future-proofed', as above; • where it has been identified in the district heating master plan that there is potential for the district heating network to be extended towards the development, allowance could be made to defer investment (installation) in the plant for a specified period. This would enable a further viability study to be carried out, say, five years after the original permission to determine whether it is now feasible to connect to the extended district heating system; and • during the 'deferred' period, the development will be supplied with heat from its own heat only boilers. Where there are firm plans to connect the development to the heat network, but the network build-out will not reach the new development until some years after the development is complete. Design responses should include: • the development should design for a district heating connection from the outset; and • heat should be provided by temporary local heat-only boiler. 2.4.25 Where the scheme is to connect to a district heating system, designers should ensure the design of the heating system is compatible with the district heating system. Boroughs should secure the appropriate measures by condition or s106 agreement as part of any planning permission. Further details on what should be secured at planning stage for these scenarios are provided in the Mayor's District Heating Manual for London. The Manual also provides advice for designing, constructing and managing district heating networks, as well as potential ways to manage the sale of heat and heat contracts.
2.4.26 – 2.4.27	Site wide heating network and communal heating 2.4.26 In accordance with London Plan policy 5.6, where a development consists of several buildings, each building should be served by communal heating and a site wide heating network should be considered and established, where appropriate. In addition to the strategic advantages of being able to connect to a district heating either immediately or in the future. The main benefit of district heating in the longer term is expected to be the carbon savings they can deliver by accessing sources of waste heat e.g. industrial waste heat, heat generated from municipal waste, etc. As such, communal heating schemes on individual sites are not installed to achieve carbon dioxide savings compared to individual boilers in the short term, but to maintain the ability of buildings to be supplied by low carbon, waste heat sources in the future . 2.4.27 Even where the development may not connect to a wider district heating network, individual buildings should consider communal heating systems, and installed them where appropriate. This approach enables the whole development to convert to new low and zero carbon heating technologies at the same time in the future, making it easier and more economically viable to upgrade plant. However, in lower density development consideration needs to be given to the size, density and heating demands of the occupiers to balance the

	financial costs of the heating network and any heat distribution losses and the overall carbon dioxide savings. 2.4.28 Where there is an additional cost in energy supplied by a communal heating network and it is considered this additional cost to residents does not out-weigh the long term carbon dioxide savings, the development should still be designed to enable the retrofit of an alternative heating system in the future. Further details on how this can be accommodated in a scheme can be found in the Mayor's District Heating Manual for London.
2.4.29	Preventing overheating from communal heating systems The Mayor has produced the report Designing Communal Heating Systems in Residential Developments which sets out measures that should be implemented to prevent overheating by communal systems. Section 3.2 provide further guidance on how to limit overheating within buildings.
2.4.30	Energy from waste and heat sources 2.4.30 Every opportunity should be taken to utilise waste heat, including from heat rejection equipment or to generate energy and heat from waste. For some types of heat generation mitigation measures may be required to ensure the scheme minimises any harmful effects of emissions into the air. See chapter 4 for more details on protecting air quality.
2.5.1	Local Plans Boroughs should refer to the Mayor's London Decentralised Energy Capacity Study Phase 1: Technical Assessment to help them assess the potential for renewable energy technologies in their boroughs. This report provides a methodology for assessing the potential for renewable energy technologies and the broad potential locations for some technologies in London. Boroughs may wish to identify particular opportunities provided by renewable energy technologies to reduce the carbon dioxide emissions from smaller developments where decentralised energy and combined heat and power will generally not be viable.
2.5.3	Developments 2.5.3 Although the final element of the Mayor's energy hierarchy, major developments should make a further reduction in their carbon dioxide emissions through the incorporation of renewable energy technologies to minimise overall carbon dioxide emissions, where feasible. Boroughs should secure measures as a part of the development's overall energy strategy. 2.5.4 Renewable energy can provide heat or electricity. It is essential that the renewable energy technology incorporated into a scheme complements the primary heating or cooling equipment. For example, where combined heat and power is proposed, electricity generating technologies such as photovoltaics would complement the heat generating technology. The London Plan (paragraph 5.39) lists a few priority technologies for strategic development. 2.5.5 Developers should ensure that the renewable energy technology chosen will result in lower carbon dioxide emissions than traditional technologies. Energy generated from renewable energy technologies should be monitored separately. This will enable occupiers to take advantage of the energy as it is generated on-site.
2.5.7	Off-site provisions 2.5.7 Boroughs may agree with a developer for the developer to directly offset any shortfall in carbon dioxide reductions from a scheme by installing

	a carbon dioxide saving project off- site. Measures could include directly funding or installing community energy and retrofitting projects. For example, a developer could install photovoltaics on a nearby school. The CIL regulations need to be taken into account when securing these arrangements. The borough should ensure that the off-setting measure provides added value - that is, the measure would be unlikely to be funded through another means. Boroughs should secure off-setting measures through s106 agreements.
2.6.14	Abstraction of groundwater Abstraction of groundwater in London is limited and is generally of variable quality. Where ground water is available it can provide an important alternative source to potable water, especially for industrial purposes, watering landscaping or flushing toilets. The consistent ground temperature means that ground water can be used for low energy cooling. See section 2.4 on renewable energy for more details.

Mayor's Sustainable Design and Construction SPG (2014)

Policy/ paragraph reference	**Policy and paragraph text**
Mayor's Priority: Site Layout and Building Design	The design of the site and building layout, footprint, scale and height of buildings as well as the location of land uses should consider: energy demands and the ability to take advantage of natural systems and low and zero carbon energy sources;

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
Principle E4	Proposals should: a. ensure that Old Oak and Park Royal area is an exemplar of low carbon development; and b. commit to achieving the highest standards of energy efficiency and low/ zero carbon technology.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	**Alternative policy option**
12.66	Policy Option: "To delete the policy reference to 'major' development, so that the policy requirements apply to 'all' development." This would put the onus on all developments to contribute to the de-centralised energy network. This option would deliver greater sustainability

	but could be difficult and costly to deliver, creating greater uncertainty of delivery and impact on the viability of smaller schemes.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Energy: Concerns were raised that OPDC has jumped to the solution of district heating without having adequately considered other energy sources. Requests were made that the next draft of the Local Plan be more specific on infrastructure requirements, such as the size of the energy centre and where and when it needs delivering.	WRc, London Sustainable Development Commission, 1 local business, 1 local resident Grand Union Alliance, Old Oak Park (DP9)	Change proposed. The Local Plan is supported by a Utility Study which has explored a number of energy systems. OPDC's energy systems policy appropriately embeds the recommendations from this study into the Local Plan. Energy systems infrastructure requirements are included in OPDC's Infrastructure Delivery Plan (IDP).
Promoting energy from waste is a misunderstanding of the circular economy concept and there are more sustainable ways of achieving local energy production. The waste hierarchy should be referenced in the policy	Grand Union Alliance, WRc, London sustainable Development Commission	Change proposed. The policy firstly requires waste to be managed up the waste hierarchy with measures to minimise and re-use waste prioritised. OPDC has separate Circular and Sharing Economy and Sustainable Materials policies which also support this approach. However, aside from these approaches, there is a need to consider EfW, which can also be of benefit for OPDC's approach to district heating and cooling.
The London Assembly Environment Committee Growing, Growing, Gone Report, March 2016 gives a more accurate explanation of Circular economy which does not substantiate the proposal for energy from waste advanced in EU8 para12.51 and EU4 waste Management policy to which this comment also applies.	Grand Union Alliance	No change proposed. OPDC has developed a detailed Circular and Sharing Economy Strategy in support of the Local Plan. This strategy and the Local Plan policies (specifically the Waste, Circular and Sharing Economy and Sustainable Materials policies) require waste to be managed up the waste hierarchy with

		measures to minimise and re-use waste prioritised. However, there is also a need aside from this to consider EfW, which can also be of benefit for OPDC's approach to district heating and cooling.
Information on the feasibility and implementation of the Energy Centre, connections, implementation and management, the impact of new regulations and renewable/innovative technologies is lacking. The size of an Energy Centre is likely to be large and its location is unknown. Analysis of the size and potential levels of nuisance and disturbance from the Centre have to be provided.	Grand Union Alliance	Change proposed. Details on the energy centre requirements are set out in OPDC's Utility Strategy and in OPDC's Infrastructure Delivery Plan (IDP).
Efficient, value for money decentralised energy network/CCHP/CHP needs an optimum number of users to be linked in. Development at North Acton is a missed opportunity	Grand Union Alliance	Change proposed. The policy supports the need for developers to connect in to a strategic area wide network, where one is available at the time the development is being constructed. However, a strategic area wide network will require significant funding and financing to deliver and it may take time and so the policy also requires that where the area-wide network is not available or viable, the development should be future-proofed to connect into a future network when/if it becomes available and deliver on-site low carbon heat solutions.
The section on decentralised energy assumes that energy can mainly be generated in energy centres rather than seeing the opportunities for energy generation in the infrastructure that is being developed	WRc	Change proposed. The energy systems policy has been broadened out to identify other alternative sources of energy and heat generation.
Section needs to reference importance of heat as part of energy supply	WRc	Change proposed. The energy systems policy and supporting text note the importance of heat as part of

		energy infrastructure provision.
District heating systems can be inefficient if not accompanied by an adequate control system	Resident	Noted. The energy systems policy (EU10) requires that developments accord with the specification requirements in OPDC's Infrastructure Delivery Plan to avoid this.
Should investigate the potential for generating energy from an anaerobic digester	Resident, London Waste Planning Forum	Change proposed. Policy EU6 requires proposals for new or enhanced waste facilities to, if relevant and appropriate, deliver anaerobic digestion and / or other bio-waste treatment and additional recycling facilities particularly to support greater levels of recovery in accordance with the waste hierarchy.

