Camden Core Strategy 2010-2025

Local Development Framework

Camden

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Forward Planning
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Camden

Section 3

A sustainable and attractive Camden – Tackling climate change and improving and protecting Camden's environment and quality of life

13.1 The Core Strategy sets out the Council's approach to managing Camden's growth so that it is sustainable, meets our needs for homes, jobs and services, and protects and enhances quality of life and the borough's many valued and high quality places. This section focuses on delivering the key elements of our strategy relating to:

- making Camden more sustainable and tackling climate change, in particular improving the environmental performance of buildings, providing decentralised energy and heating networks, and reducing and managing our water use;
- promoting a more attractive local environment through securing high quality places, conserving our heritage, providing parks and open spaces, and encouraging biodiversity;
- improving health and well-being;
- making Camden a safer place while retaining its vibrancy; and
- dealing with our waste and increasing recycling.

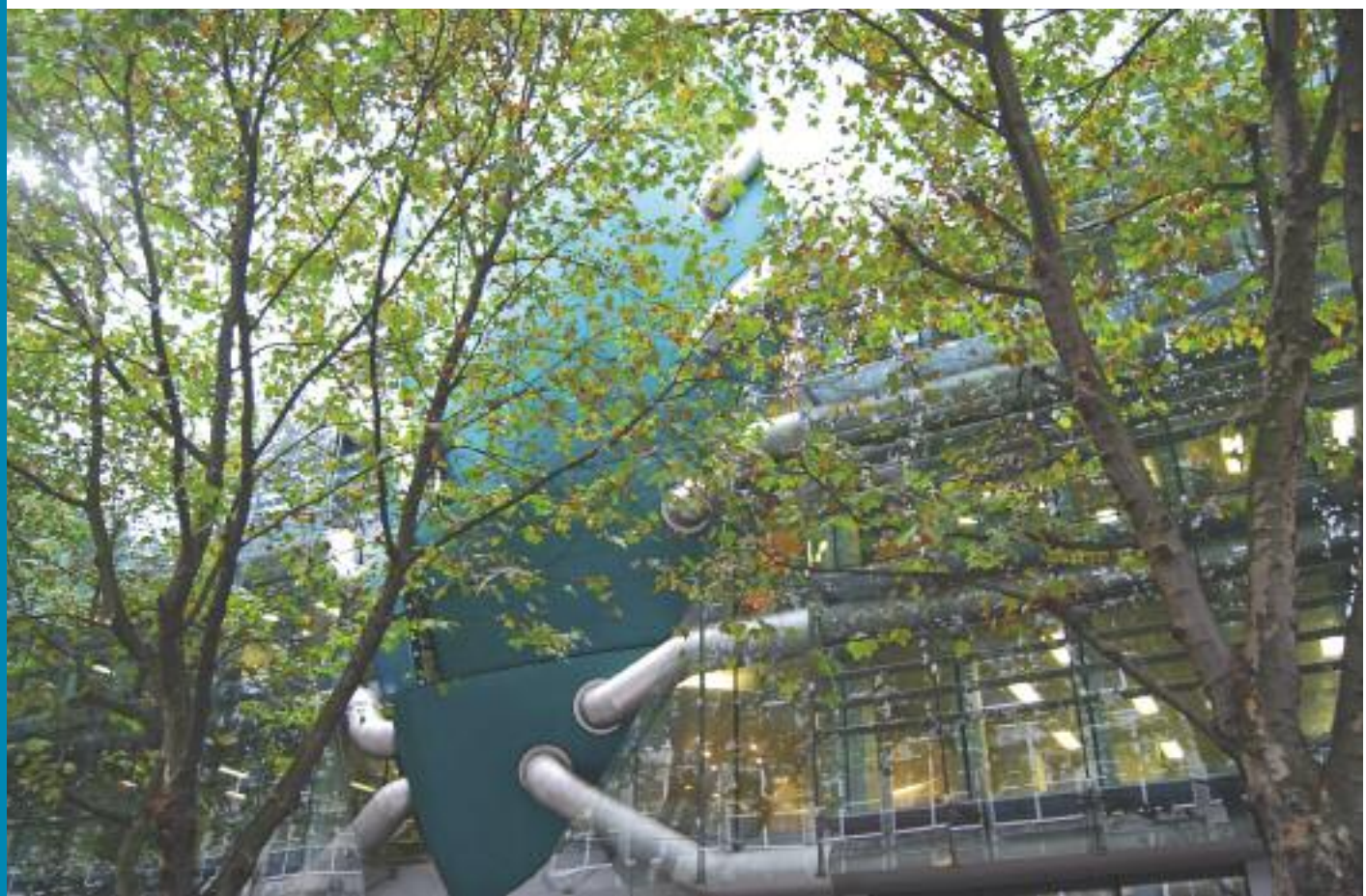
13.2 The implications of our actions on the environment are increasingly clear and action is needed at global, national and local levels. The Core Strategy has an important role in reducing Camden's environmental impact and achieving sustainable development – meeting our social, environmental and economic needs in ways that protect the environment and do not harm our ability to meet our needs in the future. *A Sustainable Camden that adapts to a growing population* is one of the elements in the vision in Camden's Community Strategy.

CS13. Tackling climate change through promoting higher environmental standards

13.3 Camden's Community Strategy commits the Council and our partners to reduce Camden's carbon dioxide emissions in line with the national target of 80% by 2050. To help deliver this, the Council commissioned a study to investigate how we can best cut our carbon dioxide emissions. *Delivering a Low Carbon Camden* (SEA-Renue) found that 30% of Camden's current emissions come from domestic buildings, 58% from non-domestic buildings and 12% from transport. Growth in the borough is expected to increase emissions if they are allowed to grow unconstrained, with emissions from transport expected to see the greatest growth. However, the study found that a 60% reduction can be met through technological means in a financially viable way, with local, decentralised heating systems served by combined heat and power (CHP) being the most cost-effective way for Camden to reduce carbon use. Achieving the 80% target will rely either on alternative technologies and fuels becoming available or on significant behavioural change to reduce energy demand.