Regulation 19(1) consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
CRT support the use of cooling and heating from the canal, and would like to see it strengthened by requiring developers to test feasibility. Also include reference in GUC.18 and EU9.	CRT	No change proposed. OPDC and the GLA have policies that promote zero carbon development. In order to achieve this target developers will have to look for the most technically achievable and financially viable way to meet this target. OPDC will promote the use of low carbon heat and cooling networks where appropriate and are investigating different ways to promote this. OPDC will meet with CRT to discuss the potential to use the canal for heating and cooling including technical issues and capital and revenue costs.
Hierarchy needs to consider specific site conditions and viability.	Castlepride Ltd	No change proposed. The hierarchy is set out in the London Plan and viability is always a consideration in accordance with national policy and Policy DI1. OPDC will promote adoption of the hierarchy where viable.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Welcome policy aspirations and requirements to support a low carbon and resilient energy network, but would suggest adding clarification text around demand forecasts for Park Royal.	Park Royal Business Group	No change proposed. OPDC accepts that demand needs to be managed and supply enhanced to meet the needs of existing and new businesses.
Support approach to developing a strategic decentralised heat network, but are concerned that polices, in particular Energy from Waste, are focused on Old Oak and not Park Royal.	Park Royal Business Group	No change proposed. Policy EU10 covers both Old Oak and Park Royal. OPDC will work with Park Royal Business Group to investigate opportunities to develop low carbon energy systems in Park Royal where appropriate.
Request that OPDC considers how the plan might address issues with power capacity to help new and existing businesses operate more effectively.	Segro	No change proposed. The Local Plan deals with the power requirements for new development and the requirements for this are also detailed in the Utilities Study and Infrastructure Delivery Plan.
Question whether the OPDC area is an appropriate location for energy from waste schemes and if all impacts be sufficiently mitigated, No evidence base presented. One consultee opposes EfW.	LBHF, Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The policy promotes the adoption of the energy hierarchy in conformity with the London Plan and the supporting text highlights some of the low carbon heat sources that could be adopted subject to detailed review and assessment of impacts. Air quality will have to be addressed as part of any proposal in line with the mayor's policy for Opportunity Areas to be Air Quality Positive, before OPDC will support any specific technology or proposal.
Policy not sound. No justification provided	Friary Park Preservation Group	No change proposed. OPDC officers believe the policy and supporting study are sound and will help to promote the use of low carbon energy systems in compliance with the London Plan.
As the highway authority and development agency, OPDC should ensure there is accurate mapping of utilities across the area	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC is not the Highway Authority. The Host Boroughs have retained their responsibility for highways. However, OPDC in its capacity as a development corporation will work closely with the Boroughs to collect relevant data. Utilities data is presented in OPDC's Utilities Study.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Support policy but developers may resist this so OPDC needs to assist and manage the delivery of a district energy network	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted. OPDC have done work to investigate different options for delivering a low carbon heat and cooling network.
Concern that ambition will not be achieved as policies not ambitious enough	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC considers the policy is ambitious, but has to balance ambition with viability and delivery. OPDC in its role as a development corporation will seek to work with partners, the GLA and government to deliver the highest standards of development possible within the financial and other constraints in which OPDC and its partners have to work.
Energy centre strategy could impact on amenity of area	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. Energy centres would need to accord with other local plan policies such as air quality (EU4) and amenity (D6).
The decentralised energy system should be resilient and designed around a block level approach	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC's Utilities Study identifies a strategic network as a preference, which is shown to be more resilient and to potentially better support the Mayor's zero carbon aspirations, but if this is not in place or feasible, the policy supports a development by development, or block by block approach.
The Policy is generally supported, but reference is needed to require all low carbon and communal combustion systems to demonstrate that they will not have unacceptable impact.	LBHF	No change proposed. Reference to the need for any proposal to accord with air quality policy EU4 is included in the supporting text. Any proposal would need to accord with other relevant policies in the local plan and the London Plan. The NPPF is also a material consideration. It is not considered appropriate to repeat this within the policy or supporting text.

What is the issue?	Who raised the issue?	What are we doing to address the issue?
The plan should recognise the need for a cooling network	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Change proposed. This has been added as a policy requirement. Current work shows that this is only likely to be viable however, when delivering large-scale commercial developments.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Policy should recognise that some energy generating technologies, including low carbon solutions, can have an unacceptable impact on local air quality. Where a proposed system is considered to have an unacceptable impact in this respect, alternative energy systems should be used.	London Borough of Hammersmith and Fulham	No change proposed. The need for development to minimise emissions from combustion based sources of energy is addressed within Policy EU4 (Air Quality).
Details of indicative heat network and energy centre locations should included in the plan, if known.	London Borough of Hammersmith and Fulham	No change proposed. The indicative locations for future energy centres are identified in the Infrastructure Delivery Plan, which will be updated on an annual basis. If, or when, more details of future energy networks become available this will be captured as part of future updates to the IDP.
Support the principle of district heating and cooling systems, but question how this will be funded.	Grand Union Alliance	Noted. No change proposed. OPDC is working with relevant stakeholder to identify funding for strategically planned district energy networks, and will seek financial contributions through Section 106 Planning Obligations and/or CIL. Further details will be provided as part of OPDC's Planning Obligations SPD , and details of other potential funding sources will be included in future updates to OPDC's Infrastructure Development Plan.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting study	Recommendations
Environmental Standards Study	Site energy infrastructure – thermal • OPDC will work with utility companies, energy service providers, regulators and developers to support development of onsite multi-source, lower temperature heat (MSLTH) networks capable of integrating heat supply from CHP (fossil fuel, biofuel or solid waste incineration fired), conventional boilers, secondary sources such as industrial waste heat, rejected heat from buildings and infrastructure, solar thermal panels, as well as heat from lower grade 'natural' sources (water, ground and sewerage networks). MSLTH networks would also incorporate heat storage to help manage demand peaks. • OPDC will work with utility companies, energy service providers, regulators and developers to support development of onsite multi-source, higher temperature cooling (MSHTC) networks capable of integrating cooling supply from mechanical chillers (electric and absorption (direct gas or waste heat fired)), ground or water sources and thermal storage. Other options for producing cooling supply, such as free cooling and thermo-syphon cycles, should also be considered. Energy from Waste • OPDC will work with developers, waste management service providers, Park Royal industrial businesses and the utility regulators to support development of onsite energy from waste (EfW) / Anaerobic Digestion (AD) facilities capable of handling existing and potential waste streams from both Park Royal and Old Oak. Facilities with smaller scale waste inputs and energy outputs will be preferred, to support flexibility and scalability in connecting EfW / AD plant to the onsite heating / cooling network.
Infrastructure Delivery Plan	IDP identifies the following energy infrastructure requirements to support the Draft Local Plan: • Site Specific Decentralised Energy Delivery • Strategic Area-wide District Heat Network • Maintenance, renewal and replacement of electricity supply infrastructure • New substations either situated at the centre or on the periphery of the area. Number and size of substations yet to be determined. • Maintenance, renewal and replacement of gas supply infrastructure
Utilities Study	The preferred approach is for a strategic district heating network, centred around 5 clusters. This would require upfront funding however, so the Local Plan should continue to have a back-stop option requiring developers to deliver heating on-site where no strategic network exists. Priority should be given to zero and low carbon heat sources. • Electricity demand is estimated to be 120MW. There is currently 11MW spare capacity. Recommendations for the delivery of the new network are centred on: - Engage with large developers and electricity users such as HS2;

	- Start competitive dialogue with potential independent distribution network operators (IDNOs); and - Investment ahead of need may be required and funding sources for this should be explored.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	Site energy infrastructure – electrical: • OPDC will work with utility companies, energy service providers, regulators and developers to support development of an onsite 'virtual power plant' (VPP). The VPP will be developed using modern smart grid technology capable of integrating electrical supply from a range of local sources, including CHP plant, energy from waste plant, solar PV arrays and energy storage. The VPP will be connected to the national grid. Using advanced control systems the VPP will be developed to flexibly respond to and balance fluctuations in both generation and demand.	• Recommendation will be considered further to inform potential future SPDs.

Other evidence base

Supporting Study	Recommendations
London Heat Network Manual (2014)	9.2 Planning of network development One of the key challenges of developing a new heat network is the timing between the delivery of the new network and the completion of new developments which would be connected to the network. If the network is delivered early, viability may be affected by delays to consumer connections. If it is delivered late, new developments may need to secure contingency supplies of heat, or they may have to commit to alternative heat supply solutions. This section provides some guidance of how to address this issue through planning. There are essentially three cases to consider assuming that a new building development falls within an Energy Master Plan (EMP) that proposes a heat network. These are identified below and commentary provided on options for the new development.

	Case A: Where an EMP identifies the feasibility of an area-wide heat network but no firm plans exist as to who will build the network or by when: The development should 'future-proof' a connection assuming it has a single energy centre for the site (or plant room if a single building development) producing heat for space heating and domestic hot water. Futureproofing involves providing 'tees' and isolation valves in the hot water headers to facilitate the connection of an interfacing heat exchanger at a later date. • A space reservation could be provided for the heat exchanger, or it could be planned that the heat exchanger replaces a heat-only boiler at time of making the connection to the heat network. • Provision should be made in the building fabric to facilitate future heat network connections; • External buried pipe work routes should be safeguarded to a nearby road way or similar location where connection to the main heat network would be made. Case B: Where there is a heat network being delivered but there is no programme to connect the development due to its distance from the network and the lack of plans for intervening sites: • The development should be designed on the basis of its own heat solution, and 'futureproofed' according to the guidelines given above; • Allowance could be made to defer installation of more costly heating plant (such as lower carbon CHP engines or heat pumps) for, say, five years to allow time for the heat network to be constructed and connected to the network. Once the network connection is made, the requirement to install such plant falls away. • If the heat network connection is not made within the deferral period and there is no reasonable prospect of doing so, then the development should be required to install the lower carbon generation system. A planning obligation could be employed from the outset to ensure the installation is carried out. • During the deferral period, the development would be supplied with heat from its own simpler system (e.g. heat-only boilers); it should be noted that this will affect the carbon emissions from the development during this period. • The developer could be given a planning condition allowing any 'freed-up' plant space resulting from the heat network connection to be used for more profitable purposes (e.g. an extra parking space). Case C: Where there are firm plans to connect a development to the heat network, but the network build-out will not reach the new development until some years after the development is complete: • The development should design for a heat network connection from the outset, taking account of the flow and return temperature specification of the heat network. • Heat should be provided by temporary on-site generation plant, which could be provided by the entity responsible for the heat network as part of the supply agreement.

EU11: Smart Technology

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
29	Transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. Smarter use of technologies can reduce the need to travel. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas.
42	Advanced, high quality communications infrastructure is essential for sustainable economic growth. The development of high speed broadband technology and other communications networks also plays a vital role in enhancing the provision of local community facilities and services.
43	In preparing Local Plans, local planning authorities should support the expansion of electronic communications networks, including telecommunications and high speed broadband. They should aim to keep the numbers of radio and telecommunications masts and the sites for such installations to a minimum consistent with the efficient operation of the network. Existing masts, buildings and other structures should be used, unless the need for a new site has been justified. Where new sites are required, equipment should be sympathetically designed and camouflaged where appropriate.
44	Local planning authorities should not impose a ban on new telecommunications development in certain areas, impose blanket Article 4 directions over a wide area or a wide range of telecommunications development or insist on minimum distances between new telecommunications development and existing development. They should ensure that: • they have evidence to demonstrate that telecommunications infrastructure will not cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest; and • they have considered the possibility of the construction of new buildings or other structures interfering with broadcast and telecommunications services.
45	Applications for telecommunications development (including for prior approval under Part 24 of the General Permitted Development Order) should be supported by the necessary evidence to justify the proposed development. This should include:

	• the outcome of consultations with organisations with an interest in the proposed development, in particular with the relevant body where a mast is to be installed near a school or college or within a statutory safeguarding zone surrounding an aerodrome or technical site; and • for an addition to an existing mast or base station, a statement that selfcertifies that the cumulative exposure, when operational, will not exceed International Commission on non-ionising radiation protection guidelines; or • for a new mast or base station, evidence that the applicant has explored the possibility of erecting antennas on an existing building, mast or other structure and a statement that self-certifies that, when operational, International Commission guidelines will be met.
46	Local planning authorities must determine applications on planning grounds. They should not seek to prevent competition between different operators, question the need for the telecommunications system, or determine health safeguards if the proposal meets International Commission guidelines for public exposure.
156	Local planning authorities should set out the strategic priorities for the area in the Local Plan. This should include strategic policies to deliver: • the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	**Policy and paragraph text**
No applicable guidance published.	

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 4. London's Economy	
4.1 Developing London's Economy	A The Mayor will work with partners to: • f emphasise the need for greater recognition of the importance of enterprise and innovation
4.10 New and Emerging Economic Sectors	Strategic, planning decisions and LDF preparation A The Mayor will, and boroughs and other relevant agencies and stakeholders should: • a support innovation and research, including strong promotion of London as a research location and encourage the application of the products of research in the capital's economic development • b give strong support for London's higher and further education institutions and their development, recognising their needs for accommodation and the special status of the parts of London where

	they are located, particularly the Bloomsbury/Euston and Strand university precincts • c work with developers, businesses and, where appropriate, higher education institutions and other relevant research and innovation agencies to ensure availability of a range of workspaces, including start-up space, co-working space and 'grow-on' space • d support the development of green enterprise districts such as that proposed in the Thames Gateway • e promote clusters of research and innovation as focal points for research and collaboration between businesses, HEIs, other relevant research and innovation agencies and industry • f support the evolution of London's science, technology, media and telecommunications (TMT) sector, promote clusters such as Tech City and Med City1 ensuring the availability of suitable workspaces including television and film studio capacity.
4.11 Encouraging a Connected Economy	Strategic A The Mayor and the GLA Group will, and all other strategic agencies should: • a facilitate the provision and delivery of the information and communications technology (ICT) infrastructure a modern and developing economy needs, particularly to ensure: adequate and suitable network connectivity across London (including well designed and located street-based apparatus); data centre capability; suitable electrical power supplies and security and resilience; and affordable, competitive connectivity meeting the needs of small and larger enterprises and individuals • b support the use of information and communications technology to enable easy and rapid access to information and services and support ways of working that deliver wider planning, sustainability and quality of life benefits.
6.11 Smoothing Traffic Flow and Tackling Congestion	LDF preparation B DPDs should develop an integrated package of measures drawn from the following: e developing intelligent transport systems to convey information to transport users

Draft New London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 1 Planning London's Future (Good Growth Policies)	
Policy GG5 Growing a good economy	To conserve and enhance London's global economic competitiveness and ensure that economic success is shared amongst all Londoners, those involved in planning and development must: E Ensure that London continues to provide leadership in innovation, research, policy and ideas, supporting its role as an international incubator and centre for learning.
Chapter 6 Economy	
Policy E8 Sector growth	B London's global leadership in tech across all sectors should be maximised.

opportunities and clusters	
Chapter 9 Sustainable Infrastructure	
Policy SI6 Digital connectivity infrastructure	A To ensure London's global competitiveness now and in the future, development proposals should: 1) achieve greater digital connectivity than set out in part R1of the Building Regulations 2) ensure that sufficient ducting space for future digital connectivity infrastructure is provided 3) meet requirements for mobile connectivity within the development and take appropriate mitigation measures to avoid reducing mobile connectivity in surrounding areas 4) support the effective use of the public realm (such as street furniture and bins) to accommodate well-designed and located mobile digital infrastructure.

Mayor's Smart London Plan

Policy / paragraph reference	**Policy and paragraph text**
1. Londoners at the Core	To succeed, 'Smart London' must put people at the core - where Londoners drive innovation as much as technologists, investors or policy agendas to make London an even greater city. The capital presents a particularly challenging environment - reflecting its scale, diversity and complexity, including high levels of inequality. Innovations in technology and the use of data are presenting new ways of meeting peoples' needs, but not all Londoners have access to the technology, or the skills to use it. Engaging London's diverse communities and enabling digital inclusion must be a priority. But, we also need to create the mechanisms and opportunities through which Londoners can get more involved. • Ask Londoners what a 'Smart London' should look like, and deliver: we will mobilise London's communities to help City Hall experiment with different ways of engaging Londoners, businesses and other stakeholders in the value of 'smart' approaches. We will ask what challenges they would like to see addressed and how they can be part of the solution - through the use of new digital tools, social media and online platforms, such as Talk London, the Mayor's online research community. We will use offline platforms to engage different audiences. • Position 'Smart London' as a vehicle for inclusion: encourage innovation in digital technology to meet diverse needs, for example challenge entrepreneurs to innovate with new approaches to health and social care. As part of this the GLA will pilot an online marketplace for flexible volunteering and working, to increase the employability of young people (aged 16-24 years). • Tackle digital exclusion and skills gaps: there are a number of existing initiatives to address digital exclusion, both locally and nationally, but this effort is not well co-ordinated for London. We will seek to identify these and develop a pan-London approach that will enable a more coordinated response to tackling digital skills gaps, and related

	barriers such as access to computer equipment or broadband. We will use London Schools Excellence Funding to increase the uptake of computer science in schools, through enhancing teacher subject knowledge, which is expected to reach up to 450 London schools, and involve 1,500 teachers. The digital hub based around London's Old Street is one of London's fastest growing industries, but it imports talent rather than developing local talent. Supported by the Mayor's Fund for London, 'Tech City Stars' will equip local young people with a digital apprenticeship and route to employment. Through London's 'Tech City Institute', we will promote the creation of digital products and applications (such as coding)', rather than just their consumption, and work with a range of local businesses, London's top tier universities, and other skills providers to address higher level skills gaps.
2. With Open Access to Open Data	Data is the backbone to planning and operating cities. It is used for everything from better managing energy supplies, to putting more trains on at peak hours - ultimately enabling London to cut costs, save energy, improve services, and create efficiencies across the capital. Opening up data around demand, consumption, services, and operations that enable London to function will create transparency, improve efficiency, and open up the potential for innovation. Improving evidence-based decision making, and engaging both businesses and Londoners, will help us to develop the tools that will improve our city, and at scale. The London Datastore was one of the first platforms worldwide to make public data open and accessible. Access to public data has created new markets, encouraging the development of products and services for Londoners. The Datastore receives over 30,000 visits a month, with over 450 transport apps alone having been created. City Hall will continue to work with London boroughs and others to free up more data, and will identify and showcase the value that is generated from its use - supporting the development of new business models and the creation of better, and more cost effective, services for Londoners. We also want to make sure this data is accessible and meaningful to citizens, not just the developer community – so Londoners can compare and challenge public sector performance. We will work to open data standards, simplify and customise datasets, with smart phone and tablet friendly interfaces, engaging content and tools to enable increased interaction between Londoners, policy makers and service providers. If private data sets (which are, by definition, not open data) are brought onto the Datastore, we want to ensure privacy is protected and there is transparent use of data - to ensure data use is managed in the best interests of the public rather than private enterprise. We will develop and adopt a set of standards which we will use to engage the public in how the data may be used, and how this is of benefit to them. • Identify and prioritise: which data are needed to address London's challenges in the Mayor's Long Term Infrastructure Investment Plan, including plans for open data release, the creation of open data guidelines and the adoption of common data standards.

	• Work with London boroughs, and other stakeholders, to free up more of London's data: the Mayor will continue to encourage public and private sector organisations to open up their data. We will establish a Smart London Borough Partnership to identify and showcase how open data can save London boroughs money, and deliver better services. • Create a new London 'Urban Platform': aggregate disparate data sets and connect sensor networks across London (it is estimated that there are over 20 million sensors in the city) into a developer friendly platform, to help shape a second generation London Datastore. We will work with other global cities, through initiatives such as the iCity programme (see following case study), to move towards a common platform that will increase the market for developers and enable the cocreation of services to meet Londoners' needs. • Engaging all Londoners: use London's dashboard and other digital tools to encourage the public as well as developers to engage with London's data. We want to experiment with new ways of linking how London performs on different indicators with what City Hall, or London boroughs, are doing about it.
3. Leveraging London's Research, Technology & Creative Talent	London is home to one of the most significant centres of creativity and culture globally, has more technology companies than any European city, and more top ranking universities than anywhere in the world21. We need to catalyse London's energy, talent and world class research base to solve London's future challenges, create new market opportunities, businesses and jobs (the 'smart city' market is estimated by Arup to be worth $400bn globally by 202022), and export our innovation across the world. As a microcosm of the planet the capital offers the perfect experimental platform. But, London must also provide the supportive ecosystem London's technology community needs to respond and innovate. • Launch a Smart London Innovation Challenge: mobilise Londoners, entrepreneurs and London's research base to solve the capital's growth challenges. • Showcase London's emerging investment opportunities: London is a global finance centre, home to the London Green Fund23 and initiatives such as Level 39 in Canary Wharf - Europe's largest accelerator space for finance, retail and future cities start-ups - which is examining funding options for smart cities. We will build on this and host Smart London Investor Days to attract the global finance that will help emerging solutions to be more rapidly commercialised. • Export London's solutions to the world: run a Smart London Export Programme for London SMEs with UKTI and London & Partners, focusing on high growth global cities. • 4. Ensure London provides the underpinning growth conditions: invest up to £24 million in the provision of affordable ultrafast broadband to SMEs, through London's Super Connected Cities programme; lobby for a new visa to make it easier for talented global technologists to work here, and create a London visa support scheme to allow start-ups and growing businesses to access the talent they need
4. Brought Together Through Networks	London presents a highly sophisticated innovation ecosystem, partly due to its scale, the number and different type of organisations involved - from university led activity (such as Imperial's Digital Economy Lab) to corporate led activity (such as the Siemens Crystal), and accelerator spaces (such as Level 39), to activity led by London boroughs (such as