13.4 Although climate change is not specific to Camden, the borough's highly built-up, inner urban environment means that we face specific environmental issues such as poor air quality and surface water flooding. The measures we can take to minimise the impacts of climate change and adapt to its effects need to consider and be appropriate to the borough's dense and historic character and sensitive environments. Where demonstrated, the Council will have regard to the costs and feasibility of measures to tackle climate change within developments. We will also take into account the cumulative costs of not responding to the need to mitigate and adapt to climate change as well as the long term cost savings such as in energy and water bills to the future occupiers. Measures to tackle climate change are integral in the development process and are a priority of the Council. They should not be seen as 'add-ons'.

13.5 The Council can influence environmental performance in the borough through its role in land use and transport planning and also through its own actions and community leadership. *Towards a Sustainable Camden – Camden's Environmental Sustainability Delivery Plan 2008-2012* sets out how we will reduce carbon emissions and improve the environmental performance of activities across the borough to meet national and local targets.



CS POLICY

CS13 – Tackling climate change through promoting higher environmental standards

Reducing the effects of and adapting to climate change

The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

a) ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;

b) promoting the efficient use of land and buildings;

c) minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:

1. ensuring developments use less energy,

2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;

3. generating renewable energy on-site; and

d) ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions

Local energy generation

The Council will promote local energy generation and networks by:

e) working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them, i.e. in the vicinity of:

– housing estates with community heating or the potential for community heating and other uses with large heating loads;

– the growth areas of King's Cross; Euston; Tottenham Court Road; West Hampstead Interchange and Holborn;

– schools to be redeveloped as part of Building Schools for the Future programme;

– existing or approved combined heat and power/local energy networks (see Map 4);

and other locations where land ownership would facilitate their implementation.

f) protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road);

Water and surface water flooding

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

g) protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir;

h) making sure development incorporates efficient water and foul water infrastructure;

i) requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and down-stream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross (see Map 5).

Camden's carbon reduction measures

The Council will take a lead in tackling climate change by:

j) taking measures to reduce its own carbon emissions;

k) trialling new energy efficient technologies, where feasible; and

l) raising awareness on mitigation and adaptation measures.

Reducing the effects of, and adapting to, climate change

Sustainable patterns of development

13.6 The location of development and mix of land uses have a significant influence on the amount of energy we use for transport, as well as whether we can generate or supply local energy efficiently. We will make the most efficient use of Camden's limited land and steer growth and uses that will generate a large number of journeys to the most accessible parts of the borough. We will also encourage an appropriate mix of uses to support sustainable modes of travel such as walking and cycling as well as local energy networks. Development will be focussed in Camden's growth areas, with other highly accessible locations, such as central London and most of our town centres, also considered suitable for development that significantly increases travel demand (please see policy CS1 – *Distribution of growth* and the Key Diagram – Map 1).

Efficient use of land and buildings

13.7 The efficient use of land and buildings will reduce pressure to develop undeveloped, 'greenfield' sites. Camden's historic and built up nature means most of our greenfield sites are designated open spaces. The Council will encourage higher densities in line with policy CS1 – *Distribution of growth*. To enable buildings to last longer it is important that they are designed and built to a high standard and to accommodate the changing requirements of occupants over time. Buildings can be designed to be adaptable in the future if consideration is given to:

- the design of the structure, to enable expansion;
- the layout of the internal space;
- mechanical services, to allow for expansion or changing expectations and technologies; and
- enabling 'retro-fitting', for example for renewable energy generation.

Energy hierarchy

Ensuring developments use less energy

13.8 A building's use, design, choice of materials and other measures can minimise its energy needs during both construction and occupation. The Council will encourage all developments to meet the highest feasible environmental standards taking into account the mix of uses, the possibility of re-using buildings and materials and the size and location of the development. In addition to design and materials, a building's internal heating and cooling design, lighting and source of energy can further reduce energy use. Policy DP22 – *Promoting sustainable design and construction* in Camden Development Policies provides further guidance on what measures can be implemented to achieve an environmentally sustainable building. The Building Research Establishment's Environmental Assessment Method (BREEAM) and the Code for Sustainable Homes provide helpful assessment tools for general sustainability. Further details on these assessment tools can be found in Development Policy DP22 and our Camden Planning Guidance supplementary document.

13.9 Camden's existing dense built form with many conservation areas and other heritage assets means that there are often limits to the contribution that orientation, height and footprint can make towards the energy efficiency of a building. This dense character, along with the varying heights of buildings in central London, can also make the installation of various technologies, including renewable energy technologies more difficult. For example, the efficient use of photovoltaics in Central London can be constrained by overshadowing from taller buildings. We will expect high quality and innovative design to help combat these constraints. Energy efficiency measures relating to heritage assets will be welcomed provided that they do not cause harm to the significance of the heritage asset and its setting. The refurbishment of some existing properties in the borough, such as Camden's EcoHouse in Camden Town and a home in Chester Road in Highgate have demonstrated how Victorian properties can be upgraded to meet Level 4 of the Code for Sustainable Homes energy performance standards. Given the large proportion of development in the borough that relates to existing buildings, we will expect proportionate measures to be taken to improve their environmental sustainability, where possible. Further details on this can be found in our Camden Planning Guidance supplementary document.



Making use of energy from efficient sources

13.10 Once a development has been designed to minimise its energy consumption in line with the approach above, the development should assess its remaining energy needs and the availability of any local energy networks or its potential to generate its own energy from low carbon technology. The Council's full approach to local energy generation and local energy networks is set out below (paragraphs 13.16 – 13.22).

Generating renewable energy on-site

13.11 Buildings can also generate energy, for example, by using photovoltaic panels to produce electricity, or solar thermal panels, which produce hot water. Once a building and its services have been designed to make sure energy consumption will be as low as possible and the use of energy efficient sources has been considered, the Council will expect developments to achieve a reduction in carbon dioxide emissions of 20% from on-site renewable energy generation (which can include sources of site-related decentralised renewable energy) unless it can be demonstrated that such provision is not feasible. Details on ways to generate renewable energy can be found in our Camden Planning Guidance supplementary document.

Adapting to climate change

13.12 It is predicted that in the future we will experience warmer, wetter winters and hotter, drier summers. In addition, Camden is likely to experience more intense rainfall and local flooding, more days with especially poor air quality, increased demand for its open spaces and outdoor pools and increased summer demand for electricity for cooling. To minimise the future need for summer cooling we will expect the design of developments to consider anticipated changes to the climate. For further details on what measures should be considered see policy DP22 – *Promoting sustainable design and construction* in Camden Development Policies. The Council is in discussions with the National Grid regarding future infrastructure improvements including, potentially, a new electricity grid supply point. To help ensure there is adequate water in the future we will require developments to be water efficient. Our overall approach to water conservation and run-off is detailed below.