	Greenwich's Digital Peninsular). There is activity led by charities (such as the Institute for Sustainability), not for profit organisations (such as the Open Data Institute), created by public bodies (such as Transport for London as a key supplier of data to the ecosystem, but also a commissioner of digital infrastructure) and national government (such as the Catapult centres). London's networks are global as much as they are local, reflected in the capital's lead role in establishing and governing the C40 network, a network of the world's megacities taking action to tackle climate change. The Mayor has a critical leadership role to play - both globally, and in harnessing London's vast amount of existing activity. A more transformative impact will be brought about from realising these opportunities at scale through strategic collaboration, and of course significant investment to create real efficiencies across London. • Establish a Smart London Innovation Network: to identify and link up the huge amount of existing and emerging smart city activity. The Network will bring together entrepreneurs, infrastructure providers, IT and software providers, property developers, corporates, London boroughs, universities, investors, and experts to examine 'Smart London' challenges and market opportunities. The Network will support SMEs and the wider ecosystem to seize these market opportunities and scale them up. • Leverage London's global city role: working with other EU (such as Barcelona, Gothenburg, Copenhagen, and Amsterdam) and global cities (such as New York, Singapore and Tokyo) to share experience, and develop 'lighthouse' projects that will demonstrate new approaches at scale • 3. Collaborate with the Future Cities Catapult and the Digital Economy Catapult: to bring together experts from all over the world to work on how London and other cities can take a more integrated approach to the way they plan and function.
5. To Enable London to Adapt and Grow	London has more cranes across the skyline than in the rest of the country put together. Most recent figures show London now boasts 28,000 technology firms, where employment growth has outpaced most other sectors25. The recovery is underway, but continued growth is placing increasing strain on the city's infrastructure - increasing stress not only on transport, but the management of energy and utilities, such as water, electricity and heat, and the need to deal with growing waste and pollution. City Hall is preparing London's first long term infrastructure investment plan to 2050 in response to the challenges and opportunities of growth. If London is to continue to grow, including attracting inward investment and international talent, and maintain its position as one of the greatest cities on earth - new approaches will be a prerequisite. The Mayor's 'opportunity areas', such as Elephant & Castle, Nine Elms, the Greenwich Peninsular and the Queen Elizabeth Olympic Park, present opportunities to use regeneration funds and private sector investment to test out more integrated approaches to building and planning new communities. • Promote the use of smart grid technologies: such as through Low Carbon London, which is looking at how smart grid technologies can be used to help meet the increased demand for electricity, including the use of spare generating capacity and turning down consumption

	at times of high use. We will build on this approach to support the use of smart water metering to better manage consumption and leakage. • Develop new markets for London's waste: we will stimulate the use of data and technology to inform the development of new markets for London's waste to bring efficiencies and scale to the segregation and use of waste as a resource. • Visualise the city's infrastructure: we will develop 3D visualisations of the city's infrastructure through bringing together data from different utility companies to map underground assets. Sharing this data should reduce unnecessary road works, where excavations are repeatedly dug in the same location by different utility firms. • Demonstrate how technology can reduce traffic collisions, and improve traffic flow: such as trialling Light-Emitting Diode studs to manage lane allocations in real time; using CCTV to detect incidents and provide queuing alerts; and exploring how technology can reduce the risk of collisions with cyclists and other vulnerable road users. • Experiment with new ways of reducing light freight: we will trial different ways of using IT, incentives and collaborative business models to tackle the rise in congestion and pollution caused through the increase in e-commerce. • 6. Plan for London's long term infrastructure needs: we will investigate London's long term infrastructure needs - and how data and digital technology can both inform and help meet those needs - through the Mayor's Long Term Infrastructure Investment Plan, which will guide future investment in the capital up to 2050.
6 .. and City Hall to Better Serve Londoners Needs	City Hall also has to work in a more integrated way if it is to better meet the complex needs of London's population. This means joint working across different policy areas which traditionally sit in 'silos', including sharing data and objectives; and more joint working across London boroughs, and wider service providers. This will help to create efficiencies, including cost savings, across different service areas. The Mayor has powers over, and budgets for, transport, policing, economic development, fire, culture, health, the environment, planning and development. The functional bodies — Greater London Authority, Transport for London, the Mayor's Office for Policing and Crime, London Fire and Emergency Planning Authority, and the London Legacy Development Corporation — are responsible for the delivery of services in these areas28. We need to open up City Hall budgets to more transparent and innovative ways of delivering these services. London is already experimenting with different ways of sharing and analysing data and objectives across these functional bodies, including predictive analysis. For example, the Metropolitan Police Service (MPS) and Transport for London (TfL) are proposing integrating automatic number plate recognition systems with the MPS's existing system to develop a 'ring of steel' around London and identify unregistered, uninsured and stolen vehicles. The London Fire Brigade (LFB) and TfL are exploiting sophisticated computer-based optimisation and modelling techniques. For example, LFB have used modelling to ensure their fire stations are in the right place so that fire engines can get to emergencies as quickly as possible. • Work across the Greater London Authority Group: to increase data sharing and analytics, such as the use of predictive analysis.

	• Scale up innovation, working across borough boundaries: work with London boroughs and service providers to identify strategic opportunities for applying data and technology to London's challenges, and examine ways in which innovations can be rolled out at scale, across administrative boundaries (in applications such as parking, waste collection, or healthcare). • Promote 'smart' approaches through London's planning system: maximise the use of data to guide the planning and design of London, including in London's opportunity areas. We will also encourage developers to adopt a more consistent approach to deploying digital infrastructure to future proof new developments. City Hall will proactively share planning and development data, such as sharing data with utility firms to improve demand forecasting and the strategic planning of infrastructure. • 4. Open up City Hall budgets: we want technology entrepreneurs to help City Hall develop more innovative approaches to service delivery, so we will use digital technology to raise awareness of City Hall's spending priorities, and continue to open up GLA contracts and supply chain opportunities to SMEs.
7. Offering a "Smarter" London Experience for All	Digital technology is making massive changes to the way we experience the city - from traffic lights changing as CCTV logs congestion, to knowing exactly what time your bus will arrive, and paying it with the touch of your credit card. Smart London is about harnessing digital technology so that Londoners, visitors and businesses can experience London in a better way, and have more time free from bureaucratic hassle and congestion. Londoners are early adopters of new technology. We need to encourage them to interact more with the city and its performance, and be a part of the solution. London has already experimented with the city 'talking back'. The City of London, for example, established 'smart' recycling bins, which were used as WiFi hotspots with digital screens providing information on the city. The recent surge of public opinion against the tracking of Wi-Fi signals to gather anonymous data on peoples' movement reiterates the critical importance of involving Londoners in any plans to make the city 'smarter'. • Establish a Smart London platform: to enable Londoners to feedback, rate and shape the type of experience they want to have. • Help position the Queen Elizabeth Olympic Park as an interactive smart experience: a test bed and demonstrator by 2016. • 3. Invest in wireless networks in public spaces: we have already invested in WiFi on the London Underground, and were the first UK city to launch 4G. In 2014 we will invest over £1 million in free Wi-Fi in London's art galleries and museums, to ensure London has one of the fastest Wi-Fi networks globally. • 4. Help Londoners and visitors to seamlessly navigate the city: including improved data for journey planning tools, expanding the use of digital technologies as part of Legible London, and accelerating the innovation and adoption of digital money to lubricate the functioning of the city - including establishing a digital money demonstrator by end 2015.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	Policy and paragraph text
Principle DL3	Proposals should contribute to the advancement of a Smart Old Oak & Park Royal by integrating innovative technologies, services and open data sharing arrangements into new development by: a. Undertaking a baseline study mapping out existing utilities and Information and Communications Technology (ICT) system resources across the development and neighbouring areas. This would identify those resources with the greatest potential for reuse, identify gaps and provide the foundation for a strategy to fill them; and b. Supporting the delivery of the OPDC's SMART Strategy, setting out how best practice technologies, services and open data will be designed in to schemes and/ or safeguarded for future implementation as new technologies, services and use cases develop.

Local Plan Regulation 18 Draft Policy Options

Policy Options were not provided in the Regulation 18 Draft Local Plan.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
This chapter should highlight the potential, intended outcomes and likely activities which would characterise a smart and sustainable area. It is not clear how the policy would aid decision making.	London Sustainable Development Commission	The content of SD1 has been included within the supporting text for policy DI4. No change proposed. The wording is required to demonstrate consistency with the NPPF. The Spatial Vision, narratives and the Environment and Utilities Chapter set out OPDC's aspirations and requirements for pioneering international excellence in sustainability
Commit to ensuring public realm and furniture is useable by all including using smart city technology	GLA	Change proposed. Policies SP7 and D2 require proposals to contribute to delivering an accessible and inclusive public realm. Policies SP2 and EU11 provide guidance supporting and delivering smart city technology and approaches.

Wayfinding - consider re-evaluation of importance of wayfinding given technology advances and use of land mark buildings	Old Oak Interim Forum	Change proposed. Policies SP7, SP2, EU11 and T2 provide guidance supporting and delivering smart city technology and approaches including through way finding.
Suggest linking the delivery of high grade digital communications to Park Royal to drive higher value employment.	LSDC	Noted. OPDC's Local Plan encourages a range of employment opportunities and uses. OPDC's Future Employment Growth Sectors Study provides more information on sectors which could be located in Old Oak and Park Royal; this evidence base has fed into the latest version of the Local Plan. The Local Plan acknowledges the current deficiencies in the broadband network in the area (smart technology, Policy EU11) and the need to work with broadband, telecommunication providers and developers to overcome this. Noted. OPDC's Future Employment Growth Sectors Study provides more information on sectors which could be located in Old Oak and Park Royal, and the level/types of support they might need to help them develop - this does include the Clean Tech (low carbon) sector. This evidence base has fed into the latest version of the Local Plan.
A range of scenarios with more visionary approaches to the nature of the network and available transport should be carried out and be made available for public scrutiny/consultation. The current proposals are quite traditional given the transport changes (driverless cars and demand-responsive transport for example) that are likely to occur between now and completion of development.	GUA	No change proposed. Policy EU11 recognises the potential for smart technology to revolutionise transport in the future, but the local plan's policies need to be suitable for assessing development proposals in the short term. The Local Plan will be monitored through key performance indicators and as new technology comes on line, the Local plan can be updated accordingly.

LP should consider ambitious local driverless transportation	Hammersmith Society	No change proposed. Policy EU11 recognises the potential for smart technology to revolutionise transport in the future, but the local plan's policies need to be suitable for assessing development proposals in the short term. The Local Plan will be monitored through key performance indicators and as new technology comes on line, the Local plan can be updated accordingly.
Further detail needed about OPDC's aspirations for freight movements and how any safeguarding for 'future innovative and smart technologies' might work.	SEGO	Noted. T7 policy now includes the need for developers to implement and safeguard for future innovative and smart technologies in relation to freight, servicing and delivery that maximise the efficiency and interoperability of the transport network, including measures such as holding bays optimisation and demand responsive deliveries. Justification text has also been updated. Smart technology is also covered through Policy EU11.
Need to set aside space needed for the infrastructure to support smart transport technologies e.g. fibre optics, wireless etc.	Resident	Noted. OPDC development wants to be at the forefront of smart technologies in transport as a whole. Specifically, T7 seeks to implement and safeguard for future innovative and smart technologies.
Should set an ambition for how Smart Tech would help meet the vision and particular objectives.	London Sustainable Development Commission	Noted. Smart technology is constantly evolving so it is difficult to predict now what specific technologies would help to support OPDC's vision and objectives, but Policy SP2 does recognise the role that smart technology can play in promoting sustainability and smart policy in the environment chapter requires that major development submit a smart strategy to

		show how development is being designed flexibly to consider the emergence of new technology.
Should integrate citizen science and the Internet of Things through air quality monitoring	GiGL	Noted. The potential for the Internet of Things to assist with air quality monitoring is covered through OPDC's smart policy.
Broadband connectivity is critical to the success of many of Park Royal's commercial occupiers.	SEGRO	Noted. OPDC's smart technology policy supports and appropriately secures the delivery of high speed wired and wireless broad band technologies that provide a wide range of services.
Requirements for providing open and interoperable data should not be stronger as technology changes so quickly that making stronger or more specific requirements would be a barrier to innovation.	WRc	No change proposed. The wording in the smart technology is considered to be strong enough to secure appropriate provision of smart city systems that provide interoperable, open and usable data
There needs to be a precursor policy option that specifies a minimum level of infrastructure, with related target; for example, minimum broadband speed and mobile phone connectivity, or a requirement to ensure free Wi-Fi across the area, such as is available in the centre of Cardiff	WRc	No change proposed. The smart technology policy (EU11) requires the provision of high speed wired and wireless broad band technologies that provide a wide range of services. A specific target for this would quickly become obsolete, so would be inappropriate for inclusion in a 20 year Local Plan. The appropriateness of broadband speed would be assessed relative to standards at the time of the application.
Need to be clearer how smart /digital data can drive improvements and change behaviours	London Sustainable Development Commission	Change proposed. Further clarity on the ways that smart technology can improve and change behaviour are included in the smart technology policy.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Support the smart technology policy	Association for Consultancy and Engineering (ACE)	Noted.
It is not the responsibility of the planning system to govern broadband speeds etc and will increase the costs of development	Old Oak Park Ltd	No change proposed. Broadband is now considered a basic need alongside the other utilities. Providing good access to broadband supports social equality and economic vibrancy, which are strategic aims of the Local Plan.
The OPDC area suffers from poor quality broadband connections, and propose that planning conditions are set requiring developers to install highest level of broadband.	Park Royal Business Group	No change proposed. Policy EU11 promotes the provision of the highest quality broadband possible and appropriate ducting provision along key routes. More corporately, OPDC's Park Royal Programme Manager is working with the PRBG to deliver better broadband infrastructure in Park Royal.
Welcome the OPDC's acknowledgement of the broadband issue, and requests that OPDC takes an active role in instigating upgrades to fibre broadband as a matter of urgency.	Segro	Noted. OPDC are currently working on coordinating upgrades with Park Royal Business Group as part of OPDC's corporate activities.
The lack of detail about smart technology makes this narrative unsound	Friary Park Preservation Group	No change proposed. OPDC officers believe the policy and supporting study are sound and will promote the use of smart technologies.
support policy but consideration should be given to the ownership, management and storage of data	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC does not have responsibility or the authority to determine who owns data or how it is managed or stored. OPDC will work with government and others however to review policy and understand its implications for OPDC.
Policy is dependent on individual developments and fails to take a strategic approach to broadband provision	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The development policies in the Local Plan have to focus on development. However, OPDC in its role as a development corporation is reviewing strategic approaches to infrastructure provision including broadband.
Support policies on Smart Technology, and suggest additional wording to emphasise the opportunity for Park Royal to act as a test bed for new technologies subject to	Park Royal Business Group	No change proposed. OPDC wishes both Old Oak and Park Royal to be positioned to deliver appropriate smart technologies. OPDC does not consider it appropriate to identify Park Royal in particular, as a location

What is the issue?	Who raised the issue?	What are we doing to address the issue?
improved broadband infrastructure.		where smart technologies should be tested.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Question the appropriateness of including a policy relating to technology in the Local Plan. It is not the responsibility of the planning system to govern broadband speeds etc and will increase the costs of development.	Old Oak Park Limited	Noted. See response to comment EU11/12 from the first regulation 19 draft Local Plan.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
Environmental Standards Study	• Developments should incorporate smart city technologies and approaches that enable resources, space, systems and materials and monitored effectively

Smart Strategy	• Deliver a secure and open, interoperable digital environment. • Utilise technology and digital systems to: o assist in the planning, delivery and management of development o create opportunities and address challenges o enhance quality of life for residents, employees and visitors • Incentivise the growth of emerging smart city economic sectors. • Embed flexibility and agility in the built and natural environment alongside infrastructure to accommodate change. • Explore and support the use of emerging transport modes to enable understanding of the impacts on the built environment and address challenges specific to: o Addressing congestion o Enabling mobility for all o Supporting efficient freight movement o Managing waste • Require the use and delivery of the most recent Building Information Modelling data for development and infrastructure proposals. • Deliver integrated utilities infrastructure that is planned and managed through sensors to increase efficiencies and minimise disruptions to the public realm. • Consider using appropriate technology to improve and support the safety of people and the wider built environment.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	Develop an onsite 'virtual power plant' using modern smart grid technology capable of integrating electrical supply from a range of local sources, including CHP plant, energy from waste plant, solar PV arrays and energy storage.	Recommendation is not appropriate for Local Plan policy, but may inform the corporate approach of OPDC for energy infrastructure.
Smart Strategy	Establish and manage an urban digital platform.	Recommendation is not appropriate for Local Plan policy, but may inform the corporate approach of OPDC.

EU12: Extraction of Minerals

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
142	Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since minerals are a finite natural resource, and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation.
143	In preparing Local Plans, local planning authorities should: • identify and include policies for extraction of mineral resource of local and national importance in their area, but should not identify new sites or extensions to existing sites for peat extraction; • so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously; • define Minerals Safeguarding Areas and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not creating a presumption that resources defined will be worked; and define Minerals Consultation Areas based on these Minerals Safeguarding Areas; • safeguard: – existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials; and – existing, planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material. • set out policies to encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place; • set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the

	site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality; • when developing noise limits, recognise that some noisy short-term activities, which may otherwise be regarded as unacceptable, are unavoidable to facilitate minerals extraction; and • put in place policies to ensure worked land is reclaimed at the earliest opportunity, taking account of aviation safety, and that high quality restoration and aftercare of mineral sites takes place, including for agriculture (safeguarding the long term potential of best and most versatile agricultural land and conserving soil resources), geodiversity, biodiversity, native woodland, the historic environment and recreation.
144	When determining planning applications, local planning authorities should: • give great weight to the benefits of the mineral extraction, including to the economy; • as far as is practical, provide for the maintenance of landbanks of nonenergy minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage sites, Scheduled Monuments and Conservation Areas; • ensure, in granting planning permission for mineral development, that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality; • ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties; • not grant planning permission for peat extraction from new or extended sites; • provide for restoration and aftercare at the earliest opportunity to be carried out to high environmental standards, through the application of appropriate conditions, where necessary. Bonds or other financial guarantees to underpin planning conditions should only be sought in exceptional circumstances; • not normally permit other development proposals in mineral safeguarding areas where they might constrain potential future use for these purposes; • consider how to meet any demand for small-scale extraction of building stone at, or close to, relic quarries needed for the repair of heritage assets, taking account of the need to protect designated sites; and • recognise the small-scale nature and impact of building and roofing stone quarries, and the need for a flexible approach to the potentially long duration of planning permissions reflecting the intermittent or low rate of working at many sites
145	Minerals planning authorities should plan for a steady and adequate supply of aggregates by: • preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities, based on a rolling average of 10 years sales data and other relevant local information, and an assessment of all supply

	options (including marine dredged, secondary and recycled sources); • participating in the operation of an Aggregate Working Party and taking the advice of that Party into account when preparing their Local Aggregate Assessment; • Minerals planning authorities should plan for a steady and adequate supply of industrial minerals by: • co-operating with neighbouring and more distant authorities to co-ordinate the planning of industrial minerals to ensure adequate provision is made to support their likely use in industrial and manufacturing processes; • encouraging safeguarding or stockpiling so that important minerals remain available for use; • providing a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment, as follows: – at least 10 years for individual silica sand sites; – at least 15 years for cement primary (chalk and limestone) and secondary (clay and shale) materials to maintain an existing plant, and for silica sand sites where significant new capital is required; and – at least 25 years for brick clay, and for cement primary and secondary materials to support a new kiln. • taking account of the need for provision of brick clay from a number of different sources to enable appropriate blends to be made.
146	Minerals planning authorities should plan for a steady and adequate supply of industrial minerals by: • co-operating with neighbouring and more distant authorities to co-ordinate the planning of industrial minerals to ensure adequate provision is made to support their likely use in industrial and manufacturing processes; • encouraging safeguarding or stockpiling so that important minerals remain available for use; • providing a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment, as follows: – at least 10 years for individual silica sand sites; – at least 15 years for cement primary (chalk and limestone) and secondary (clay and shale) materials to maintain an existing plant, and for silica sand sites where significant new capital is required; and – at least 25 years for brick clay, and for cement primary and secondary materials to support a new kiln. • taking account of the need for provision of brick clay from a number of different sources to enable appropriate blends to be made.
147	Minerals planning authorities should also: • when planning for on-shore oil and gas development, including unconventional hydrocarbons, clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production;

	• encourage underground gas and carbon storage and associated infrastructure if local geological circumstances indicate its feasibility; • indicate any areas where coal extraction and the disposal of colliery spoil may be acceptable; • encourage capture and use of methane from coal mines in active and • abandoned coalfield areas; and • provide for coal producers to extract separately, and if necessary stockpile, fireclay so that it remains available for use.
148	When determining planning applications, minerals planning authorities should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution.
149	Permission should not be given for the extraction of coal unless the proposal is environmentally acceptable, or can be made so by planning conditions or obligations; or if not, it provides national, local or community benefits which clearly outweigh the likely impacts to justify the grant of planning permission.
156	Local planning authorities should set out the strategic priorities for the area in the Local Plan. This should include strategic policies to deliver: • the homes and jobs needed in the area; • the provision of retail, leisure and other commercial development; • the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat); • the provision of health, security, community and cultural infrastructure and other local facilities; and • climate change mitigation and adaptation, conservation and enhancement of the natural and historic environment, including landscape
163	Minerals planning authorities should work with other relevant organisations to use the best available information to: • develop and maintain an understanding of the extent and location of mineral resource in their areas; and • assess the projected demand for their use, taking full account of opportunities to use materials from secondary and other sources which could provide suitable alternatives to primary materials.