13.13 Camden is fortunate that it contains Hampstead Heath, Primrose Hill and a part of Regent's Park which help reduce long term heating of the city, known as the urban heat island effect, and provide cool space in hot weather. We will continue to protect our open spaces and other green spaces, where possible, and seek to create additional open spaces. We will also continue to protect the borough's trees and encourage the creation of green and brown roofs and green walls, which help to keep local air temperatures lower. For more detail on how we are protecting and improving our open spaces and other green spaces please see policy CS15 – *Protecting and improving our parks and open spaces and encouraging biodiversity*. Policy DP24 – *Securing high quality design* in Camden Development Policies sets out how we will protect gardens, where possible.

13.14 Climatic changes will affect which plant and animal species thrive or decline. The City of London, which is responsible for Hampstead Heath, has identified potential threats to open spaces and biodiversity in its Climate Adaptation Strategy. It will therefore be important for the Council, other owners of open space and developers to consider the adaptation needs of plants and wildlife. The Council is trialling lower maintenance plant species at Waterlow Park and Cumberland Market. For more detail on our approach to biodiversity please see policy CS15.

13.15 We will also continue our strong efforts to reduce air pollution through mitigation and reducing traffic. Please see policy CS11 – *Promoting sustainable and efficient travel*. Detail on how we will expect development to take into account climate change is set out in policy DP22 – *Promoting sustainable design and construction* in Camden Development Policies.

Local energy generation and networks

13.16 The *Delivering a Low Carbon Camden* report concludes that the most cost-effective way for Camden to meet its carbon reduction targets is through a local energy generation and distribution system served by combined heat and power (CHP). CHP systems typically supply buildings with heat and power (usually electricity) generated on-site or nearby, therefore avoiding the losses which occur in transmitting electricity from plants outside London. CHP is highly efficient and can therefore make a significant contribution to goals to minimise carbon emissions. Cooling can also be incorporated in such systems where there is appropriate demand (known as combined cooling, heating and power or CCHP).

13.17 New decentralised energy networks negotiated through the planning system are most likely to begin in, and expand out from, the growth areas of King's Cross, Euston, Tottenham Court Road, West Hampstead Interchange and Holborn due to the expected scale and mix of development. A local energy network fuelled by gas-fired combined heat and power, a fuel cell and renewable sources has been approved as part of the King's Cross redevelopment. There are possibilities to expand this network beyond the border of the site, including into Islington. Camden is also working with the London Development Agency (LDA) and land owners to establish a decentralised energy network along Euston Road and into Islington. Map 4 shows the areas considered most likely to provide development-led decentralised energy networks.

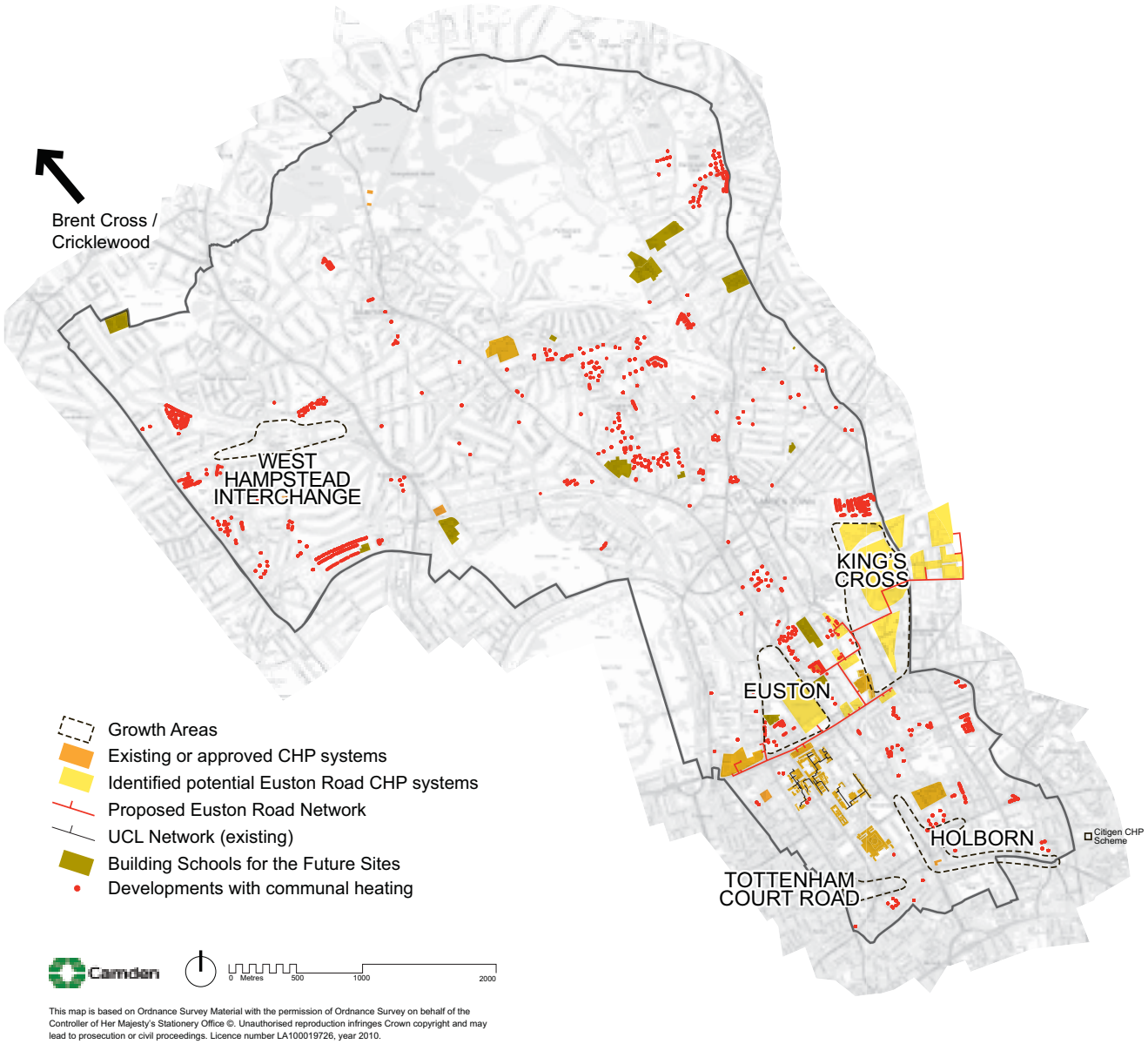
13.18 Providing a decentralised energy network in an already built up area is difficult. Although there is currently no extended CHP network in the borough, numerous Council housing estates are already on a community heating system, which can provide a starting point for a wider energy network serviced by CHP. There are also three successful local energy networks in the borough fed by CHP (two serving University College London buildings, one serving two housing developments on Eversholt Street) as well as individual systems at the Swiss Cottage Leisure Centre and the Royal Free Hospital in Gospel Oak and approved schemes at King's Cross, Regent's Place Estate, Southampton Row and Great Ormond Street Hospital. Where decentralised energy networks already exist, development in the area will be required to connect to them, unless it is proven not to be technically feasible or commercially viable.