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	**Policy and paragraph text**
Minerals	
Title: What steps should mineral planning authorities take to safeguard mineral resources?	Mineral planning authorities should adopt a systematic approach for safeguarding mineral resources, which: • uses the best available information on the location of all mineral resources in the authority area. This may include use of British Geological Survey maps as well as industry sources; • consults with the minerals industry, other local authorities (especially district authorities in 2-tier areas), local communities and other relevant interests to define Minerals Safeguarding Areas;

Paragraph: 003 **Reference ID:** 27-003-20140306 **Revision Date:** 06 03 2014	• sets out Minerals Safeguarding Areas on the policies map that accompanies the local plan and define Mineral Consultation Areas; and • adopts clear development management policies which set out how proposals for non-minerals development in Minerals Safeguarding Areas will be handled, and what action applicants for development should take to address the risk of losing the ability to extract the resource. This may include policies that encourage the prior extraction of minerals, where practicable, if it is necessary for non-mineral development to take place in Minerals Safeguarding Areas and to prevent the unnecessary sterilisation of minerals. Detailed advice on mineral safeguarding may be found in the British Geological Survey report Mineral safeguarding in England: good practice advice.
Title: Is it appropriate to safeguard mineral resources in designated areas and urban areas? **Paragraph:** 004 **Reference ID:** 27-004-20140306 **Revision Date:** 06 03 2014	Safeguarding mineral resources should be defined in designated areas and urban areas where necessary to do so. For example, safeguarding of minerals beneath large regeneration projects in brownfield land areas can enable suitable use of the mineral and stabilisation of any potentially unstable land before any non-minerals development takes place.
Title: Why should planning authorities safeguard existing, planned and potential storage, handling and transport sites? **Paragraph:** 006 **Reference ID:** 27-006-20140306 **Revision Date:** 06 03 2014	Planning authorities should safeguard existing, planned and potential storage, handling and transport sites to: • ensure that sites for these purposes are available should they be needed; and • prevent sensitive or inappropriate development that would conflict with the use of sites identified for these purposes. In areas where there are county and district authorities, responsibility for safeguarding facilities and sites for the storage, handling and transport of minerals in local plans will rest largely with the district planning authority. Exceptions will be where such facilities and sites are located at quarries or aggregate wharves or rail terminals. Planning authorities should consider the possibility of combining safeguarded sites for storage, handling and transport of minerals with those for processing and distribution of recycled and secondary aggregate. This will require close co-operation between planning authorities.

Title: How should mineral planning authorities identify locations for minerals development? **Paragraph:** 007 **Reference ID:** xxx **Revision Date:** 06 03 2014	Mineral planning authorities are encouraged to plan for minerals extraction using Ordnance Survey-based proposals maps and relevant evidence provided by the minerals industry and other appropriate bodies. Further information on the preparation of local plans can be found at the Local Plans section of the guidance. This approach will allow mineral planning authorities to highlight areas where mineral extraction is expected to take place, as well as managing potentially conflicting objectives for use of land.
Title: How should mineral planning authorities plan for minerals extraction? **Paragraph:** 008 **Reference ID:** 27-008-20140306 **Revision Date:** 06 03 2014	Mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority): Designating Specific Sites – where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction; Designating Preferred Areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction; and/or Designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply. National Park Authorities are not expected to designate Preferred Areas or Areas of Search given their overarching responsibilities for managing National Parks. Furthermore, in exceptional circumstances, such as where a local authority area is largely made up of designated areas such as Areas of Outstanding Natural Beauty, it may be appropriate for mineral planning authorities to rely largely on policies which set out the general conditions against which applications will be assessed. In planning for minerals extraction, mineral planning authorities are expected to co-operate with other authorities.
Title: Why should mineral planning authorities seek to designate Specific Sites as a priority? **Paragraph:** 009	Designating Specific Sites in minerals plans provides the necessary certainty on when and where development may take place. The better the quality of data available to mineral planning authorities, the better the prospect of a site being designated as a Specific Site.

Reference ID: 27-009-20140306 **Revision Date:** 06 03 2014	
Title: Under what circumstances would it be preferable to focus on extensions to existing sites rather than plan for new sites? **Paragraph:** 010 **Reference ID:** 27-010-20140306 **Revision Date:** 06 03 2014	The suitability of each proposed site, whether an extension to an existing site or a new site, must be considered on its individual merits, taking into account issues such as: • need for the specific mineral; • economic considerations (such being able to continue to extract the resource, retaining jobs, being able to utilise existing plant and other infrastructure), and; • positive and negative environmental impacts (including the feasibility of a strategic approach to restoration). • the cumulative impact of proposals in an area.
Title: What are the environmental issues of minerals working that should be addressed by mineral planning authorities? **Paragraph:** 013 **Reference ID:** 27-013-20140306 **Revision Date:** 06 03 2014	The principal issues that mineral planning authorities should address, bearing in mind that not all issues will be relevant at every site to the same degree, include: • noise associated with the operation • dust; • air quality; • lighting; • visual impact on the local and wider landscape; • landscape character; • archaeological and heritage features (further guidance can be found under the Minerals and Historic Environment Forum's Practice Guide on mineral extraction and archaeology; • traffic; • risk of contamination to land; • soil resources; • geological structure; • impact on best and most versatile agricultural land; • blast vibration; • flood risk; • land stability/subsidence; • internationally, nationally or locally designated wildlife sites, protected habitats and species, and ecological networks; • impacts on nationally protected landscapes (National Parks, the Broads and Areas of Outstanding Natural Beauty); • nationally protected geological and geo-morphological sites and features;

	• site restoration and aftercare; • surface and, in some cases, ground water issues; • water abstraction.
Title: How should mineral planning authorities assess the cumulative impact of minerals development? **Paragraph:** 017 **Reference ID:** 27-017-20140306 **Revision Date:** 06 03 2014	Some parts of a mineral planning authority area may have been subjected to successive mineral development (such as aggregate extraction or surface coal mining) over a number of years. Mineral planning authorities should include appropriate policies in their minerals local plan, where appropriate, to ensure that the cumulative impact of a proposed mineral development on the community and the environment will be acceptable. The cumulative impact of mineral development is also capable of being a material consideration when determining individual planning applications.
Title: When should site restoration and aftercare be considered? **Paragraph:** 037 **Reference ID:** When should site restoration and aftercare be considered? **Revision Date:** 06 03 2014	The most appropriate form of site restoration to facilitate different potential after uses should be addressed in both local minerals plans, which should include policies to ensure worked land is reclaimed at the earliest opportunity and that high quality restoration and aftercare of mineral sites takes place, and on a site-by-site basis following discussions between the minerals operator and the mineral planning authority.

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 5. London's Response to Climate Change	
Policy 5.20 Aggregates	Strategic A The Mayor will work with all relevant partners to ensure an adequate supply of aggregates to support construction in London. This will be achieved by: • 1 encouraging re-use and recycling of construction, demolition and excavation waste within London

	• 2 extraction of land-won aggregates within London • 3 importing aggregates to London by sustainable transport modes. B The Mayor will work with strategic partners to achieve targets of: • a 95 per cent recycling/re-use of construction, demolition and excavation waste by 2020 • b 80 per cent recycling of that waste as aggregates by 2020. C London should make provision for the maintenance of a landbank (i.e. seven years' supply) of at least 5 million tonnes of land won aggregates throughout the plan period until 2031. LDF preparation D LDFs should make provision for the maintenance of a landbank (i.e. seven years' supply) of at least 5 million tonnes of land won aggregates throughout the plan period to 2031 by a landbank apportionment of: • a at least 1.75 million tonnes to LB Havering • b at least 0.7 million tonnes to LB Redbridge • c at least 1.75 million tonnes to LB Hillingdon • d at least 0.7 million tonnes to LB Hounslow E Mineral planning authorities in London should: • a identify and safeguard aggregate resources in LDFs • b support the development of aggregate recycling facilities, subject • to local amenity conditions. F To reduce the environmental impact of aggregates, LDFs should; • a ensure that appropriate use is made of planning conditions dealing with aftercare, restoration and re-use of minerals sites following extraction • b safeguard wharves and/or railheads with existing or potential capacity for aggregate distribution • c minimise the movement of aggregates by road and maximise the movement of aggregates via the Blue Ribbon Network • d develop policies that support the protection and enhancement of aggregates recycling facilities.

Draft New London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 9 Sustainable Infrastructure	
Policy SI10 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 2) extracting land-won aggregates within London 3) importing aggregates to London by sustainable transport modes 4) meeting the target of 95 per cent recycling/re-use of construction, demolition and excavation waste by 2020 and recycling 50 per cent of that waste as aggregates by 2020. B Development Plans should 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:

	1) at least 1.75 mt to London Borough of Havering 2) at least 0.7 mt to London Borough of Redbridge 3) at least 1.75 mt to London Borough of Hillingdon 4) at least 0.7 mt to London Borough of Hounslow. C All Mineral Planning Authorities in London should identify and safeguard aggregate resources in Development Plans, including aggregate recycling facilities. D To reduce the environmental impact of aggregates, Development Plans should: 1) ensure that appropriate use is made of planning conditions dealing with aftercare, restoration and re-use of minerals sites following extraction, with particular emphasis on promoting green infrastructure, especially biodiversity 2) safeguard wharves and/or railheads with existing or potential capacity for aggregate distribution and/or processing to minimise the movement of aggregates by road and maximise the movement of aggregates by sustainable modes.
Policy SI11 Hydraulic fracturing (Fracking)	A Development proposals for exploration, appraisal or production of shale gas via hydraulic fracturing should be refused.

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
	None directly applicable

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	**Alternative policy option**
12.91	No alternative policy options have been identified. The NPPF requires Local authorities to address minerals extraction.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
Object to policy as policy as currently worded is too		No change proposed. Policies are required to plan

supportive of fracking and this would have significant detrimental environmental impacts	Brent Council, Hammersmith and Fulham Council	positively for their area and the NPPF requires planning authorities to include policies on the extraction of minerals.
This policy should provide more of a lead on managing fracking. It currently reads as just a criteria-based policy but there are clearly areas in OPDC such as key regeneration sites where this form of development will be unacceptable in principle	Ealing Council	Change proposed. The policy has been revised to clarify that sites identified for housing or within site allocations will not be appropriate for mineral extraction.
There is a minor possibility of ballast and other materials being discovered during investigation or construction works which could become a useful resource over the duration of the project. Amend preferred policy option to start; Applications for mineral extraction, ~~including the exploration, appraisal and operation of unconventional oil and gas resources~~, will be considered against the following criteria:	Hammersmith and Fulham Council	Change proposed. Amendments have been made to the policy and reference to ballast and potential other materials has been included in the supporting text.
Should include a map identifying areas in which mineral extraction would not be permitted due to a negative impact on flood risk defences or other issues	Royal Borough of Kensington and Chelsea	No change proposed. OPDC considers that applications should be considered on a case by case basis and that the criteria in the policy should be used for assessing the acceptability or otherwise of proposals. This includes potential impacts on water courses.
Object to any fracking within the OPDC area	Local resident	No change proposed. The NPPF requires local planning authorities to plan positively for mineral extraction. OPDC's policy supports mineral extraction but identifies a series of criteria that must be met for mineral extraction to be considered acceptable.

Regulation 19(1) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Assessment of applications for extraction of materials should promote use of secondary materials in conformity with principles of the circular economy.	LWARB	No change proposed. These policies are referenced as having policy links to this policy and would appropriately apply to any applications for extraction of minerals proposals.
Support policy on extraction of minerals	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	Noted.
The policy lacks sufficient safeguards to address potential for mineral extraction	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC considers that the policy does have sufficient safeguards.
the policy fails to safeguard rail and canal facilities in line with NPPF 143	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. The NPPF requires sites for the transfer of minerals. OPDC supports the transfer of minerals through appropriate sites and supports maximising the use of rail and water to transfer such materials. With regards to mineral extraction, there are no known sites within the OPDC area used for this purpose however will be supported where they meet the aims and objectives of Policy EU12.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Point f) should also refer to the need to mitigate Nox emissions.	London Borough of Hammersmith and Fulham	No change proposed. Policy EU12 already requires development to adequately to mitigate the effects of the operation with regards to air quality.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
Environmental Standards Study	Strategy: 30-35% recycled aggregates is recommended for the concrete substructure at Old Oak.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
Environmental Standards Study	• Strategy: 30-35% recycled aggregates is recommended for the concrete substructure at Old Oak.	Recommendation is considered too detailed for local plan policy but will be used to inform future SPDs. Policy EU8 (Sustainable Materials) sets minimum requirements for reused or recycled content, including aggregates.

EU13: Land Contamination

Legislation, Policy and Guidance Context

National Planning Policy Framework (2012) (NPPF)

Policy / paragraph reference	Policy and paragraph text
109	The planning system should contribute to and enhance the natural and local environment by: • remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
120	To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.
121	Planning policies and decisions should also ensure that: • the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation; • after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and • adequate site investigation information, prepared by a competent person, is presented.
143	In preparing Local Plans, local planning authorities should: • set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality;

National Planning Practice Guidance (NPPG)

Policy / paragraph reference	Policy and paragraph text

Natural Environment	
Title: Can brownfield land have a high ecological value? **Paragraph:** 024 **Reference ID:** 8-024-20140306 **Revision Date:** 06 03 2014	It can do. A core principle in the National Planning Policy Framework is to encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value. This means that planning needs to take account of issues such as the biodiversity value which may be present on a brownfield site before decisions are taken. Defra has published information on Open Mosaic Habitats, a specific type of habitat that is of high ecological value and which occurs on brownfield land. Where insufficient information is available, survey work may be appropriate to assess ecological value before decisions on development are taken. In addition, planning may need to take account of contamination.
Land Affected by Contamination	
Title: Why should local planning authorities be concerned about land contamination? **Paragraph:** 001 **Reference ID:** 33-001-20140306 **Revision Date:** 06 03 2014	Failing to deal adequately with contamination could cause harm to human health, property and the wider environment. It could also limit or preclude new development; and undermine compliance with European Directives such as the Water Framework Directive.
Title: Is dealing with land that may be affected by contamination just a planning matter? **Paragraph:** 002 **Reference ID:** 33-002-20140306 **Revision Date:** 06 03 2014	When dealing with land that may be affected by contamination, the planning system works alongside a number of other regimes including: • The system for identifying and remediating statutorily defined contaminated land under Part 2A of the Environmental Protection Act 1990. The government has published statutory guidance on Part 2A which concentrates on addressing contaminated land that meets the legal definition and cannot be dealt with through any other means, including through planning. • Building Regulations, which require reasonable precautions to be taken to avoid danger to health and safety caused by contaminants in ground to be covered by buildings and associated ground. • Environmental Permitting Regulations, under which an Environmental Permit from the Environment Agency is normally required to cover the treatment and/or redeposit of contaminated soils if the soils are 'waste'.
Title:	The contaminated land regime under Part 2A of the Environmental Protection Act 1990 provides a risk based approach to the identification and remediation of land where contamination poses an unacceptable

What is planning's contribution? **Paragraph:** 003 **Reference ID:** 33-003-20140306 **Revision Date:** 06 03 2014	risk to human health or the environment. The regime does not take into account future uses which could need a specific grant of planning permission. To ensure a site is suitable for its new use and to prevent unacceptable risk from pollution, the implications of contamination for a new development would be considered by the local planning authority to the extent that it is not addressed by other regimes.
Title: What is the role of Local Plans in considering contamination? **Paragraph:** 005 **Reference ID:** 33-005-20140306 **Revision Date:** 06 03 2014	Consideration of land contamination in Local Plans will vary between places and the type of issues that the plan needs to cover, but it can be helpful to: • consider a strategic, phased approach to dealing with potential contamination if this is an issue over a wide area, and in doing so, recognise that dealing with land contamination can help contribute to achieving the objectives of EU directives such as the Water Framework Directive; • use sustainability appraisal to shape an appropriate strategy, including through work on the 'baseline', appropriate objectives for the assessment of impact and proposed monitoring; • allocate land which is known to be affected by contamination only for appropriate development – and be clear on the approach to remediation; • have regard to the possible impact of land contamination on neighbouring areas (eg by polluting surface water or groundwater); and • be clear on the role of developers and requirements for information and assessments.
Title: What is the starting point for an applicant bringing forward a proposal for a site that could be contaminated? **Paragraph:** 007 **Reference ID:** 33-007-20140612 **Revision Date:** 12 06 2014	Early engagement with the local planning and environmental health departments, particularly if the land is determined as contaminated land under Part 2A of the Environmental Protection Act 1990, will clarify what assessment is needed to support the application and issues that need to be considered in the design of a development, for example how land affected by contamination can be made compatible with sustainable drainage. The Environment Agency will also have an interest in the case of 'special sites' designated under Part 2A of the Environmental Protection Act 1990 and all sites where there is a risk of pollution to controlled waters. Remediation will need to meet their requirements. The developer should also check whether an environmental permit is required before development can start. The concerns on land contamination will sit alongside a wider set of considerations that the planning system will look at. Details about the broad steps a local planning authority should follow. If there is a reason to believe contamination could be an issue, developers should provide proportionate but sufficient site investigation

	information (a risk assessment) to determine the existence or otherwise of contamination, its nature and extent, the risks it may pose and to whom/what (the 'receptors') so that these risks can be assessed and satisfactorily reduced to an acceptable level. Defra has published a policy companion document considering the use of 'Category 4 Screening Levels' in providing a simple test for deciding when land is suitable for use and definitely not contaminated land. A risk assessment of land affected by contamination should inform an Environmental Impact Assessment if one is required. The risk assessment should also identify the potential sources, pathways and receptors ('pollutant linkages') and evaluate the risks. This information will enable the local planning authority to determine whether further more detailed investigation is required, or whether any proposed remediation is satisfactory. At this stage, an applicant may be required to provide at least the report of a desk study and site walk-over. This may be sufficient to develop a conceptual model of the source of contamination, the pathways by which it might reach vulnerable receptors and options to show how the identified pollutant linkages can be broken. Unless this initial assessment clearly demonstrates that the risk from contamination can be satisfactorily reduced to an acceptable level, further site investigations and risk assessment will be needed before the application can be determined. Further guidance can be found on the Environment Agency website. Note that remediation or site investigation activities themselves, including field trials, may require planning permission if not carried out as part of a development, and in some cases may also need environmental permits.

Managing and reducing land contamination: guiding principles (GPLC)

Policy / paragraph reference	**Policy and paragraph text**
19. How do legislative requirements affect my decision?	A key factor in determining your remediation strategy will be the requirements of the legislation that you are working under. For example, in England Planning Policy Statement (PPS) 23 states that for the planning regime the standard of remediation: '…is the removal of unacceptable risk and making the site suitable for its new use, including the removal of existing pollutant linkages. All receptors relevant to the site should be protected to an appropriate standard. As a minimum, after carrying out the development and commencement of its use, the land should not be capable of being determined as contaminated land under Part 2A of the EPA 1990.' Under Part 2A the standard of remediation for a pollutant linkage is that which, using the best practicable techniques: a) ensures that the linkage is no longer a significant pollutant linkage;

	b) remedies the effect of any significant harm or pollution of controlled waters from the significant pollutant linkage.
What is sustainable remediation?	A sustainable approach has to balance social, environmental and financial aspects, taking into account sound, scientific evidence and good governance.
24. What options are there other than 'dig and dump'?	You should ensure you consider the environment as whole when designing a remediation strategy, rather than solving one problem while causing a new one. As you develop your remediation strategy you should bear in mind that it will need to provide: • details of the use of excavated and/or imported materials in the remediation scheme; • information about the use and production of waste; • information on the regulatory permits and licences likely to be required.
25. What has remediation got to do with waste management?	When materials produced during development or remediation are waste, their treatment and disposal will be subject to waste regulatory controls. The holder of the materials needs to decide whether or not they are handling waste. The implementation section of this document provides more detailed information on waste issues and important references – see questions 27–32.
26. Can I just let natural attenuation take its course?	Only when attenuating processes are monitored to demonstrate adequate progress will monitored natural attenuation be appropriate.