13.19 The Council will require the developers of any large scheme within proximity of a Council housing estate to speak to us about the possibilities of exporting heat to the existing homes. We will also expect developments to export heat to any willing user, where feasible and viable. The largest possible decentralised energy system fed by CHP should be implemented. Where developments in the vicinity of an existing local energy network do not connect to that network or do not include their own CHP system due to feasibility and viability, we will require them to provide the on-site infrastructure for future connection and, where reasonable, a contribution towards laying future connections. The Council is investigating setting up a local energy network fed by CHP for Camden Town Hall, Argyle Street Primary School and two existing housing developments.

13.20 We will work with adjoining boroughs to promote connections to new or existing decentralised energy networks and with the Greater London Authority and London Development Agency to provide advice on funding and linking developments and systems. It will be important to provide for future links to decentralised energy networks within developments or across roads and sites where they are likely to be needed, as providing connections later is difficult in built up places like

Camden. See *Community Energy: Urban Planning for a Low Carbon Future* by the Combined Heat and Power Association and the Town and Country Association for more information on community heating, renewable energy and CHP.

Map 4: Combined Heat and Power Network



13.21 There is growing technical potential to generate heat from waste. The North London Waste Plan will identify future sites for waste facilities in the area (see policy CS18). Given the environmental benefits of using waste for heat, such as less waste going to landfill and turning waste into a resource, the Council will welcome proposals for energy from waste schemes in suitable locations, where they do not cause harm to the amenity of local occupiers.

13.22 The Camden Sites Allocations document will identify any areas or sites where we consider zero carbon development can successfully be promoted. These are likely to be areas or sites near one of the likely CHP locations shown on Map 4.

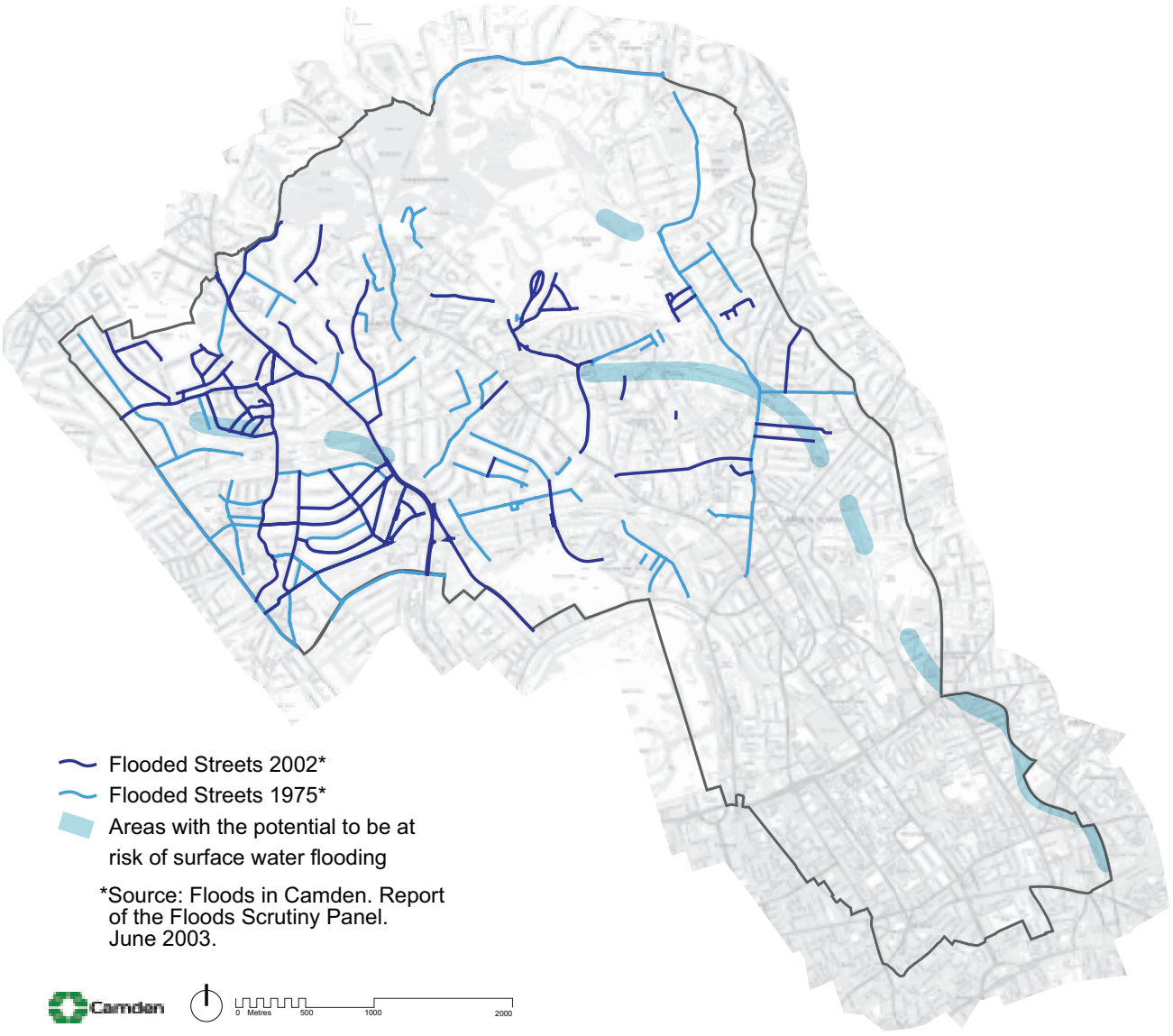
Water and surface water flooding

13.23 Water is an important resource which requires energy to clean it to drinking standard and to pump it to every building. Population growth and increased levels of water consumption per person mean that the availability of this resource is under pressure. Our growing population and an increase in hard surfaces also mean there is more foul water and rain water to be dealt with. These issues are predicted to become more important with hotter, drier summers reducing the amount of water available, and wetter winters putting additional pressure on the combined sewer and run-off network. Therefore, the Council will protect the borough's existing water infrastructure to ensure there is adequate water supply, water storage and foul water capability. Camden has five reservoirs, of which four are currently in use for storing drinking water. Thames Water has stated that these sites are likely to require future development and expansion to meet their operational requirements.

13.24 Thames Water identified that there will be a shortfall in the water supply for London within the next 30 years if measures are not taken. However, it will seek to ensure an adequate supply through education and metering to reduce consumption, continuing to repair water pipes, the construction of a desalination plant at Beckton and providing a new reservoir, if required (see Appendix 1 – *Key infrastructure programmes and projects* – item 60). To promote responsible consumption, the Council is working with Thames Water to install water meters in homes in Council ownership, as well as requiring all new development to install water efficient devices through the requirements in the Code for Sustainable Homes and BREEAM assessments.

13.25 Although Camden has very low risk from flooding from waterways, the North London Strategic Flood Risk Assessment identified several areas in the borough, in particular West Hampstead, that have experienced surface water flooding when existing water infrastructure has not been able to cope with surface and foul water at the same time as the result of heavy rain. The Environment Agency has developed a map showing areas with the potential to flood given the topography and depth of the site. Map 5 shows the parts of the borough that have experienced significant sewer or surface water flooding and the places that are considered to have the potential to be at risk of surface water flooding. The Council will require major developments or development that increases the amount of impervious surfacing to adequately manage the increases in surface water or sewage discharge and take account of known sewer flooding problems by including appropriate mitigation measures to avoid increased drainage problems and flood risk downstream. Our approach to basement/underground development is contained in Camden Development Policies (see policy DP27 – *Basements and lightwells*).

Map 5: Surface Water Flood Risk Potential



13.26 Thames Water's initial modelling indicates that local infrastructure improvements are likely to be required for Camden's growth areas, specifically King's Cross and Euston. As the combined sewer across the borough is a network, it will be important that all developments release as little foul and grey water (water from sinks, showers and washing machines) into the combined sewer system as possible by minimising the amount of water used on site and maximising re-use of grey water. British Waterways has identified the Regent's Canal as a source of grey water. Larger developments in areas already suffering from surface water flooding can provide the opportunity for improvements to be made to local infrastructure. Thames Water has advised the Council that the existing strategic, 'trunk' infrastructure is likely to be able to accommodate growth levels. In addition, it is building the Thames Tideway Scheme to improve the capacity of London's combined sewer network. Further information on planned sewerage/waste water infrastructure and sustainable urban drainage systems is provided in Appendix 1 – *Key infrastructure programmes and projects* (items 60 and 61).

13.27 The Council's detailed approach to water use and management within developments is set out in Camden Development Policies (policy DP23 – *Water*).

The Council's carbon reduction measures

13.28 The Council is undertaking a range of measures to reduce its own energy use and energy use throughout the borough. These include:

- fuelling 50% of the Council vehicle fleet by liquefied petroleum gas (LPG), electricity or hybrid means;
- installing energy efficiency measures in Council houses;
- using sustainable timber as standard in housing refurbishment;
- investing in cavity wall and roof insulation for Council homes and private sector housing (over 2,000 dwellings have received cavity wall insulation);
- making 'eco-grants' available for various measures, including the installation of solar panels and green roofs;
- our Small steps, Big difference campaign to raise awareness of climate change and encourage changes to behaviour to reduce the borough's environmental impact; and
- supporting the introduction of energy efficient and carbon saving technology. For example, by investing in our own hydrogen fuel cell which is also used as an education tool and by trialling biomethane in our vehicle fleet.

Further Council initiatives are set out in our Climate Change and Environmental Sustainability Delivery Plan 2008-2012.

Key evidence and references

- Delivering a Low Carbon Camden – Carbon Reduction Scenarios to 2050; SEA-Renue; 2007
- Towards a Sustainable Camden. Camden' Environmental Sustainability Delivery Plan 2008-2012
- Camden Sustainability Task Force Report on Energy and Energy Efficiency; 2007
- Camden Together – Camden's Sustainable Community Strategy; 2007 – 2012
- North London Strategic Flood Risk Assessment, Mouchel; 2008
- The London Plan (consolidated with Alterations since 2004); Mayor of London; 2008
- Action Today to Protect Tomorrow – Mayor's Climate Change Action Plan; 2007
- Planning Policy Statement: Planning and Climate Change – Supplement to Planning Policy Statement 1; CLG; 2007
- Planning Policy Statement (PPS) 22: Renewable energy; ODPM; 2004
- Planning Policy Statement 25: Development and Flood Risk, CLG, 2006
- Community Energy: Urban Planning for a Low Carbon Future; The Combined Heat and Power Association and the Town and Country Association 2008
- Hampstead Heath Management Plan Part 1. Towards a Plan for the Heath 2007-2017; City of London & Land Use consultants; 2007

Camden Development Policies 2010-2025

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DP20. Movement of goods and materials

20.1 Transport of goods and materials is essential to the economy, but if not managed sustainably it can be harmful to the environment, and cause congestion. As a dense, urban inner London borough the movement of goods in Camden can have particularly strong impacts in terms of traffic movement, noise and air pollution and, in some circumstances, impact on the quality of life of residents. Core Strategy Policy CS11 – Sustainable and efficient travel states that the Council will seek to minimise the movement of goods and materials by road, encourage the use of more sustainable modes of freight movement, and to minimise the impact of the movement of goods and materials on local amenity, traffic and the environment.

20.2 Policy DP20 builds on this by setting out the Council's requirements for new developments in relation to the movement of goods and materials both during construction and when in operation. It should be read in conjunction with policy DP16 – Development and transport implications and Core Strategy policy CS11.