London Plan (2016) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 5. London's Response to Climate Change	
Policy 5.19 Hazardous Waste	Strategic A The Mayor has prepared a Hazardous Waste Report for London, working in partnership with the boroughs, the Environment Agency, industry and neighbouring authorities to identify the capacity gap for dealing with London's hazardous waste and to provide and maintain direction on the need for hazardous waste management capacity. Planning Decisions B 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 Policy 5.17H. LDF preparation C LDFs should: • a make provision for hazardous waste treatment plants to achieve, at regional level, the necessary waste management requirements • b as part of meeting waste apportionment identify suitable sites for the storage, treatment and reprocessing of relevant or a range of hazardous waste streams

	• c identify sites for the temporary storage, treatment and remediation of contaminated soils and demolition waste during major developments.
Policy 5.21 Contaminated Land	Strategic A The Mayor supports the remediation of contaminated sites and will work with strategic partners to ensure that the development of brownfield land does not result in significant harm to human health or the environment, and to bring contaminated land to beneficial use. Planning decisions B Appropriate measures should be taken to ensure that development on previously contaminated land does not activate or spread contamination. LDF preparation C LDFs should encourage the remediation of contaminated sites and set out policy to deal with contamination.

Draft New London Plan (2017) Policies

Policy / paragraph reference	**Policy and paragraph text**
Chapter 9 Sustainable Infrastructure	
Policy SI7 Reducing waste and supporting the circular economy	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

Old Oak and Park Royal OAPF (2015)

Policy / paragraph reference	**Policy and paragraph text**
Principle E6	Proposals should identify land that is contaminated and sources of contamination and remediate the land, in accordance with the stages outlined below.

Local Plan Regulation 18 Draft Policy Options

Policy/ paragraph reference	**Alternative policy option**
12.112	No reasonable alternative policy options have been identified. There are no options but to require the decontamination and remediation of 'brownfield' land to ensure its suitability for future uses.

Key Consultation Issues

Regulation 18 consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
the Precautionary Principle should be incorporated in policy and text.	Grand Union Alliance	No change proposed. The need for precautionary principle does not need to be referenced as the 7 stage process outlined in the policy would require the appropriate identification and treatment of any decontamination
OPDC should take a more strategic approach to dealing with potential contamination (PPG 33-005). It is not sufficient to tackle this issue by responding to development proposals on a site by site basis as set out in EU12(a).	Grand Union Alliance	Change proposed. The policy has been revised to require developers to work collaboratively with OPDC and with other developers to consider a strategic approach to addressing contaminated land.
It is essential that the relationships between the OPDC, the boroughs and EA are formalised in order that duties, responsibilities and resources are clearly allocated to achieve greater certainty that remediation will be secured and policy satisfactorily implemented	Grand Union Alliance	Noted. The supporting text for the land contamination talks about the need for developers to engage with all of OPDC, the local authorities and the EA. Land contamination is complex and is affected by a number of regimes. These are summarised in the 'Guiding Principles' EA guidance, which is referenced in the supporting text to the policy. It is not necessary or appropriate for these regimes to be listed in the supporting text to the Local Plan.
There is little emphasis in the strategy on site characterisation. It would be useful for more detail on this to be available prior to putting together the next draft of the Local Plan.	Grand Union Alliance	No change proposed. The policy requires that this step is undertaken by individual developers. It is not necessary for OPDC as planning authority to have to undertake this detailed analysis on behalf of developers. However, the appendix to the Development Infrastructure Funding Study does include some high level

		assumptions on likely ground contamination.
The policy/justification should reference that Local authorities hold the specific responsibility for the management of land contamination within their boundary under Part 2A of the EPA 1990 and will have to agree in writing any proposed submissions or actions with regard to the assessment or remediation of land contamination	Hammersmith and Fulham Council	Change proposed. This text has been incorporated into the policy's supporting text
An additional point should be added to ensure that adequate soil treatment and similar facilities are incorporated to Waste Policies now in order to satisfy the proposals contained within the Decontamination Strategy.	Hammersmith and Fulham Council	No change proposed. Requirements to adequately treat soil on waste sites would be covered through the requirements set out in the land contamination policy.
The regulator for land contamination is the Local Authority, not the Local Planning Authority. 12.104 Amend to include; After remediation under planning, as a minimum, land should not be capable of being determined as contaminated land as defined by Part 2A of the Environmental Protection Act 1990 by the relevant local authority.	Hammersmith and Fulham Council	Change proposed. Text has been added to the supporting text to clarify this arrangement
Amend to: Regulatory advice and guidance is available to identify the principal matters which ~~both~~ the "Environmental Regulator" will Planning Authority ~~and environmental regulator~~ look to be undertaken when approaching redevelopment and land contamination.	Hammersmith and Fulham Council	No change proposed. This is already covered in the supporting text.
Insufficient understanding of the processes of land contamination assessment and management. Amend Where land is known or	Hammersmith and Fulham Council	Change proposed. A number of changes have been made to the supporting text to address LBHF's concerns.

found to be contaminated, or where a sensitive use is proposed or exists, ADD "this decision to be made solely by the relevant local authority", developers will be expected to assess their proposals using the seven stage process		
At end of point 1) in 12.109 add: Information collected by the relevant local authority as part of their preliminary review of historical land uses must be incorporated into the Preliminary Risk Assessment and any risk assessment without this information will not be accepted as complete under CLR11.	Hammersmith and Fulham Council	Change proposed. This text has been added to the supporting text to the policy.
There is no policy proposed to ensure that consistency of approach to the assessment and management of land contamination across the three local authorities	Hammersmith and Fulham Council Hammersmith and Fulham Council, Old Oak Park (DP9)	No change proposed. OPDC's land contamination policy would be applied equally across the three local authorities. Change proposed. The potential for developers to work collaboratively with ODC to consider a strategic approach to the remediation of land is contained in part c) of the land contamination policy.
OPDC need to clarify who would be responsible for the global remediation strategies production and review and should set out how it will interact with local authority policies.	Hammersmith and Fulham Council	No change proposed. Any approach to global remediation would need to be agreed by multiple developers, in collaboration with OPDC and the local authorities.
an estimate of the volumes and types of material to be treated or disposed of must be made at the earliest opportunity	Hammersmith and Fulham Council	Noted. This is too detailed for the Local Plan but will be identified as part of the OPDC masterplan in support of potential future outline applications and would also be identified as part of individual development proposals.
If treatment works, such as a soil hospital are to be included in the overall waste management scheme for the ODPC site OPDC should set	Hammersmith and Fulham Council	Noted. It is too soon to know for sure where this will be located and it would be too inflexible to set requirements for this at this stage. This

out when, how and where it will operate		work would be undertaken in association with the OPDC Masterplan and outputs from this may inform future versions of the Local Plan.
Policies must be amended to reflect the council's statutory duties relating to land contamination. They currently seek to consult the borough but in fact must agree any proposals with borough.	Hammersmith and Fulham Council	Change proposed. The need to seek agreement from the local authorities has been included in the supporting text to the policy.
OPDC should undertake a comprehensive assessment of the potential extent of land contamination	The Hammersmith Society	No change proposed. This assessment of land contamination should be undertaken by developers of specific sites. However, the appendix to OPDC's Development Infrastructure Funding Study provides a high level summary of the likely contamination of development sites in Old Oak.

Regulation 19(1) consultation

What is the issue?	**Who raised the issue?**	**What are we doing to address the issue?**
Support EU13 but consider the version included in the Regulation 18 consultation to be stronger	Environment Agency	No change proposed. OPDC considers that the version in the revised draft Local plan is as strong as the Reg 18 version and that it appropriately addresses comments received on the Reg 18 Local Plan.
The plan should be regarded as unsound until a comprehensive assessment of land contamination has been undertaken.	Hammersmith Society, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. It is not the responsibility of the Local Plan to define exactly what the contamination requirements are. high level assumptions have however been provided within OPDC's Development Infrastructure Funding Study. This would need to be undertaken by developers on a site by site basis and appropriate remediation undertaken before development can commence.

The policy is not effective because it fails to take a strategic approach to long term and widespread contamination	Grand Union Alliance, Wells House Road Residents Association, Joanna Betts, Nadia Samara, Nicolas Kasic, Francis, Mark and Caroline Sauzier, Patrick Munroe, Lily Gray, Ralph Scully, Catherine Sookha, Lynette Hollender, Jeremy Aspinall, Thomas Dyton	No change proposed. OPDC officers consider that the policy is effective. Policy EU13 states that OPDC will work collaboratively with developers to consider the feasibility of a strategic approach to the remediation of land. However, OPDC as local planning authority cannot insist on a strategic approach if a strategic approach has not yet been established.

Regulation 19(2) consultation

What is the issue?	Who raised the issue?	What are we doing to address the issue?
Satisfied that no further changes are necessary to Policy EU13.	London Borough of Hammersmith and Fulham	Noted.

Summary of Relevant Evidence Base

OPDC evidence base

Supporting Study	Recommendations
Decontamination Study	• ensure remediation strategies are established for all contaminated brownfield sites that come forward for redevelopment within OPDC • ensure the risk based approaches to contaminated land management outlined above are followed for redevelopment of potentially contaminated land in Old Oak and Park Royal. • support sustainable remediation options and promote the use of the CL:AIRE Definition of Waste: Development Industry Code of Practice (DoWCoP). OPDC will also explore with waste planners and industry how DoWCoP could be used to establish soil treatment centres to serve brownfield sites within Old Oak , Park Royal and neighbouring development and Opportunity Areas. • OPDC will review the opportunities for establishing an overarching strategic Global Remediation Strategy, depending upon the outcome of discussions with government on land ownership.

Rationale for any non-implemented recommendations

Supporting Study	Recommendations	Rationale for not including
N/A	N/A	N/A