DP POLICY

DP20 – Movement of goods and materials

Minimising the movement of goods and materials by road

In order to minimise the movement of goods and materials by road the Council will:

a) expect development that would generate significant movement of goods or materials both during construction and in operation to minimise the movement of goods and materials by road, and consider the use of more sustainable alternatives such as rail and canal links;

b) promote the development and use of freight consolidation facilities and other initiatives with potential to reduce the impact of goods vehicles, and encourage the use of cycle courier services for local deliveries; and

c) seek to promote and protect facilities for the movement of goods by rail and water, including facilities for transfer between road, rail and canal.

Minimising the impact of the movement of goods and materials by road

The Council will expect development that would generate significant movement of goods or materials by road, both during construction and in operation, to:

d) be located close to the Transport for London Road Network or other Major Roads;

e) avoid any additional need for movement of vehicles over 7.5 tonnes in predominantly residential areas;

f) accommodate goods vehicles on site; and

g) seek opportunities to minimise disruption for local communities through effective management, including through the optimisation of collection and delivery timings and the use of low emission vehicles for deliveries.

Minimising the movement of goods and materials by road

Movement of goods by rail and water

20.3 The Council recognises the problems that are caused by long distance movement of goods by road, and the potential advantages of using rail and water as an alternative. The North London Line, the Gospel Oak to Barking Line and the West Coast Mainline are already used for significant volumes of rail freight. The Regent's Canal provides the potential for more sustainable, lower impact water borne movement of freight. It is the only navigable waterway in Camden, and is not currently used for any significant volume of freight movement.

20.4 Per tonne carried, rail freight produces nearly 90% fewer emissions than HGVs (London Rail Freight Strategy 2007). No equivalent figures are available for canal freight, but canal movement has minimal social and environmental costs compared with the noise/vibration, air pollution and visual intrusion that can be created by heavy goods vehicles.

20.5 Regent's Canal is thought to be an economically viable route for some freight movements, notably the removal of demolition waste from canal-side sites. The Council will expect new developments along or close to the Canal to consider its use for the movement of goods and materials, and to contribute to the improvement of the Canal towpath, where appropriate. Developers should also make the most of opportunities to use rail links to move goods and materials.

20.6 We will protect the existing aggregate handling facility at King's Cross, which is a modern facility re-engineered in association with works for the Channel Tunnel Rail Link. We will also protect other track-side and canal-side sites that are brought forward for transfer use or processing rail and canal freight if their benefits outweigh any harm.

Efficient freight movement

20.7 The Camden Core Strategy promotes the use of freight consolidation as a key measure in reducing the number of trips made by goods vehicles, and indicates that there may be potential for a freight consolidation facility serving Camden's Central London Area (Core Strategy paragraph 11.23). The Council will expect developments to take advantage of existing freight consolidation facilities for service deliveries, where they exist. The Council will support proposals for freight consolidation facilities, subject to the other policy measures set out in our Local Development Framework.

20.8 As part of its approach to minimising road freight, the Council will discourage frequent deliveries of biomass fuel associated the sustainability and renewable energy requirements set out in policy DP22 and Core Strategy policy CS13 and in relation to climate change and sustainable design and construction. Paragraph 32.6 below addresses the air quality impacts associated with the burning of biomass fuel.

Cycle freight

20.8 The Council will promote the use of cycle-freight as an extension to cycle courier services by encouraging developers to make provision for cycle freight as part of Delivery and Servicing Management Plans. This provides the potential to manage deliveries in a way that is zero carbon, has little or no noise or air pollution implications, and has a minimal impact on congestion.

Minimising the impact of the movement of goods and materials by road

20.9 Goods vehicles, particularly heavy goods vehicles, can have negative impacts on local amenity and traffic movement in certain areas. Examples are areas suffering from poor air quality, areas where many delivery points are located close together (such as town centres), residential areas and narrow roads. Goods vehicles manoeuvring, loading and unloading add to pollution, and may cause obstructions and congestion, inconvenience and danger to pedestrians and other road users, and damage to pavements. The Council actively encourages a number of measures with potential to mitigate these impacts.

Moving goods and materials on appropriate roads

20.10 Policy DP21 – *Development connecting to the highway network* seeks to guide all forms of transport to the appropriate parts of Camden's road hierarchy. The roads considered to be most suitable for use by lorries and other heavy goods vehicles are those in the Transport for London Road Network and others designated as Major Roads. It will not usually be possible for development to directly access or be loaded from the Transport for London Road Network, but new development that will be served by heavy goods vehicles should be located to minimise the use of district and local roads for the movement of goods, particularly roads which provide primarily for access to residential properties.

20.11 The majority of service trips in central and inner London are made by freight vehicles of less than 7.5 tonnes gross vehicle weight, and this is the maximum size of vehicle that should be accommodated in residential areas on a daily basis. A number of weight limits have been introduced across largely residential parts of the borough, the largest of which covers an area between Camden Road and Kentish Town Road, and between Fortess Road and Highgate Road, extending up to Highgate. In this area, goods vehicles exceeding 7.5 tonnes are not permitted except for access.

Accommodating goods vehicles on site

20.12 The impact of goods vehicles can be reduced where a loading and unloading bay is included within a development, particularly where the bay can be enclosed. Developments that will need to be serviced by vehicles other than bicycles or cars should incorporate space within the site for goods vehicles wherever it is feasible to do so. The space required for service vehicles is set out in the Council's Parking Standards at Appendix 2.

Construction management plans

20.13 Where appropriate, the Council will ensure that applicants provide Construction Management Plans to demonstrate how a development will minimise impacts from the movement of goods and materials during the construction process. Construction Management Plans should deal with the hours of site activity; pick-up and delivery times for materials and equipment; limits on construction vehicle size; trip numbers and routes; the safety of road users during construction; and any temporary use of the highway for siting of construction plant. They should also deal with any temporary disruption or severance of highway links needed during the development process, as well as any other relevant measures needed to manage the construction phase.

20.14 Our Camden Planning Guidance supplementary document sets out further details regarding the Council's requirements for Construction Management Plans. See also policy DP26 for information regarding the Council's approach to managing the impact of the construction process on local amenity.

Effective management of servicing and deliveries

20.15 The Council will seek Delivery and Servicing Management Plans for developments that are likely to generate a significant need for the movement of goods and materials when occupied, in order to ensure that potential impacts are minimised.

20.16 The way that trips are managed will influence their impact on local communities, traffic movement and the environment. Delivery timings can also have a significant influence on the impact of goods movement, both on the highway network (including site specific and cumulative impacts), and on residential amenity from deliveries made out of working hours. The Council will therefore ensure that delivery timings are managed to optimal effect through the use of Delivery and Servicing Management Plans. We will also control the impact of goods vehicles through waiting and loading restrictions.

20.17 The Council will promote the use of quiet and low-pollution vehicles such as electric vehicles by encouraging developers to make provision for the use of such vehicles as part of Delivery and Servicing Management Plans. Low emission vehicles can significantly reduce noise and air pollution, and therefore offer the opportunities for necessary freight trips to be undertaken using vehicles that have a much lower impacts than standard freight vehicles.

20.18 Our Camden Planning Guidance supplementary document sets out further details regarding the Council's requirements for Delivery and Servicing Management Plans.

Key evidence and references

- Camden Local Implementation Plan (LIP) 2005/06 – 2010/11
- Camden Green Transport Strategy 2008 – 2012
- The London Plan (consolidated with Alterations since 2004); Mayor of London; 2008
- Planning Policy Guidance (PPG) 13: Transport; ODPM; 2001
- West London Canal Network Study – Phase 1 & 2: Developing Water Borne Freight on the West London Canal Network; Transport for London/ British Waterways London; September 2005

DP23. Water

23.1 Our built environment plays a large role in the way water is consumed, distributed and disposed of. The way water is used in a building and the pollutants it picks up running across a site affect the quality of the water that reaches our combined storm water and sewer system. In addition, the location of a development, and any flood mitigation measures used, can have an impact on local and downstream surface water flooding. For example, by capturing surface water on-site so that the flood risk to downstream properties is reduced or, in poorly located and designed schemes, by diverting surface water onto adjoining sites, increasing the risk of flooding on those sites.

23.2 As noted in paragraph 22.4 above, although the need for sustainable design and construction is not specific to Camden, our dense built-up environment limits the ways sustainability can be addressed. The efficient use and disposal of water and the minimisation of surface water run-off are elements of sustainable design and construction that need to be addressed sensitively taking into account Camden's specific characteristics.

23.3 Core Strategy policy CS13 – *Tackling climate change through promoting higher environmental standards* sets out our overall approach to tackling climate change which includes reducing our water consumption and reducing the risk of surface water flooding. Map 2 and policy CS13 identify areas of the borough that have been affected by sewer or surface water flooding in the past as well as areas identified as being at risk of surface water flooding.

23.4 Policy DP23 contributes to the implementation of the strategy set out in policy CS13 by seeking to reduce water consumption and limit the amount of waste water entering the combined storm water and sewer network. Policy DP23 should be read in conjunction with policy Core Strategy CS13, policy DP22 – *Sustainable design and construction* above and the North London Strategic Flood Risk Assessment.

DP **POLICY**

DP23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;

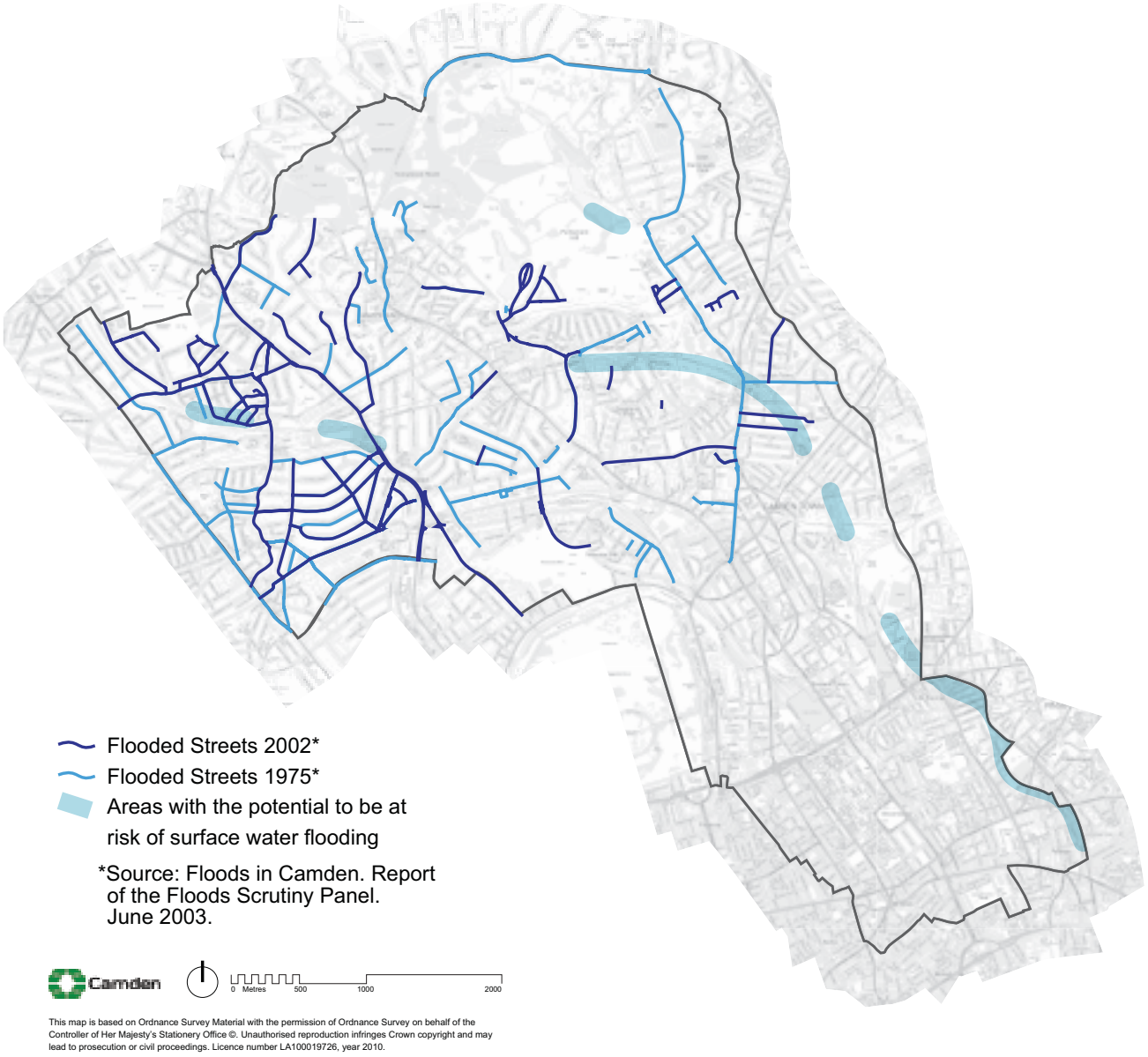
b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;

c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;

d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and

d) encouraging the provision of attractive and efficient water features.

Map 2: Flood Risk



23.5 We only consume a small proportion of water that enters a building. Most of the water we use is for washing and flushing the toilet and therefore leaves the site again. The pumping and cleaning of water to drinking level consumes energy. In order to save energy and drinking water, water should be consumed efficiently and, where possible, treated and consumed close to source. Most of the water we do not consume, including rainfall, ends up in the combined storm water and sewer system. Our increased use of water, along with a growing population and increasing use of impervious surfaces, means more waste water is entering the combined storm water and sewer system, putting pressure on it.

Efficient use of water

23.6 Developments must be designed to be water efficient to minimise the need for further water infrastructure. This can be through the installation of water efficient appliances and by capturing and re-using rain water and grey water on-site. Rainwater harvesting systems are discussed in paragraph 23.8 below. Grey water use captures water from sinks, showers and washing machines for its re-use. Major developments and high or intense water use developments, such as hotels, hostels and student housing, should include a grey water harvesting system. Where such a system is not feasible or practical, developers must demonstrate to the Council's satisfaction that this is the

case. We will assess the performance of water-saving measures against the Water category in BREEAM, EcoHomes or the Code for Sustainable Homes assessments (see our Camden Planning Guidance supplementary document for further details).

Reducing surface water run-off

23.7 The water efficient methods expected above will help reduce the overall amount of waste water entering the combined storm water and sewer system so it retains some capacity to deal with heavy rainfall. The volume and rate of run-off from heavy rainfall can be reduced through the use of sustainable urban drainage systems (SUDS), including green and brown roofs, pervious paving and detention ponds or tanks. We will seek to achieve the most sustainable methods of SUDS wherever possible. The Council's expectations for the design and location of green and brown roofs are set out in policy DP22 – *Promoting sustainable design and construction*. Where green or brown roofs are provided we will expect them to be designed to reduce run-off.

23.8 Some sustainable urban drainage methods enable captured water to be re-used, and are generally known as 'rainwater harvesting systems'. These systems capture water falling on a site, in particular on roofs and impervious paved areas, and use the water for irrigation, flushing of toilets and, where the water is clean enough, washing clothes. With appropriate filtration, the capture of rainwater can also be incorporated into a grey water system.

23.9 It is important that water is captured from the top of the water catchment area, which generally starts at the top of a hill, to prevent flooding of more susceptible sites below. We will require all new build developments where run-off is likely to have an impact on buildings downstream (see Map 2) to include a green or brown roof and/or a rainwater harvesting system, with the aim of achieving a 'greenfield' rate of run-off. A greenfield run-off rate is one that reflects the natural rate of water run-off from a site before it was developed. All other development that increases the amount of impervious surface will be expected to minimise the amount and rate of run-off from the site to at least the existing rate. The size of a rainwater harvesting system should take into account annual rain yield, consumption rates and the need for on-site detention to prevent flooding. Information on sizing based on annual yield and consumption rates can be obtained from the Environment Agency.

Minimising flood risk

23.10 All sites over one hectare are required by government Planning Policy Statement (PPS) 25 – *Development and Flood Risk* to produce a site specific Flood Risk Assessment. In Camden these assessments should focus on the management of surface water run-off and should address the amount of impermeable surfaces resulting from the development and the potential for increased flood risk both on site and elsewhere within the catchment.

23.11 The area shown on Map 2 is known to be at risk from local surface water flooding. It is especially important for development within this area to be designed to cope with being flooded without placing additional pressure on adjoining sites and on the combined sewer system. For example, development should not prevent the flow of water across its site where this would lead to water build up or divert water onto an adjoining site. Instead, water should be captured and stored for re-use or for slow release to the combined sewer. Where a site is known to have a particular drainage issue, development should not place additional strain on the existing drainage infrastructure. Within the areas shown on Map 2 we will expect water infrastructure to be designed to cope with a 1 in 100 year storm event (including an appropriate allowance for climate change) in order to limit the flooding of, and damage to, property. Please see Planning Policy Statement 25 and its Practice Guide for further guidance on managing flood risk. The Council's Camden Planning Guidance supplementary document also contains further information on water and sustainable design and construction.

23.12 Development can have an impact on the water environment beyond the site where it takes place by altering the flow of water above and below ground and changing where water is absorbed or rises to the surface. For example, the construction of a basement could cause surface water flooding if its location forces water to the surface or could cause flooding elsewhere if the movement of water below ground is altered. Changing water movements can alter soil conditions in the wider area. Applications for developments in areas where historic underground streams are known to have been present will be required to include assessments of the potential for, and management of, groundwater flood risk (see our Camden Planning Guidance supplementary document for further information). Basements also affect the ability of the ground to absorb rain when soil is replaced by an impervious structure and can be particularly susceptible to flooding due to their underground location. In certain circumstances the use of basements may be restricted to non-habitable uses. For further detail on our approach to basements please see policy DP27-*Basements and lightwells*.

Water features

23.13 Water features can celebrate the importance of water and can be used as an educational tool. We will expect any water feature provided to be of a high quality and, where possible, provide some interpretation of the local environment or community. For example, any water feature provided along the route of the old Fleet River, which used to run from Hampstead Heath to the City of London, could take the opportunity to provide an interpretation of this lost watercourse. Any proposed water feature should also be water and energy efficient.

Key evidence and references

- Camden Sustainability Task Force Report on Food, Biodiversity and Water; 2008
- Towards a Sustainable Camden – Camden's Environmental Sustainability Delivery Plan 2008-2012
- Sustainable Design and Construction Supplementary Planning Guidance; Mayor of London; 2006
- Planning Policy Statement 25 – Development and Flood Risk; CLG, 2006
- Planning Policy Statement 25 – Development and Flood Risk – Practice Guide; CLG, 2008
- North London Strategic Flood Risk Assessment; Mouchel; 2008
- Greywater: An information guide; Environment Agency; 2008
- Harvesting Rainwater for domestic uses; Environment Agency; 2008